Prepared for: Australian Retirement Services
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Amended Master plan, testing and recommended LEP and DCP controls

Castle Ridge Resort
Castle Hill

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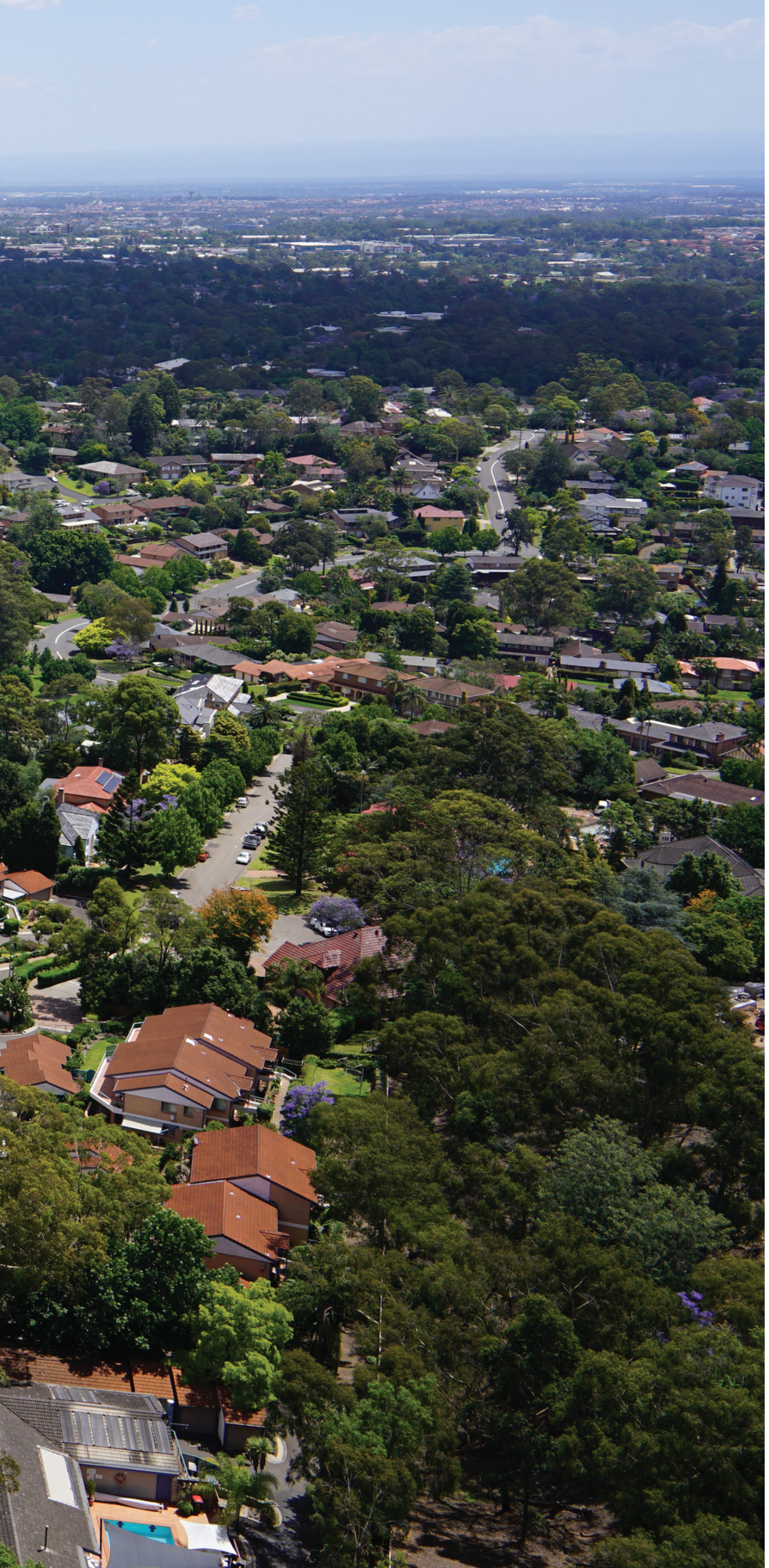


01 Introduction

1.1 The project to date

A Planning Proposal was initially lodged with The Hills Shire Council in July 2017. Following a rezoning review in 2018, the proposal was revised to respond to feedback received from Council and the Sydney Central City Planning Panel.

A revised Planning Proposal was lodged in January 2019. The Planning Proposal was subject to a rezoning review in August 2019. The Planning Panel recommended reduced heights to be no greater then 9 metres at the edges of the site, and greater consistency between the proposed heights in the LEP and master plan.

In 2020 the master plan was further refined based on the feedback from Council and the Planning Panel.

Following meetings held with Council Officers on the in February and March of 2021 preliminary feedback was received that has formed the basis for the master plan changes detailed in this report.

1.2 Purpose of this report

This report is intended to superseded the Master Plan, Assessment, LEP and DCP recommendations presented in chapters 4,5 and 6 of the Urban Design Report as submitted with the Planning Proposal in 2019.

	Existing
Zoning	E4 Environmental Living
Permitted use	Low density and low-impact residential development (dwelling houses, secondary dwellings and attached dual occupancies only) on land that has special ecological, scientific or aesthetic values. In the E4 Environmental Living zone, multi dwelling housing and residential flat buildings are prohibited.
Height	2 to 3 storeys (9metres)
FSR	N/A
Total GFA	N/A
Parking (includes visitors)	145
Usable private open space	Approximately 1.5ha (40% site area)
Significant trees retained	NA
Extent of basement area	NA

July 2017

January 2019

August 2020

Amended master plan

July 2017 master plan	January 2019 master plan	August 2020 master plan	Amended master plan
E4 Environmental Living, retain existing zoning.	E4 Environmental Living, retain existing zoning.	E4 Environmental Living, retain existing zoning.	E4 Environmental Living, retain existing zoning.
Addition of seniors housing as additional permitted use	Addition of seniors housing as additional permitted use	Addition of seniors housing as additional permitted use	Addition of seniors housing as additional permitted use
4 to 8 storeys (14 to 27 metres)	3 to 6 storeys (12 to 22 metres)	3 to 6 storeys (12 to 22 metres)	3 to 6 storeys (12 to 22 metres)
1:1	1:1	0.83:1	0.83:1
37,176sqm	35,715sqm	30,563sqm	30,754sqm
420	388	321	321
17,730m^2 (48% site area)	19,000m^2 (53% site area)	19,000m^2 (53% site area)	19,000m^2 (53% site area)
28	34	34	29
15,011m^2 (40%)	9,160m^2 (25%)	8,840m^2 (23%)	10,975m^2 (29%)

02 The master plan

2.1 Revised Master Plan

Following meetings held with Council Officers on the 12th of February and the 11th of March preliminary feedback (on the previous master plan - see below) was received that has informed a revised master plan.

The following is a summary of the key issues raised and how the revised master plan has responded.

Previous master plan (for reference)

Establish a finer grain built form

The revised master plan has been amended to adopt significantly smaller floor plates with a maximum length of 40m.

This break down of the built form envelopes allows for an increase in the number of buildings (from 9 to 14) that are significantly smaller in footprint and elevation.

This will help to create a more ‘village like’ feel that is consistent with the character of existing development on the site.

Create more usable open space through changes to built form and layout

In breaking down the built form on the site into smaller footprints it has been necessary to make some minor impacts on the central communal open space. Notably this occurs at building J and building F.

Whilst these impacts on the existing open space are very minor the net gains in terms of an improved built form outcome (additional articulation and finer grain) are considered significant.

Further, this approach allows for more usable communal spaces between buildings particularly in the eastern portion of the site as well as improved landscape connections and views between them.

The overall quantum of usable communal open space remains unchanged (from the previous master plan) at a generous 53% of the site area.

This is an increase when compared to the existing development which sits at approximately 40% (1.5ha) of the site as usable communal open space.

Include substantial variation and articulation in building heights and roof forms

The plan allows for heights to vary from building to building to assist with breaking down the built form and articulate each building individually. Further, the topography of the site means that most buildings present as substantially different (up to two storeys) from different aspects.

It is proposed to utilise a range of pitched roof forms as well as green roofs/roof gardens to provide additional articulation and reinforce the ‘village like’ feel of the development.

Limit buildings to 2 storeys where directly interfacing with site boundaries

The revised master plan has allowed for a range of building heights from 4 - 6 storeys with portions of buildings adjacent to site boundaries being restricted to 2 storeys.

Taller 5 and 6 storey buildings are located away from the boundaries towards the centre of the site.

It is worth noting (refer to interface study on subsequent pages 22-29) that due to the local topography none of the proposed building envelopes located adjacent to site boundaries significantly exceed the height of adjoining development/dwellings.

The master plan

Palisander Place

Oakhill College

Pioneer Place Reserve

St. Paul's Anglican Church

Old Northern Road

2.2 Built form

The built form concept has been developed to retain and enhance many of the physical characteristics of the site, to provide residents with a higher level of amenity in relation to apartment design. The envelopes have been set out in a manner which are compliant with the Apartment Design Guide for residential flat buildings in terms of distance between buildings and suggested building depth.

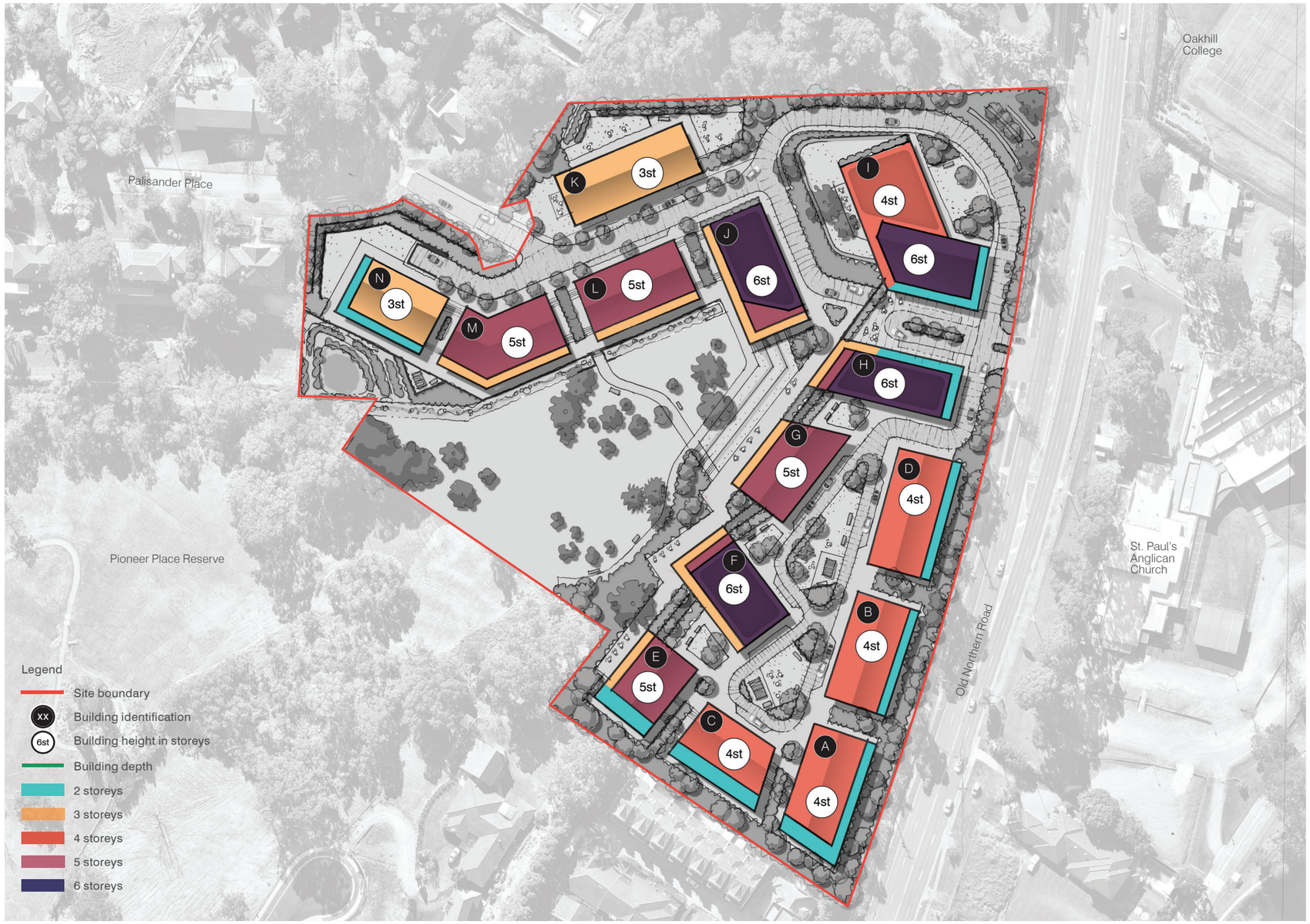
Care has also been taken to ensure that the buildings respond to the steep grade of the site. Buildings range in height from 2-6 storeys and have been placed on both the upper ridge (along Old Northern Road) and the lower areas (behind Palisander Place). The tallest building envelopes (6 storeys) are located at the centre of the site with a 3 storey street wall directly facing the park. Variation in building heights around the central open space reduce perceived bulk.

To retain the sense of fine grain built form currently existing on the site, buildings have a maximum length of 40m.

The indicative building envelopes have also been considered with a view to restricting new development to areas where development currently exists. This ensures that encroachment onto the parkland is minimised and that this special area, which is so intimately connected to the character of the site, is retained.

Buildings located on or near the site boundaries (Old Northern Road, Palisander Place, Pioneer Place Park or adjacent residential interfaces) have been set back and modulated to present a lower 2-3 storey interface which is in keeping with the scale of adjacent development and the steep changes in topography across the site.

Reducing scale at the edges also ensures that the visual bulk and impact of buildings are minimised from both adjacent houses and the public domain (refer to Interface Study on subsequent pages 22-29).



2.3 Access and movement

An indicative access and movement strategy for pedestrians and vehicles has been developed for this master plan to improve access from Old Northern Road and to ensure that Palisander Place remains a secondary point of entry. The Old Northern Road under the proposal will be upgraded to a left in left out entry with an integrated, new deceleration lane to ensure a safer turn in for residents.

An on-demand Village bus will operate, providing access to Castle Hill strategic centre, and surrounding services and facilities.

The indicative design maximises the site for pedestrians while minimising the movement of vehicles on site to ensure a safer pedestrian environment. The road for service vehicles and deliveries will be accessible off the upgraded Old Northern Road entry and loop around Building E.

The upper portion of the site (between buildings A to H) will feature a shared pedestrian zone and drop-off loop. A similar shared pedestrian zone is also proposed for the lower portion of the development (between buildings F and I) to ensure all residents have a front door and street address which is within a walkable grade of 1:20 or greater.

The master plan provides a rationalised road and pedestrian network that minimises steeper gradients to be within an acceptable range between 1:20 and 1:14. This encourages pedestrian access and minimises the need for shorter vehicle trips around the Village. Vertical movement of pedestrians will be accommodated through the provision of lifts within building lobbies. This will enable residents to move easily across the steep site without the need for external stairs or ramps, which present risks of injury due to falls.

2.4 Tree retention

The site contains a large number of existing trees and mature canopy. This contributes the leafy green character of the surrounding suburb and the existing amenity of the retirement village.

The Indicative master plan for the site acknowledges this by maintaining, as much as possible, the existing building and hard surface footprint. Proposed building envelopes and hard surfaces have been located to maximise retention of existing canopy.

The topography of the site requires excavation as a necessary step for the redevelopment to accommodate key sub-floor functions such as services, loading and car parking.

The extent of basement excavation has been indicatively shown, and its size has been minimised to mitigate disruption to existing trees and to ensure areas of deep soil are provided for new tree planting.

2.5 Significant trees

The location of building envelopes has been carefully considered to maximise the retention of significant / high value trees on site.

An arborist assessment of the indicative master plan has concluded that it should be possible to retain a total of 22 out of 31 (71%) high value/significant trees.

Of the 22 significant trees to be retained the arborist report identifies 3 which are subject to further investigation at the DA stage (root mapping) and/or construction methodology in consultation with the project arborist.

1:1,500 0 15 30 45 60 75M

2.6 Landscape and open space

The landscape and open space interface has been carefully considered to encourage social interaction between residents, and ensure all residents have good views of the park and a high level of outdoor amenity.

1. New paved threshold and entry feature to Old Northern Road including a plaza entry drop-off area and visitor parking.
2. Village street with vehicular and pedestrian access to ensure all residents have a ‘front door.’ A consistent ground treatment will reinforce a low speed environment and include raised planters with seating.
3. Small communal terrace areas for small gatherings and casual interactions with regional and parkland views.
4. Communal garden with central lawn space, seating, BBQ and vegetable patch for cultivation of produce.
5. Intimate north facing communal garden spaces for reading or quiet activities in small groups or as an individual.
6. Elevated communal terrace with retained mature trees and parkland views.
7. Central lawn area and park side terraces for small communal events and celebrations.
8. Existing parkland areas with retained mature trees.
9. Open vegetated overland flow channel/ stream feature.
10. Entrance from Palisander Place incorporating new on-grade visitor spaces.
11. Landscaped communal areas between buildings with regional and parkland views for small gatherings, casual interactions and connecting the central lawn with the parkland.

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Section 1

This section illustrates the positioning of Building I, which is a 4-6 storey building at the northern end of the site. The ground level of the building is consistent with the existing topographic levels on the site at RL 164.0 to the east and RL 161.0 to the west.

The envelope is stepped back on the eastern side facing old Northern Road and will appear as a 4 storey volume to keep the overall form to this edge low and minimise its overall visual impact.

The road level of Old Northern Road from this point is RL 167.4 and when the buildings

Legend

- Site boundary
- Existing terrain
- Community facilities
- Independent living units (ILUs)
- Basement car parking

Section location map

Section 2

Section 2a
The section illustrates the condition through the centre of the site. The existing access road in the lower part of the site between Buildings K and L will be re-graded and converted into a share way. Building K is 3 storeys in height with a maximum building height of RL 164.4, ensuring it remains at 9 metres from the natural ground level. The steep rise of the slope from the northern boundary to the neighbouring property at 12E Palisander Place will ensure the visual impacts on Building K and L will remain low.

Building L, is a 3-5 storey building partially integrated into the existing slope of the site and its top floor is set back 3 metres to ensure a pedestrian scale street wall height and ensure visual impact when viewed from the park is minimised.

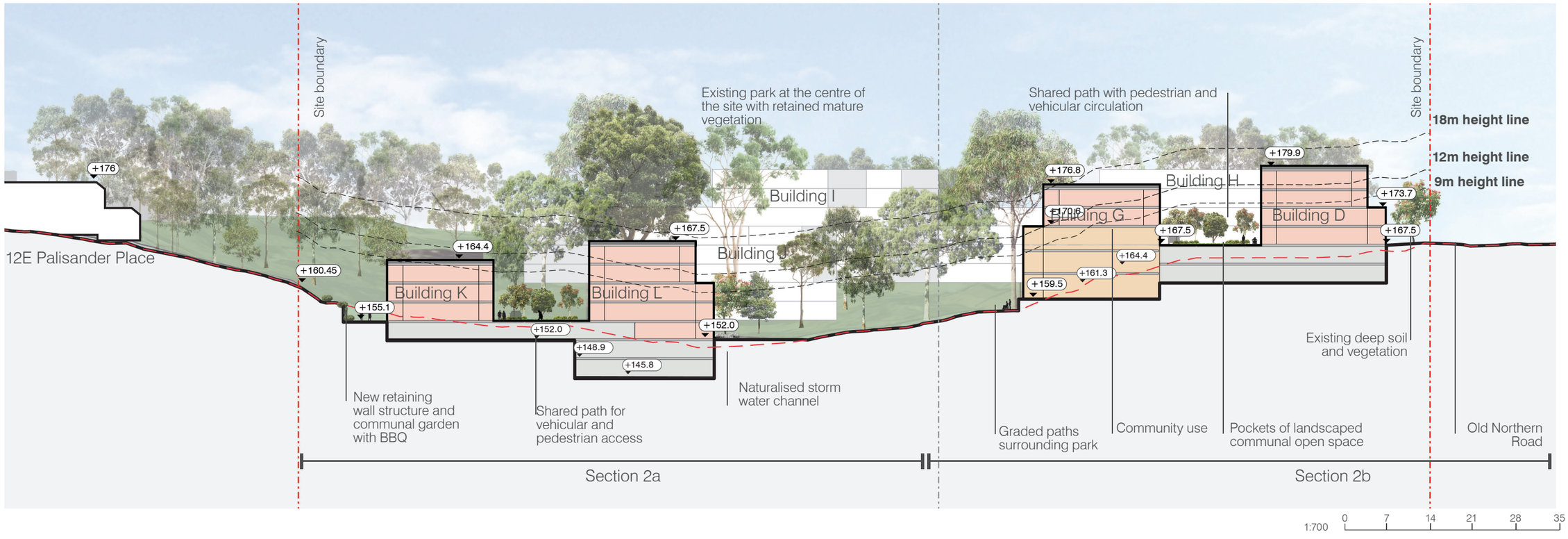
Section 2b
The section illustrates the condition through the centre of the site along Old Northern Road. Building D is a 2-4 storey building which is setback 7m from Old Northern Road to accommodate deep soil and tree planting.

Building G is 3-5 storey building with the upper two storeys of the building envelope facing the park set back to minimise its bulk and scale when viewed from the park.

The eastern portion of the building will appear as a 3 storey volume when viewed from the communal open space fronting Old Northern Road.

Legend
- Site boundary
- Existing terrain
- Community facilities
- Independent living units (ILUs)
- Basement car parking

Section location map



Section 3

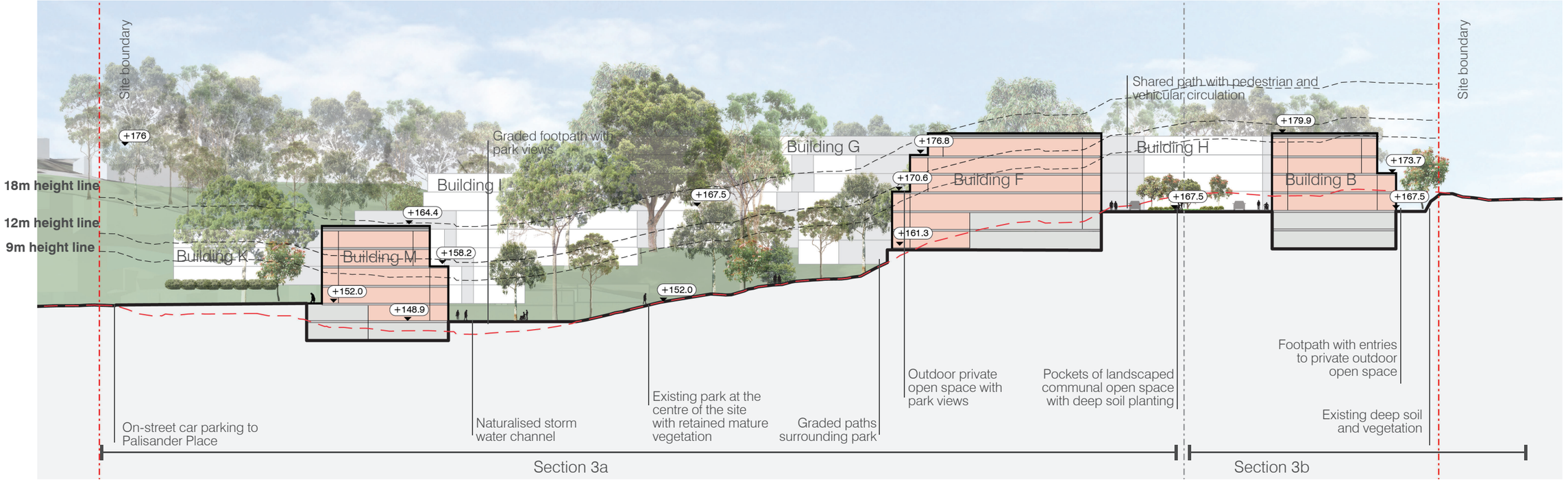
Section 3a
This section incorporates Building G, which faces the central open space. Similar to Building F located adjacent, the 4-5 storey building is kept low and incorporates a top floor setback to minimise its visual impact to the open space. A small setback is also incorporated along the new shared pedestrian way to further minimise its visual impact from the street.

Section 3b
This section illustrates the design approach adopted to minimise height and visual bulk of buildings along Old Northern Road. Building C is kept low at 3-4 storeys with a maximum height of RL 176.6. The retention of existing trees along the eastern boundary interface will partially screen the building from Old Northern Road.

Building A, located opposite of Building C, is a 3-6 storey building partially integrated into the existing slope of the site with a maximum height of RL 177.3.

By working with the existing topographic levels of the site, the building appears as a 3 storey height when viewed from the shared path. The building will serve as the focal point of village life and offer a range of facilities for residents to meet, socialise and hold major events.

Section location map



Section 4

This section illustrates the design approach adopted for the highest point of the site. By working with the existing ground levels, building A is kept low at 2-4 storeys, with the uppermost level facing Old Northern Road set back to minimise the overall bulk and scale (RL 176.8). The retention of trees along the eastern boundary interface will partially screen the building from Old Northern Road.

Building E, is a 5 storey building partially integrated into the existing slope of the site with a maximum height of RL 176.8. The side facing the park is set back and steps down to an RL 170.6 to minimise its visual impact to the park. The eastern portion of the building will appear as a 2 storey volume when viewed from the central space between the two buildings.

Building C sits between Buildings A and E and is kept low at 2-4 storeys with the uppermost level set back to the southern boundary creating a 2 storey interface with the neighbouring dwellings.

The spaces between the buildings comprises a partially dedicated green space which acts as a pedestrian way vehicular access.

Legend

- Site boundary
- Existing terrain
- Community facilities
- Independent living units (ILUs)
- Basement car parking

Section location map

03 Interface analysis

3.1 Site interface conditions

The site's unique topography and location at the top of the large hill presents a diverse range of boundary conditions. The following boundary conditions are illustrated in detail to demonstrate the design approach to built form, setbacks and height of each interface.

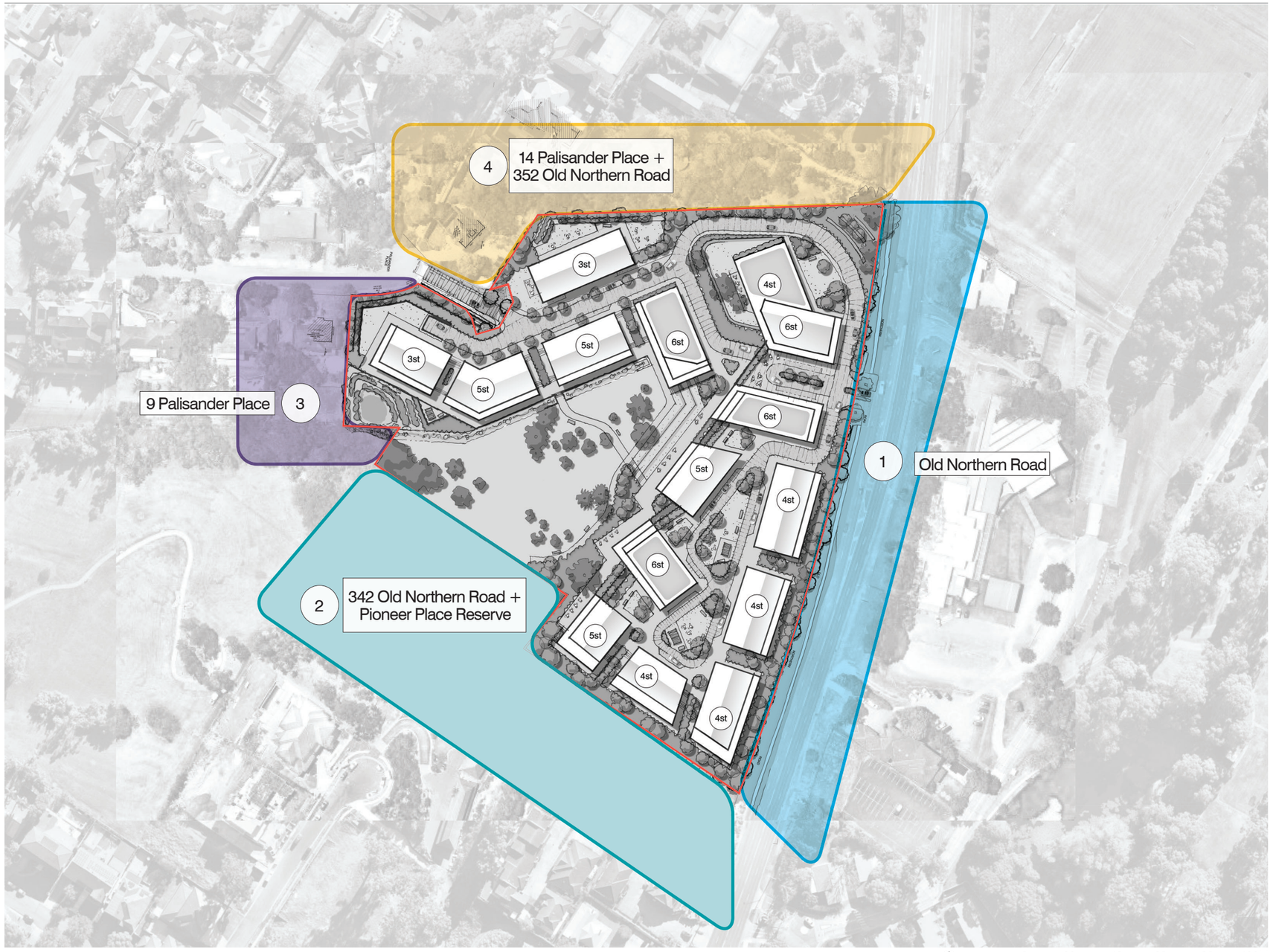
The following study has been developed to provide a more detailed examination of the various interfaces around the site and how the proposed built form envelopes for the site will sit within these varied contexts.

The approach adopted is that all buildings at the boundary should have a height limit of 9m to keep with the local character and surrounding height limits.

The perimeter of the site has been divided into four distinct areas which are examined more closely through sections

These areas are:

1. Old Northern Road
2. 342 Old Northern Road + Pioneer Place Reserve
3. 9 Palisander Place
4. 14 Palisander Place + 352 Old Northern Road



Legend

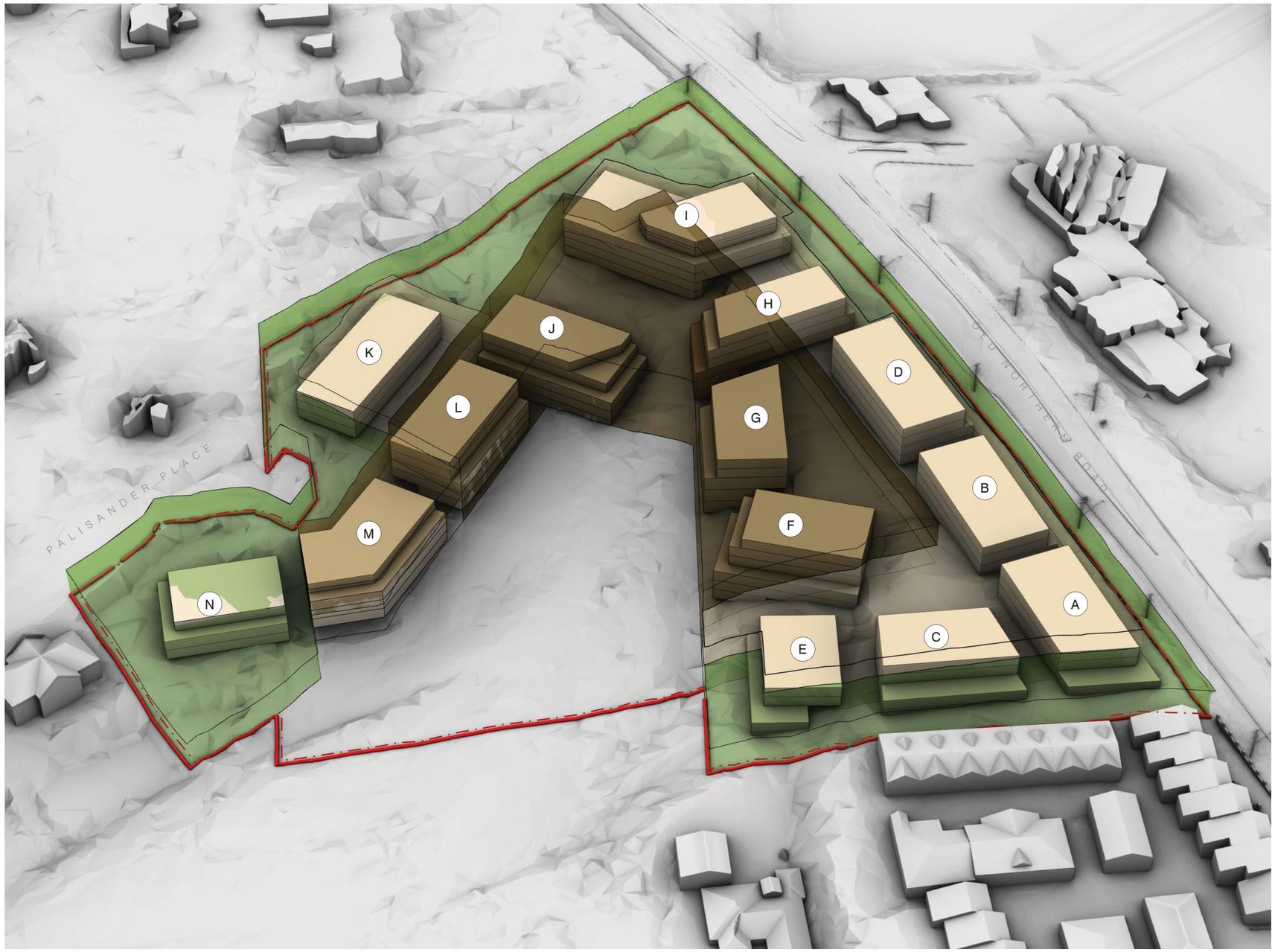
- Site boundary
- Old Northern Road
- 342 Old Northern Road + Pioneer Place Reserve
- 14 Palisander Place
- 9 Palisander Place + 352 Old Northern Road

3.2 Height plane analysis

The diagram opposite is a visualisation of the height planes which have been established by off setting the existing natural ground level.

Buildings located on or near the site boundaries (Old Northern Road and Palisander Place) are modest in scale and step down to 2-4 storeys to ensure the built form remains below a height of 9 metres (green) ensuring that the visual bulk and scale of buildings are minimised from adjacent houses and the public domain.

Care has been taken to ensure that the buildings on site are no greater than 6 storeys in height, with the tallest buildings located at the centre of the site directly facing the park.



Height Planes Offset from
Existing Natural Ground Level

- 0m
- 9m
- 15m
- 18m
- 22m

Interface analysis

9 Palisander Place

Existing context

This interface is characterised by a 2 storey dwelling at 9 Palisander Place. The Roof ridgeline of this building sits at an RL of 153.75.

Approach

By considering the topography and relative locations of houses at Palisander Place, the future buildings adjoining this interface are restricted to a height of 2-3 storeys. This reduces the visual impact of the proposed development when viewed from the street.

The 2 storey element sits below the existing buildings on site with a greater setback resulting in greater separation and a lower visual impact to the neighbour

The majority of this 3 storey building sits within a 9m height limit, which is consistent with adjoining residential developments, and helps to maintain the local character of the area.

Specific building setbacks from property boundaries provide additional separation to ensure the amenity and privacy of residents and allow for the retention of existing vegetation.

View looking south from Palisander Place at the interface of the site with 9 Palisander Place


Key plan

Building separation

Minimum separation of 18m between neighbouring development and proposal mitigates visual impact

Building Setback

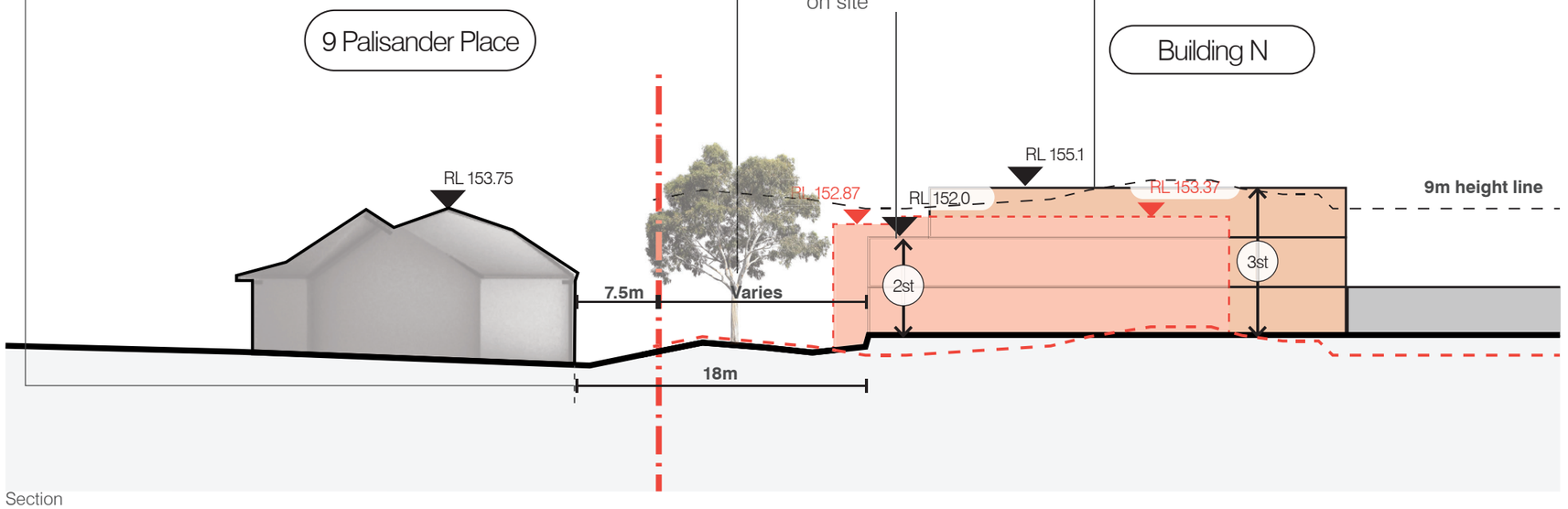
Proposed building side setback varies however at a minimum is 10m which allows for retention of existing mature trees as well as additional landscaping to mitigate visual impact

Interface height

2 storeys at the interface sits 1.75m below the neighbouring development and approximately 1m below the existing building on site

Building height

Future building of 3 storeys is less than 1.5m higher than height of existing residential dwelling at 9 Palisander Place.



Section

342 Old Northern Road

Existing context

This interface is characterised by a Town House development at 342 Old Northern Road, which sit higher than many of the existing dwellings on site as evidenced by the retaining wall structure. The rear yards of the town houses face the boundary.

The roof ridgeline of the row of town houses fronting Old Northern Road sit at an RL of 183.87 (almost a metre higher than the proposed) while the row of town houses fronting the site sit at an RL of 182.99.

The existing buildings on site sit 4m higher at the interface than the proposed built form with a setback of only approximately 5m from the boundary (the proposal has a 9m setback)

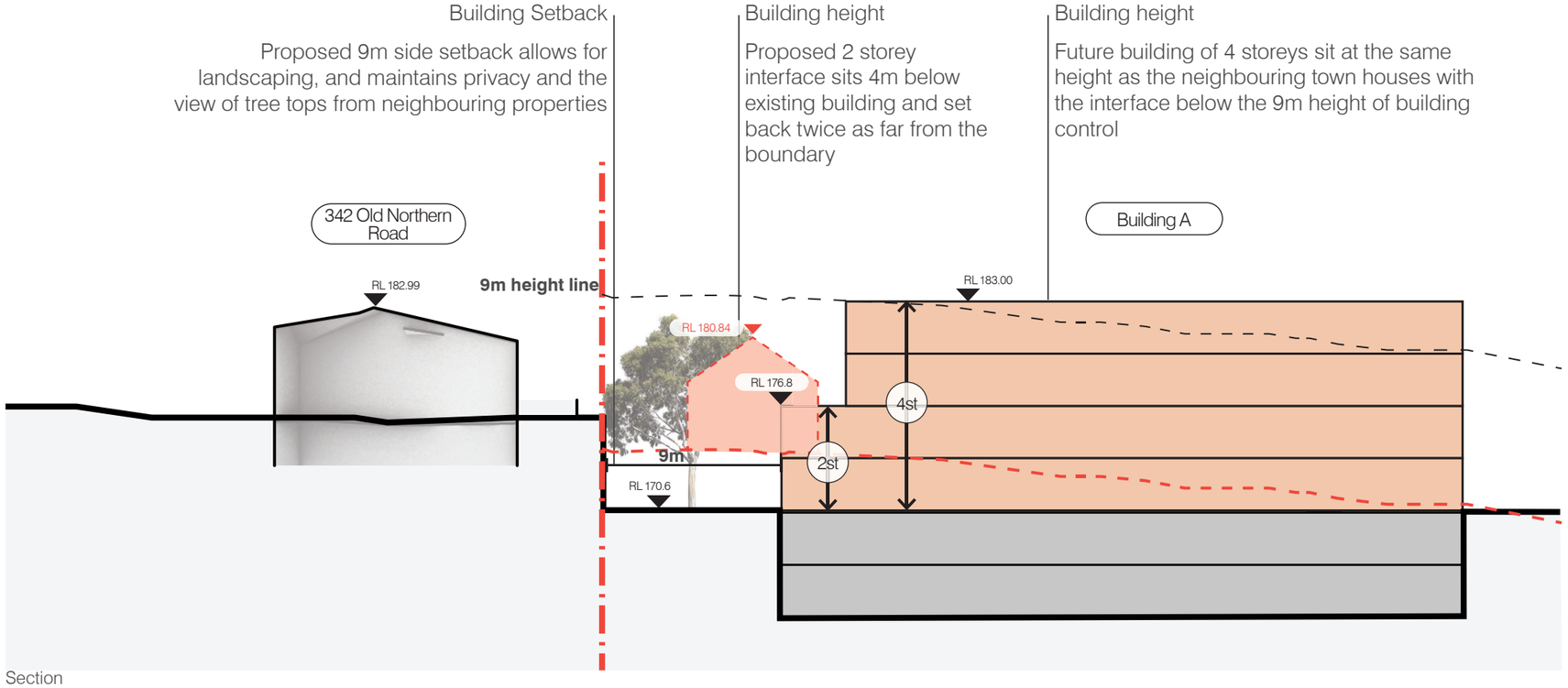
Approach

A 2 storey built form, setback 9m, interfaces with the boundary.

The drop in topography on the site allows for an envelope of 4 storeys in height to be positioned at the same height or lower than the neighbouring town houses while maintaining a consistent height to Old Northern Road and reducing the visual impact of the proposed development when viewed from the street.

View looking south from with the site towards backyards of 342 Old Northern Road

Key plan



Section

Interface analysis

Pioneer Place Reserve

Existing context

Pioneer Place Reserve, is a council-owned public park which interfaces the south western boundary of the site.

Approach

The majority of the interface is shared with the sites central open space. This common green landscape extends the view of the park beyond framing significant regional views west to the Blue Mountains, while maintaining great solar access to the park.

Where the park is interfaced with built form, a staggered building height and a significant setback will be provided to mitigate overshadowing impacts and allow for retention of mature trees.

View looking east from the site along boundary of Pioneer Park Reserve highlighting existing vegetation to be retained

Key plan

Section

Interface analysis

Old Northern Road (North)

Existing context

Located across Old Northern Road is St Paul's Anglican Church, Castle Hill. The topography drops and the height of St Paul's Church sits at RL 174.2.

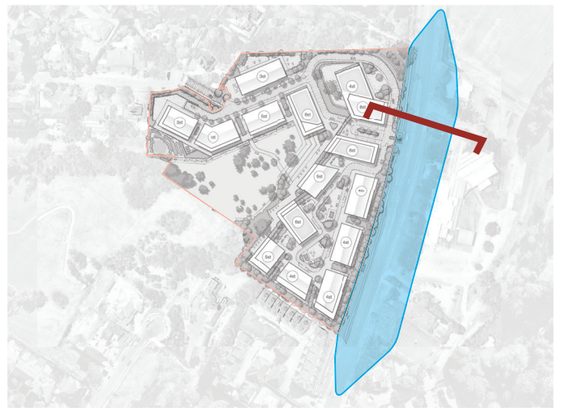
Approach

The 2-5 storey building along this interface maintains its 9m height control within 15m of the boundary, meaning building heights appear no greater than 3 storeys from Old Northern Road. This creates an appropriate transition to adjoining residential dwellings, as well as continues the existing character along the street.

The existing built form at its highest point sits approximately 1.5m above the proposed development at the boundary.

A significant setback of 12m from Old Northern Road ensures privacy and allows for deep soil/ landscaping, as well as retention of existing significant trees to screen the proposal and mitigate visual impact.

View looking south along Old Northern Road from North East corner of site


Key plan

Building height

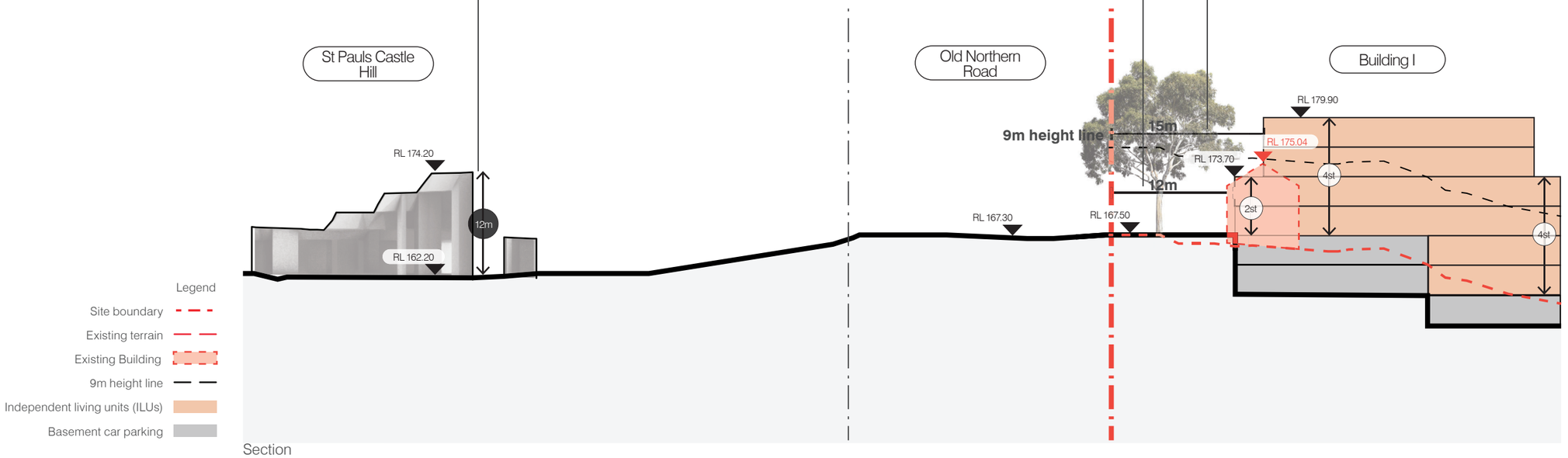
Future street wall heights are equal to that of St Pauls opposite and appear no higher than 3 storeys in total from Old Northern Road

Building setback

A 12m setback ensures privacy as well as a generous space for landscaping and retention of significant mature trees

Building height

Height limits of 9m apply within 15m of the boundary.



Section

Interface analysis

14 Palisander Place

Existing context

This interface is characterised by a 2 storey dwelling at 14 Palisander Place. The Roof ridge line of this building sits at an RL of 164.35.

Approach

By considering the topography, relative locations of houses within Palisander Place, and the current 9m height limit, the future buildings adjoining this interface are restricted to a height of 3 storeys. This reduces the visual impact of the proposed development when viewed from the street.

The built form has a greater setback than the existing built form resulting in greater separation and a lower visual impact to the neighbour.

The interface of this 3 storey building (building K) sits within the current 9m height limit which is consistent with adjoining residential developments, and helps to maintain the local character of the area. The topography drops towards the centre of the site which results in part of the envelope sitting above the 9m height.

Specific building setbacks from property boundaries provide additional separation to ensure the amenity and privacy of residents, and allow for future landscaping.

View looking east up Palisander Place highlighting existing vegetation along interface

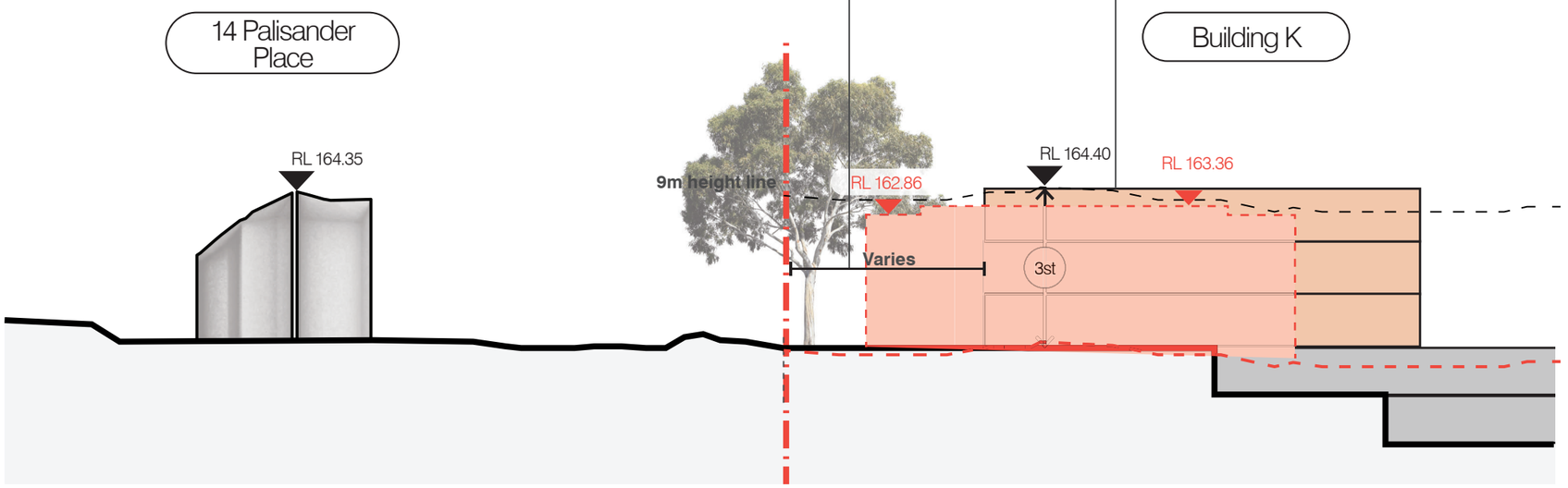
Key plan

Building Setback

Proposed building side setback varies however at a minimum is 9m which allows for retention of existing mature trees as well as additional landscaping to mitigate visual impact

Building height

Future building of 3 storeys is less than 0.1m higher than height of existing residential dwelling at 14 Palisander Place.



352 Old Northern Road

Existing context

This interface is characterised by a large landscaped setback and a 1 storey dwelling at 352 Old Northern Road. There is a significant rise in topography to the north of the site which means the neighbours sit significantly higher than the proposed development.

Approach

The building works with the topography of the site, with the 5 storey building appearing as a 4 storey building at the boundary. The setbacks to both boundaries (Old Northern Road and 352 Old Northern Road) allow for the retention of several significant trees on site, which will help screen the building.

The significant rise in topography allows a future 4-5 storey building to sit 3m lower than the neighbouring single storey dwelling.

Key plan

Building height

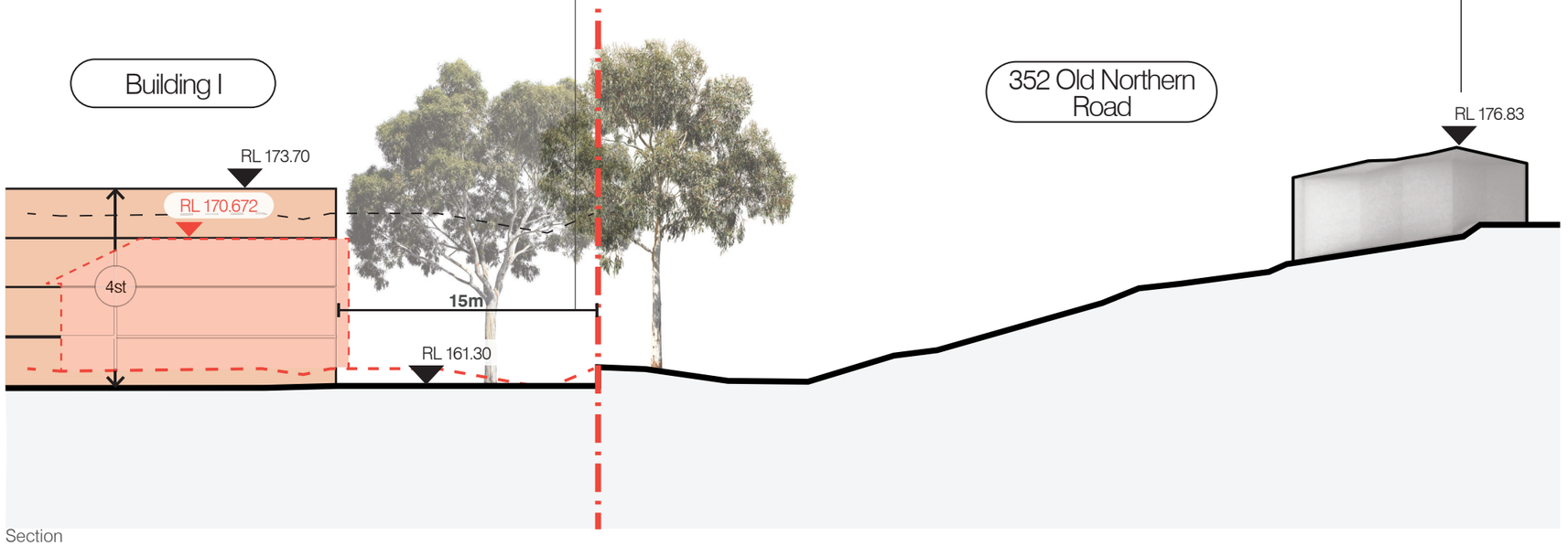
A 4 storey interface to Old Northern Road, transitioning to 5 storeys in the centre of the site. The relative height is 3m lower than the adjacent building at 352 Old Northern Road

Building Setback

Proposed minimum side setback of 15m side allows for retention of existing mature trees along boundary

Building height

Built form at boundary sits approximately 1.5m above 9m height limit however does not exceed heights of adjacent development



Section

04 Assessment

Assessment

Any new residential flat buildings proposed on the site will be subject to the requirements of State Environmental Planning Policy No. 65 (SEPP 65), which sets out ten urban design criteria for new residential flat buildings.

The Apartment Design Guideline (ADG) is the supporting document to this policy which provides clear guidelines for best practice urban design in the development of new apartment buildings. The ADG is divided into three sections:

1. Local Context;
2. Site Design; and
3. Building Design.

The key guidelines of each section, which inform the early stages of a residential development are described in the following pages.

Part 01: Local Context

Building Depth
As a rule of thumb, residential flat buildings should be between 10-18 metres internally from glazing line to glazing line. This ensures that satisfactory day lighting and natural ventilation can be achieved.

Building depths beyond 18m may be able to be achieved where appropriate access to light and ventilation can be demonstrated, for example in a corner location.

Building Separation
Building separation is an important factor in achieving high quality amenity. These controls vary depending on the overall height of the buildings in question. The separation dimensions are measured from the outer most edge of the building i.e. from the balcony edge or the building wall.

Buildings to 12 metres in height (4 storeys)
– 12 metres between habitable rooms/balconies
– 9 metres between habitable rooms/balconies and non-habitable rooms
– 6 metres between non-habitable rooms

Buildings to 25 metres in height (5 - 8 storeys)
– 18 metres between habitable rooms/balconies
– 12 metres between habitable rooms/balconies and non-habitable rooms
– 9 metres between non-habitable rooms

Buildings over 25 metres in height (9 storeys and over)
– 24 metres between habitable rooms/balconies
– 18 metres between habitable rooms/balconies and non-habitable rooms
– 12 metres between non-habitable rooms

Front Setbacks
Front setbacks are determined by the predominant building line established by the street. In denser local centres with non-residential uses at ground level, the setback is generally zero and built to the street edge.

Side and Rear Setbacks
These setbacks are determined by taking into account surrounding context and building relationships so as to respond to streetscape, sunlight, ventilation and privacy issues. These setbacks also help in achieving deep soil zones/site coverage rations, which are usually required under councils landscaping controls.

Part 02: Site Design

Deep Soil Zones
These allow for the natural penetration of stormwater into the ground and the provision of substantial landscaping. A minimum of 25% of the open space area should be a deep soil zone.

Open Space
The inclusion of appropriate communal open space in residential developments. The area of common open space should generally be at least between 25-30% of the site area.

The minimum area of private open space for each apartment at ground level is 25 m^2, with the minimum dimension in one direction being 4 metres.

Landscape Design
To contribute to the overall amenity of residential developments particularly in regards to privacy, outlook and views. Landscape also greatly contributes to the ecological sustainability of our city's flora, fauna, air and water quality.

Fences and Walls
To allow for the appropriate definition between public and private spaces which encourage a comfortable and humane pedestrian environment. This is particularly important from a safety and security perspective.

Orientation
The optimisation of solar access to residential apartments and open space

Visual Privacy
Visual privacy within a new development protects residents ability to carry out private functions within all rooms and private spaces without compromising views, outlook, ventilation and solar outlook.
Visual privacy relates not only to the dwellings within the new development, but also those existing dwellings surrounding the site.

Building Entry
The building entry should provide a clear identifiable entry point for the development. It should facilitate easy orientation for the visitor and contribute positively to the streetscape and overall building design.

Parking
The parking strategy for the development should take into account the site's proximity to public transport and minimise car dependency where possible.

The development should provide adequate car parking for the building's users and visitors, and should integrate the location and design of parking into the design of the site and the building.

The impact of on-grade car parking should be minimised, and preference to underground parking where possible. Design considerations should ensure that this does not impact the potential for deep soil zones and allows for safe and clear access to building entries.

Vehicle Access
The width of driveways should be limited to a maximum of 6 metres. Vehicle entries should be located away from main pedestrian entries and on secondary frontages.

Part 03: Building Design

Apartment Sizes
Apartment sizes are generally determined via a variety of factors including geographic location and market demands.

The Apartment Design Guideline has a number of 'rule of thumb' dimensions and internal areas, including;
- Single aspect apartments should be not greater than 8 metres in depth (from a window).
- The back of a kitchen should be no more than 8 metres from a window.
- The width of through apartments over 15 metres from glazing line to glazing line should be greater than 4 metres in width.

Minimum apartment sizes are approximately:
- 1 bed apartment: 50m^2
- 2 bed apartment: 70m^2
- 3 bed apartment: 95m^2

Apartment mix
Developments should incorporate a variety of apartment types to encourage cultural and social diversity. Councils often have desired mix targets.

Balconies
Balconies and private open space should be designed as 'outdoor rooms' to contribute usable spaces that enhance the overall amenity of the living environment. The primary balcony is a natural extension of the primary living space.

Balconies should aim to be a **minimum of 2.4 metres** in depth to allow for outdoor dining, with an minimum of 2 metres in depth.

Minimum balcony sizes based on apartment area are given as follows:
- 1 bed apartment: 6-10m^2
- 2 bed apartment: 11-33m^2
- 3 bed apartment: 24m^2

Ceiling Heights
Minimum ceiling heights measured from Finished Floor Level (FFL) to Finished Ceiling Level (FCL) are as follows:
- Mixed use buildings
  - Ground floor retail/commercial and for first floor residential/ retail/commercial so as to provide future flexibility 3.3 metres FFL to FCL.
- Residential Flat Buildings
  - 3.3 metres FFL to FCL for ground level in a mixed use area
  - 2.7 metres FFL to FCL for all habitable rooms
  - 2.4 metres FFL to FCL for all non-habitable rooms (2.25 is permitted)

As a rule of thumb this would require at a minimum:
- 4 metre floor to floor for ground level (4.2m desirable)
- 3 metre floor to floor for upper levels at a minimum. (3.2m desirable)

Storage
Some Councils have their own minimum requirements for separate private storage areas, the ADG suggests the following rules of thumb:
- Studio apartments: 6m^3
- 1 bed apartments: 6m^3
- 2 bed apartments: 8m^3
- 3+ bed apartments: 10 m^3

Daylight Access
- A maximum of 10% of the apartments are to be single aspect and south-facing.
- 70% of apartments in a development should receive a minimum of three hours direct sunlight between 9am and 3pm in mid-winter (may be varied to 2 hours in dense urban areas).

Natural Ventilation
- Building depths should be between 10-18 metres
- 60% of residential units should be naturally cross ventilated
- 25% of kitchens in a development should have access to natural ventilation

4.1 Building separation

The master plan sets out 14 medium rise building envelopes which range from 3 to 6 storeys in height. The envelopes are positioned around a central open space which work with the topographic features of the site, to ensure impacts on neighbours are minimised.

Building envelopes A to I are located at the top of the site adjacent to Old Northern Road. Envelopes E,F,G and H are terraced into the side of the hill to minimise the bulk and scale of the buildings, and feature basement car parking.

By contrast, building envelopes J to N are located on the lower portion of the site, with building heights ranging from 3-6 storeys next to Palisander Place.

The ADG encourages building separation of 12 metres for buildings up to four storeys and 18 metres for buildings up to six storeys in height. This requirement is met or exceeded by the layouts indicated in the master plan.

The built form will be further developed as part of the detailed design to ensure that visual privacy and solar access requirements are met.

The indicative concept plan supports a built form that can accommodate a diverse mix of apartment types. Preliminary testing of the built form has demonstrated that with the reduction in building length the proposed envelopes are capable of exceeding the 65% natural ventilation requirement of SEPP 65 in line with the ADG. It is considered that with further detailed design development, other natural ventilation methods may be introduced to improve performance.

Legend

Site boundary

Setback distance

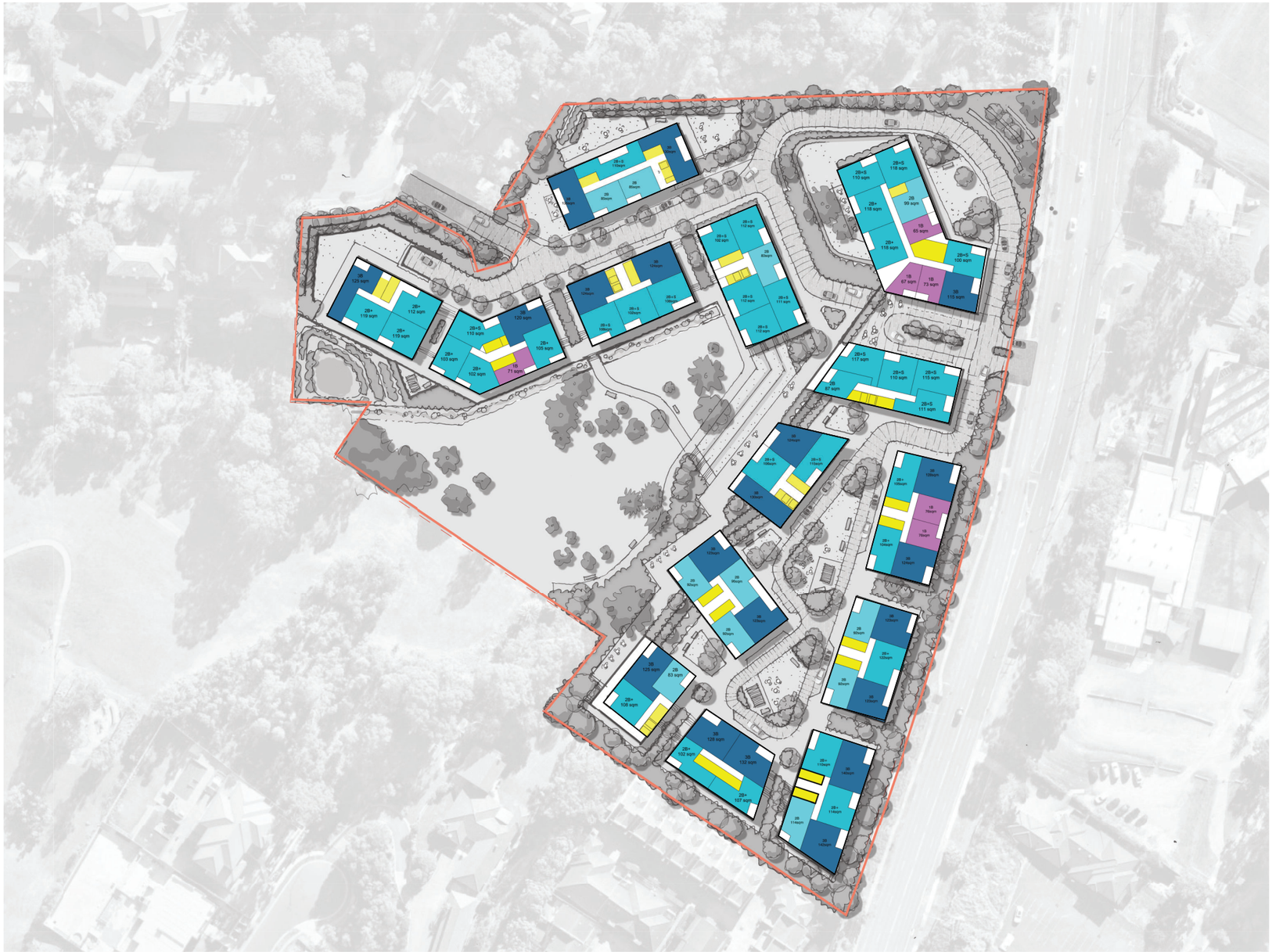
4.2 Typical floor plan

The plan opposite provides an illustration of how the envelopes in the master plan could be developed to demonstrate compliance with ADG requirements. The test fit of these envelopes include:

- Apartments that are oriented in a primarily east-west direction to increase the environmental performance of each apartment as well as maximise views.
- A typical floor plan which accommodates a range of apartment types including large apartments (average apartment size of 110 sqm) and over 20% 3 bedroom apartments.
- Smaller building footprints ensure cross-ventilation which exceeds the required 60% in the ADG.

Apartment numbers

Building	1 bedroom	2 bedroom	2 bedroom + study	3 bedroom	TOTAL
A	1	6	6	6	19
B	-	4	6	8	18
C	-	5	5	6	16
D	6	-	8	8	22
E	-	8	3	4	15
F	-	7	10	5	22
G	2	-	14	2	18
H	2	5	7	-	14
I	11	7	19	2	39
J	-	10	15	1	26
K	-	6	3	6	15
L	-	10	9	4	23
M	5	-	13	3	21
N	1	2	7	1	11
TOTAL	28	70	125	56	279
TOTAL %	10%	25%	45%	20%	



4.3 Yield summary

Summary	
Site area	37,176m²
GFA	30,754
FSR	0.83:1

TOTAL GFA = **30,795**

GFA by building

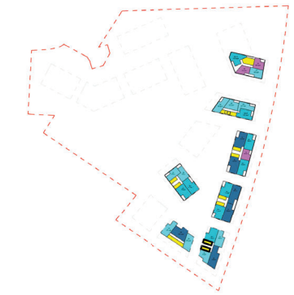
Building	Resi GFA (m2)	Non resi GFA (m2)	TOTAL
A	2,184	34	2,218
B	2,016	21	2,037
C	1,710	77	1,786
D	2,215	21	2,236
E	1,457	77	1,534
F	2,383	34	2,417
G	1,860	17	1,877
H	1,323	1,398	2,722
I	3,913	34	3,947
J	2,819	17	2,836
K	1,587	21	1,609
L	2,364	21	2,385
M	2,039	21	2,060
N	1,117	13	1,130
TOTAL	28,987	1,806	30,794

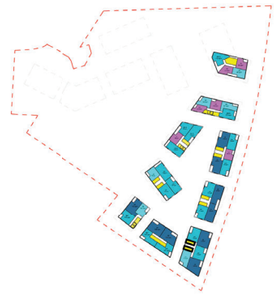
GFA assumptions

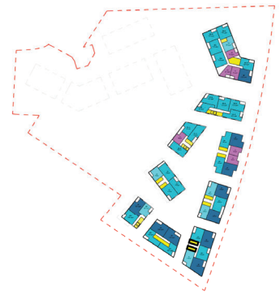
GBA and GFA have been calculated from typical floor plans and include a number of assumptions:
- GFA = 75% of built form envelope
- GFA excludes external walls, basement parking and all vertical circulation, lifts and stairs, as well as balconies
- External wall thickness = 300mm
- Balcony sizes ADG compliant

Legend
- 1 bedroom
- 2 bedroom
- 2bedroom + study
- 3 bedroom
- Communal facilities
- Basement parking


Level 4 (RL 179.9)

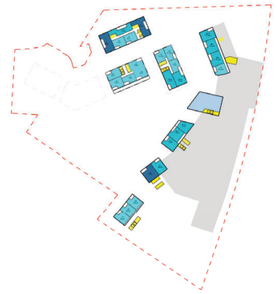

Level 3 (RL 176.8)


Level 2 (RL 173.7)


Level 1 (RL 170.6)


Old Northern Road Level 0 (RL 167.5)


Level -1 (RL 164.4)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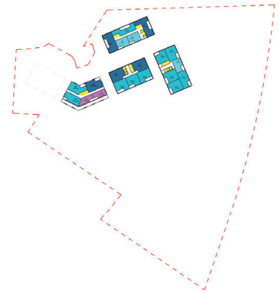
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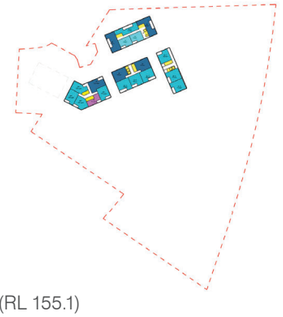
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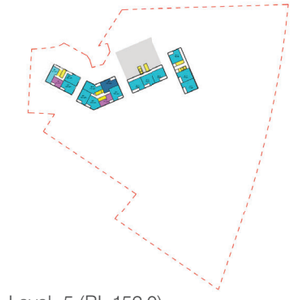
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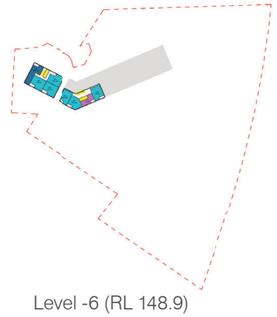
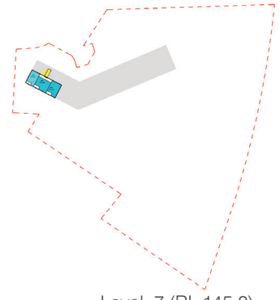

Level -6 (RL 148.9)

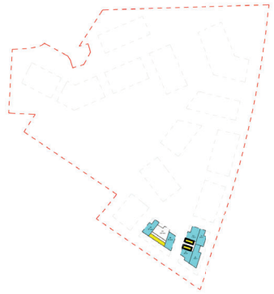

Level -7 (RL 145.8)

4.4 Cross ventilation

The reduction in building length and footprint ensure the revised scheme achieves and exceed natural ventilation requirements required under the ADG at the individual building scale and as an aggregation of apartments across the site. The compliance is made possible through the use of cross and corner ventilating apartments.

65% OF APARTMENTS CAN BE NATURALLY VENTILATED

Total no. Compliant Apartments	Total no. Apartments	Compliant %	Compliant Yes / No
209	279	75	Yes



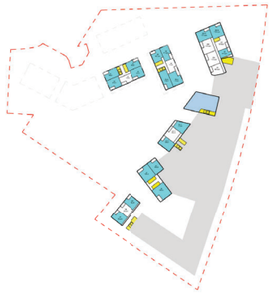
Level 4 (RL 179.9)

Level 3 (RL 176.8)

Level 2 (RL 173.7)

Level 1 (RL 170.6)

Old Northern Road Level 0 (RL 167.5)



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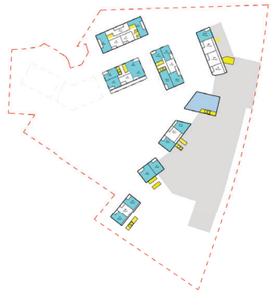
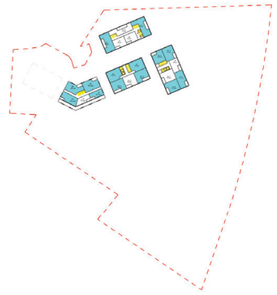


Level -2 (RL 163.3)



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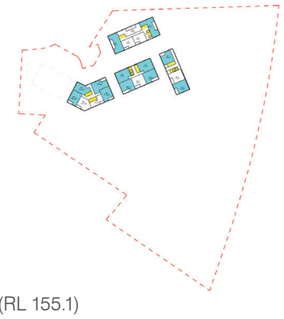
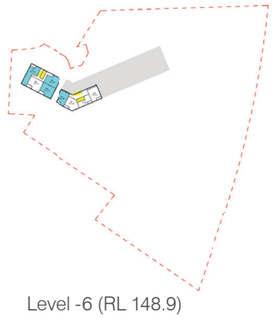
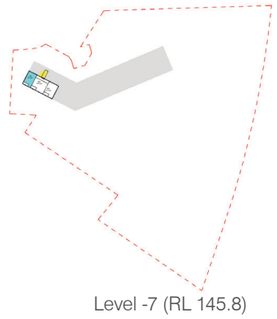


Level -4 (RL 155.1)

Level -5 (RL 152.0)



Level -6 (RL 148.9)



Level -7 (RL 145.8)

Legend

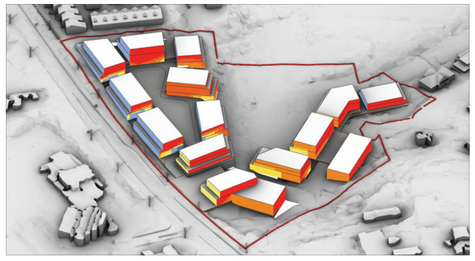
Apartments capable of cross-ventilation

4.5 Solar access

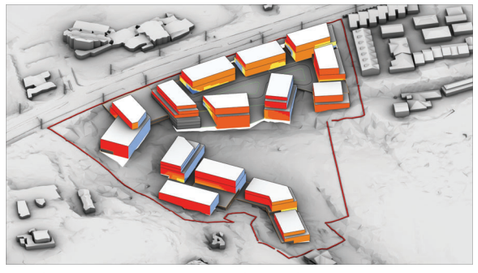
The floor plans opposite illustrate the number of apartments which are capable achieving the minimum 2 hours of sunlight between 9am and 3pm as required under the ADG. These results have been derived from the heat map study of the building envelopes which identify which sections of the envelope are exposed to 2 hours or more of sunlight during the winter solstice between 9am - 3pm.

78% OF APARTMENTS ACHIEVE MINIMUM SOLAR ACCESS

Total no. Compliant Apartments	Total no. Apartments	Compliant %	Compliant Yes / No
228	279	82	Yes



Heat mapping analysis - north east view

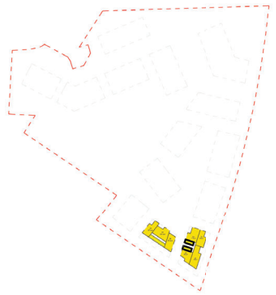


Heat mapping analysis - north west view

Legend

> 2hours direct sunlight

< 2hours direct sunlight



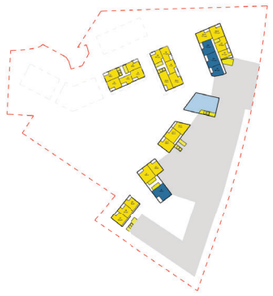
Level 4 (RL 179.9)

Level 3 (RL 176.8)

Level 2 (RL 173.7)

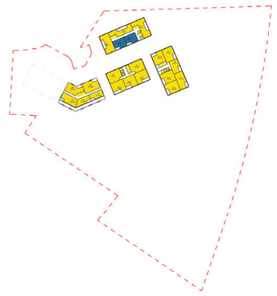
Level 1 (RL 170.6)

Old Northern Road Level 0 (RL 167.5)

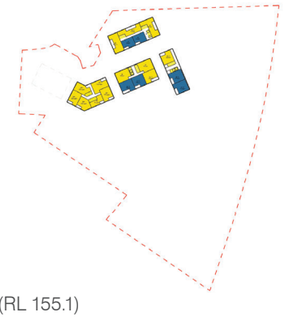


Level -1 (RL 164.4)

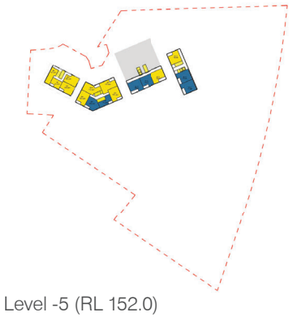
Level -2 (RL 163.3)



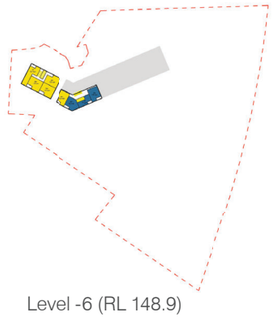
Level -3 (RL 158.2)



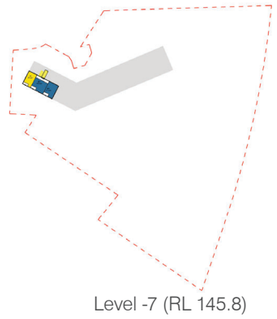
Level -4 (RL 155.1)



Level -5 (RL 152.0)



Level -6 (RL 148.9)



Level -7 (RL 145.8)

4.6 Landscaped area

A concept landscape plan for the site has been prepared to support the Planning Proposal. The plan is only indicative but demonstrates that open space on the site could be developed to address the requirements of residents.

Landscaped area means any part of a site at ground level that is permeable and consists of soft landscaping, turf or planted areas and the like, pervious paved areas and includes building setbacks.

The development site is situated in a ridge and features significant parkland and open space with district views. The proposed concept landscape master plan will retain most of the existing parkland on the site. The provision of new common courtyard spaces between buildings will feature soft landscaping and tree planting. The new and retained open space include approximately **1.9 hectares** (53% of total site area) of communal open space and landscaped area.

4.7 Overshadowing to open space

Overshadowing studies have been prepared to understand the overall impact of the master plan built form on the urban context including surrounding buildings and open space. Shadows were assessed during the winter solstice (June 21st) between the hours of 9am and 3pm.

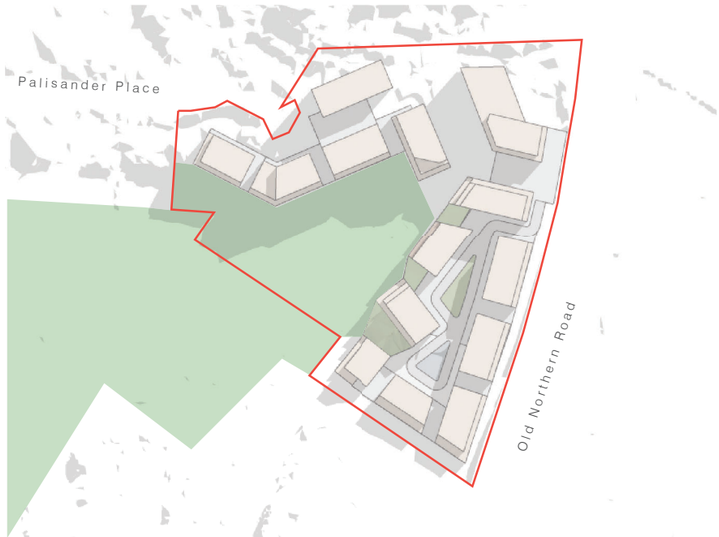
The studies indicate that during the winter solstice, buildings cast short but relatively slow moving shadows, but do not affect the surrounding residential houses to the west and south boundaries. Where minor impacts occur they are limited to short periods of the day during the winter months only.

The overshadowing impact on the major open space at the centre of the site has been considered, with buildings kept at a maximum of six storeys in height.

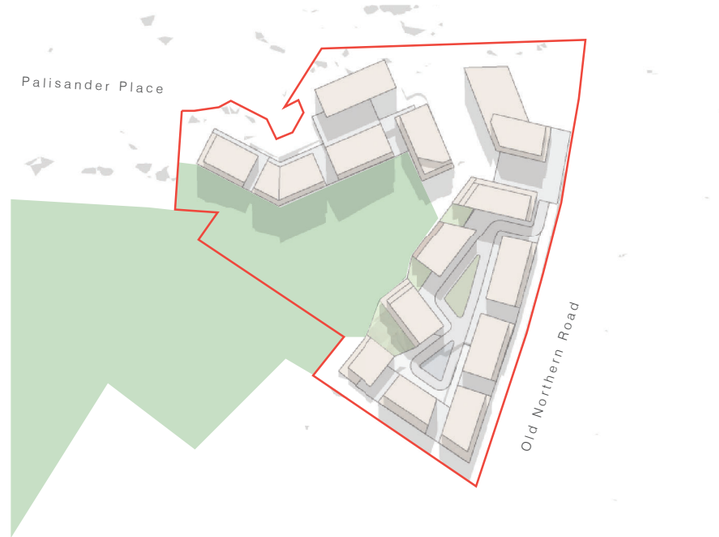
The following minimum targets for daylight access to the central open space for the winter solstice (June 21st) between the hours of 9am to 3pm:

- 40% of the central open space is not overshadowed at any time
- 60% of the central open space is not overshadowed by more than 2 hours

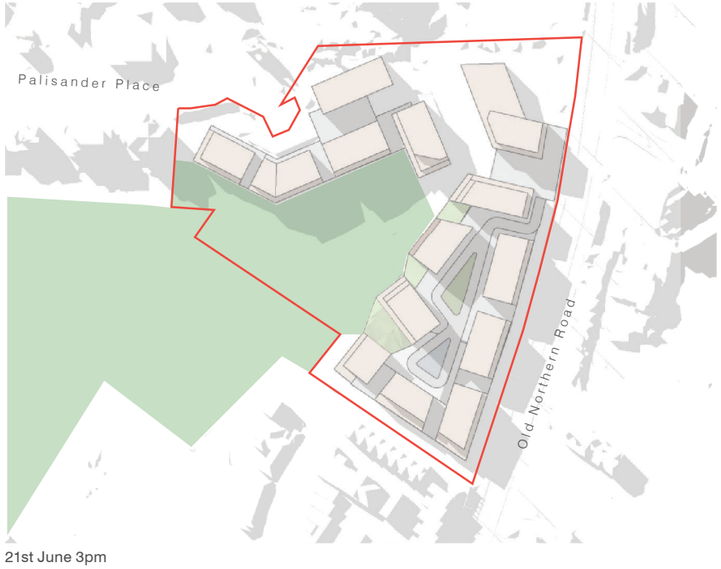
The proposed development would result in negligible overshadowing (20min) to Pioneer Place Reserve in midwinter. Any overshadowing is limited to the dense vegetation area between 9am and 9:20am and will not impact any usable areas of the park.



21st June 9am



21st June 12pm



21st June 3pm

4.8 Visual impact assessment

Architectus has considered the visual impact of the proposed built form on the surrounding area. Views have been selected from the public domain based on our topographic assessment of the local area and from where the site is most visible.

Assessment methodology

The views have been assessed in accordance with the following principles:

- Identify the scope of the existing views from the public domain
- Identify the locations in the public domain from which the interrupted view is enjoyed
- Identify the extent of the obstruction at each relevant location
- Identify the intensity of public use of those locations
- Review any document that identifies the importance of the view to be assessed.

The assessment has not included site visits to private properties, and therefore, does not document views from private properties.

Standards for photography

All individual photographs have been taken with a 35mm focal length lens format or equivalent.

This is the accepted standard of the New South Wales Land and Environment Court for approximating the normal human depth of field, so that the size of the image approximates the size of the object as seen by the eye from the same location.

Preparation of the masked outline overlays involved the following steps:

- Digital photographs were taken from each of the selected viewpoints in the direction of the proposed development;
- A computer generated 3D model of the proposed building was prepared;
- The 3D model was inserted into the photographs from the key vantage points using the same 35mm focal length and the precise RL of the location (plus 1.7m to represent eye height);
- A mask is placed over the location of the 3D model, illustrating its extent in the view.

Disclaimer:

All views are prepared with the information available and all effort has been made to accurately depict the proposal, the following are assumed information:

- RL points were extrapolated from a survey, not from surveyor's precise location of the photographs.
- LPI 2m contours used for the terrain for RL points of the photograph location.

Summary of View Impacts

The visual impact of the proposed built form on the surrounding area is considered moderate to negligible depending on the viewpoint and its topographical height.

Due to significant level changes and existing mature vegetation on and around the site, large parts of the proposed built form will be screened from view.

The largest view impact will be from Old Northern Road as buildings are situated in close proximity to the public domain. These buildings are limited to a maximum height of six storeys, however present to Old Northern Road as no more than 3.

The view locations are shown to the right.

Location 1 - View north from Old Northern Road

Description:

This view is taken looking north from Old Northern Road towards the subject site.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible due to the visual obstruction by mature vegetation and large setbacks within the site. Additionally, the setback of the upper storey creates a street height which aligns with neighbouring terraces.

Key Plan

Existing development

Proposed development

Location 1a - Entry to St. Luke's Church (Winter)

Description:

This view is taken from The entry to St. Luke's Church on Old Northern Road, opposite the north eastern corner of the site.

The photo was taken on the 26th of June, 2020.

Visual Impact Rating: Moderate

The visual impact of potential future development is considered to be moderate. While the envelope sits above the existing buildings it appears as a 2-3 storey mass at the boundary which fits within the local character. The built form is setback to allow for retention of mature vegetation and new planting which acts as a screen for the proposal

Key Plan


Existing development

Proposed development

Location 2 - View north west from St Paul's Church car park

Description

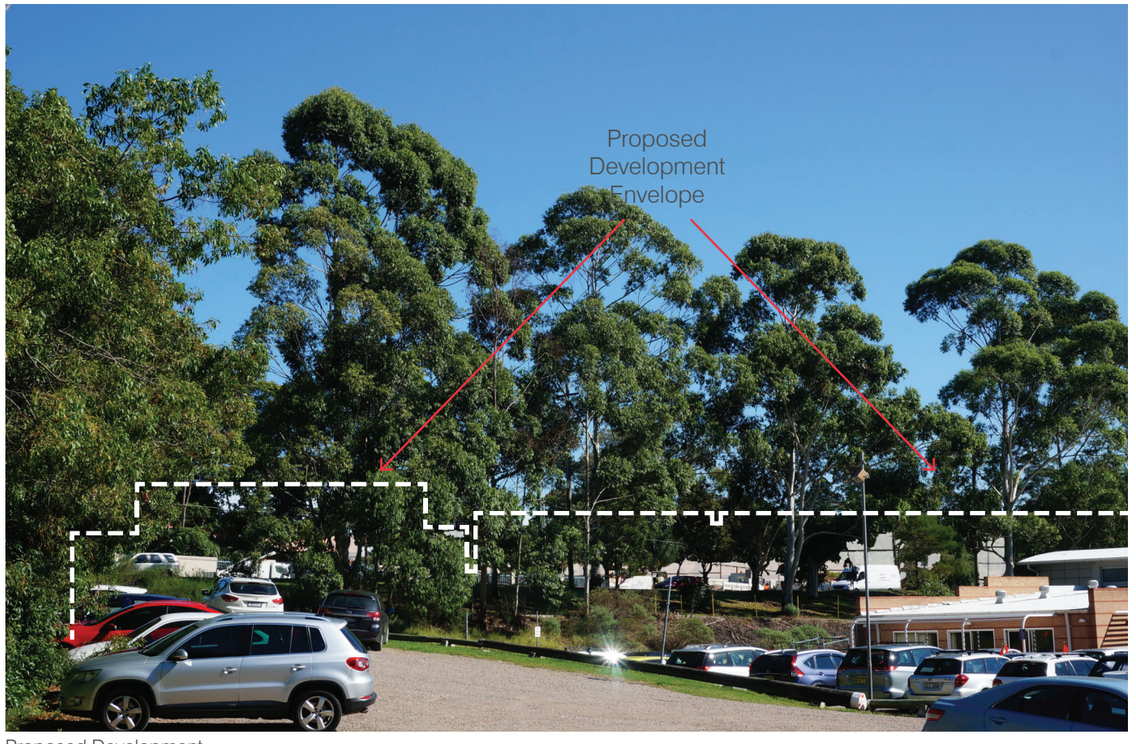
This view is looking north west from the St Paul's Anglican Church car park, opposite Castle Ridge Resort, south-east of the site.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible, as the majority of potential future development will be screened by mature vegetation, with limited filtered views of buildings.

Key Plan

Existing Development



Proposed Development

Location 3 - View south from in front of Oakhill College (Old Northern Road)

Description:

This view is taken from the road frontage of Oakhill College, situated north-east of the site.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible, as potential future development will be screened by mature vegetation, and the proposed development is setback from Old Northern Road.

Key Plan

Existing development

Proposed development

Location 4 - View west from First Farm Place

Description

This view is taken looking from First Farm Drive as it is a topographical low point which looks up towards the site.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible, as the majority of the development sits below the tree line, and will be screened by mature vegetation.

Key Plan

Existing development

Proposed development

Location 5 - View north east from Pioneer Place Reserve

Description

This view is taken looking north east from Pioneer Place Reserve, located directly adjacent to the site.

Visual Impact Rating: Low

The visual impact of potential future development is considered to be low, as the majority of potential future development will be screened by mature vegetation, with filtered views of the upper 1-2 storeys visible on some envelopes.

Key Plan

Existing development

Proposed development

Location 6 - View north east from Pioneer Place

Description:

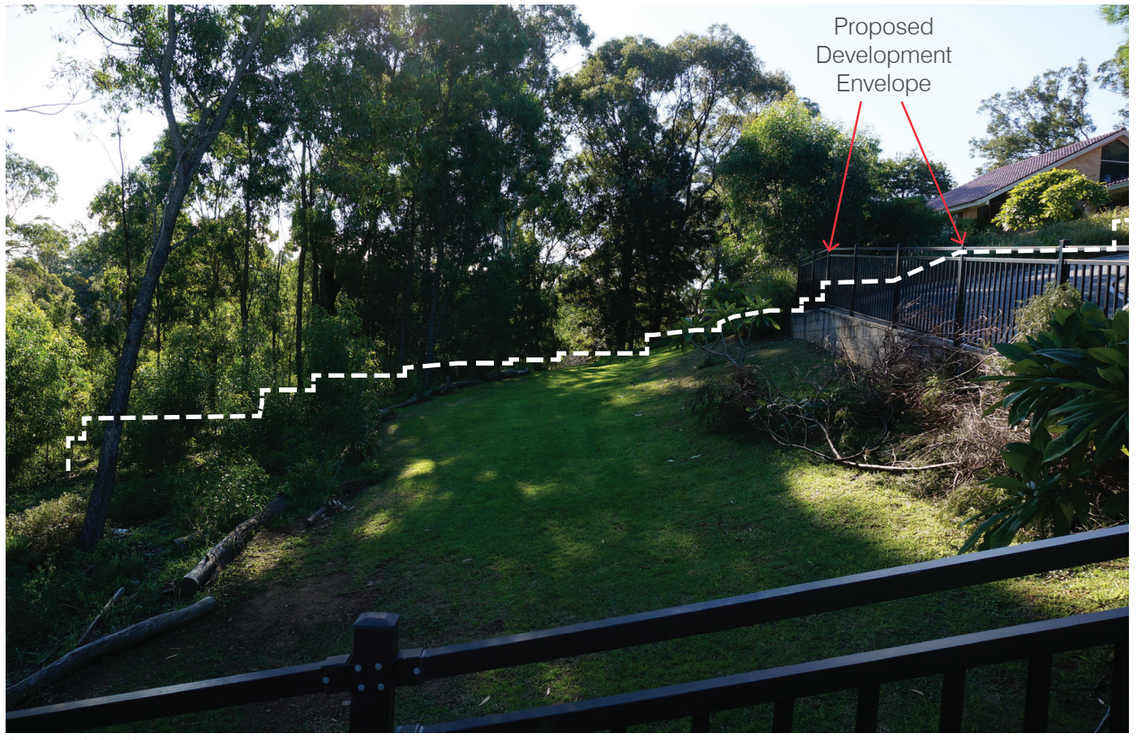
This view is taken from Pioneer Place, looking north-east towards the site.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible due to the topographical rise between the subject site and the viewpoint which screens large parts of proposed development.

Key Plan

Existing development



Proposed development

Location 7 - View north west from Old Northern Road:

Description:

This view is taken from Old Northern Road opposite the southern corner of the site boundary.

Visual Impact Rating: Low

The visual impact of potential future development is considered to be low. While the proposed envelopes are visible they are screened by the mature vegetation which the proposal aims to retain.

Key Plan

Existing development

Proposed development

Location 8 - View south west from Old Northern Road

Description:

This view is taken looking south from Old Northern Road opposite the northern corner of the site boundary.

Visual Impact Rating: Negligible

The visual impact of potential future development is considered to be negligible, as the development is set back from Old Northern Road, and mature vegetation between proposed development and the road screens the built form.

Key Plan

Existing development

Proposed development

Location 9 - View south-east from Palisander Place (Winter)

Description:

This view is taken from Palisander Place, which provides the western road entry into the Resort.

The photo was taken on the 24th of July, 2019.

Visual Impact Rating: Moderate

The visual impact of potential future development is considered to be moderate. The envelope impacts a small percentage of sky view however the greatest impact, building L (5 storeys) sits within the centre of the site. It follows the rise in the topography across the site and will be screened by new vegetation. Building N, which sits at the boundary is only 3 storeys in height, is set back from the site boundary, sits just above the existing built form and is screened by mature vegetation.

Key Plan

Existing development

Proposed development

Location 10 - View east from Palisander Place (Winter)

Description:

This view is taken from Palisander Place, which provides the western road entry into the Resort.

The photo was taken on the 24th of July, 2019.

Visual Impact Rating: Moderate

The visual impact of potential future development is considered to be moderate. The majority of the envelope is setback from the site boundary, and screened by mature vegetation. The built form appears predominately as 2-3 storeys which fits within the local character of the area.

Key Plan

Existing development

Proposed development

Location 11 - View south-west from Palisander Place (Winter)

Description:

This view is taken from the top of the cul-de-sac looking back along Palisander Place.

The photo was taken on the 26th of June, 2020.

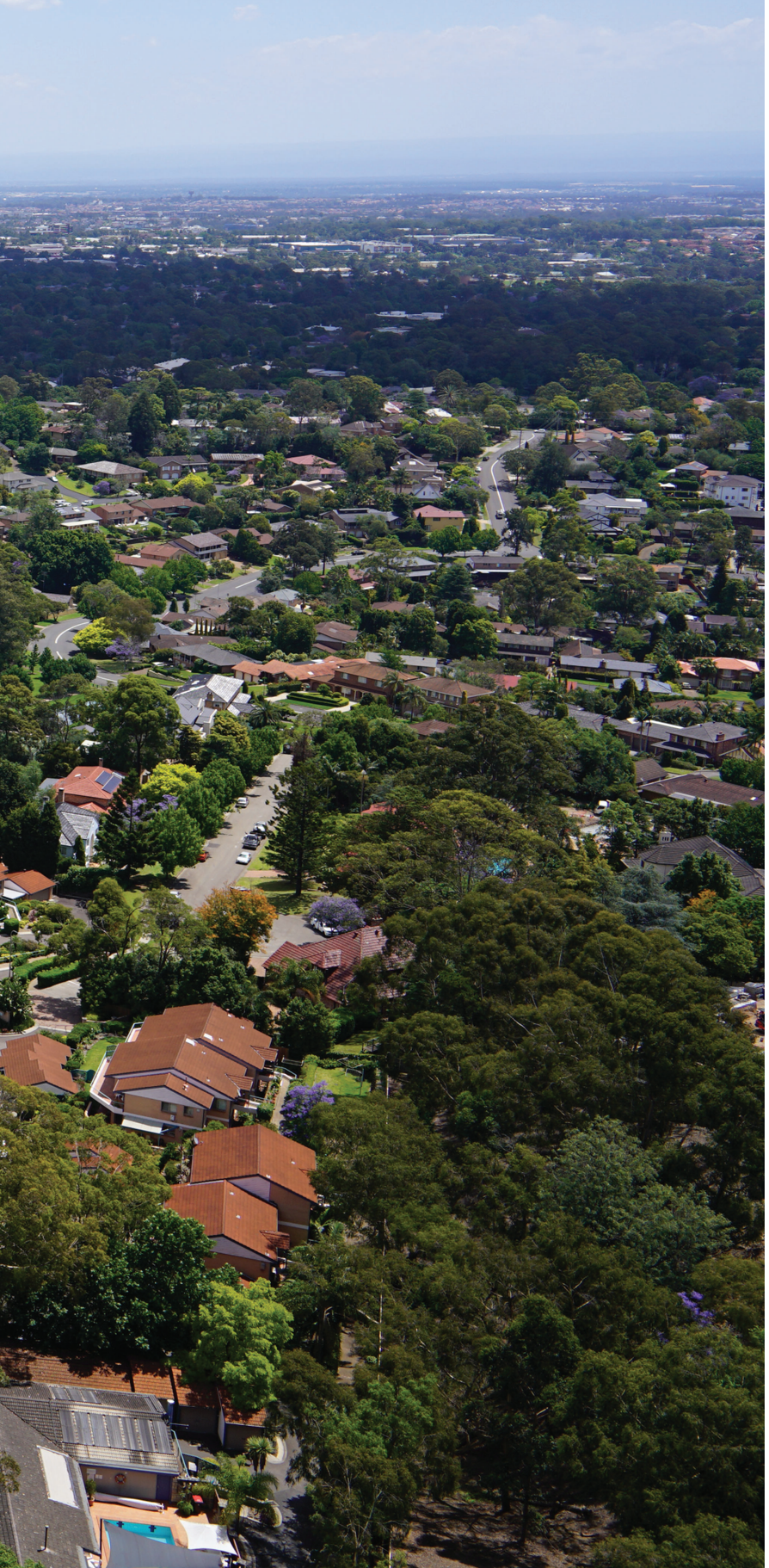
Visual Impact Rating: Low

The visual impact of potential future development is considered to be low. The proposed envelope sits approximately 1m above the existing built form. The envelope is set back from the site boundary, and screened by mature vegetation. The built form appears as a two storeys massing which fits within the local character of the area.

Key Plan

Existing development

Proposed development



05 Conclusion

5.1 Recommendations

Informed by the site analysis and the built form testing undertaken for the subject site at 350 Old Northern Road, Architectus recommends the following amendments to The Hills LEP 2019:

5.1.1 Land Use

The site is currently zoned E4 Environmental Living. Under this zone, senior housing is currently a prohibited use. The Seniors Living SEPP does not apply to the site, and therefore can not be relied on to ensure the permissibility of the proposed use.

The site is in a sensitive environmental location, and E4 zone is recommended to be retained. This will ensure the continued application of the E4 Zone objectives for future development. To allow for the proposed redevelopment of the existing seniors housing on site, it is recommended that “seniors housing“ be added as an additional permissible use, under Schedule 1 of The Hills LEP 2019. This will allow seniors housing only, and will not allow other forms of residential development at the site.

5.1.2 Maximum Building Heights

The master plan proposes building heights ranging from 3 to 6 storeys.

The proposed building heights ensure a site responsive built form strategy that responds to the site’s topography, provides an appropriate transition to adjoining development, minimises overshadowing and limits visual impacts.

To mitigate any potential impacts, the existing 9m height has been retained within 10m of the boundary across the site. Height has been concentrated in the centre of the site, away from adjoining properties.

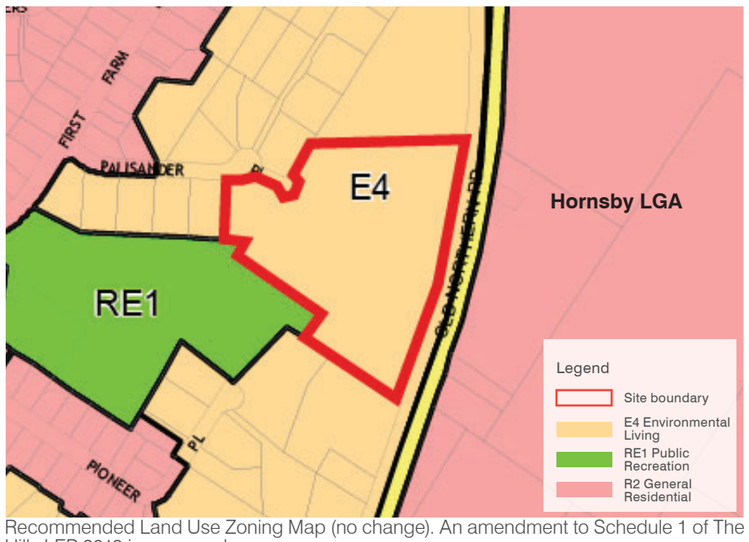
The proposal seeks to increase the maximum building height from 9 metres to a range of building heights between 9 and 22 metres. A 0m height limit would apply to the central open space.

Note: as stated in the Hills LEP
building height (or height of building) means—
(a) in relation to the height of a building in metres—the vertical distance from ground level (existing) to the highest point of the building, or
(b) in relation to the RL of a building—the vertical distance from the Australian Height Datum to the highest point of the building,
including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.

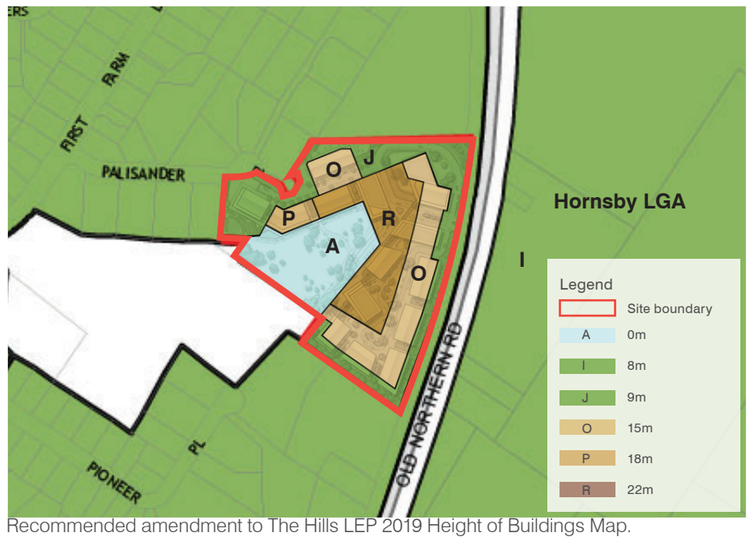
5.1.3 Floor Space Ratio

There is no maximum FSR control in the existing controls.

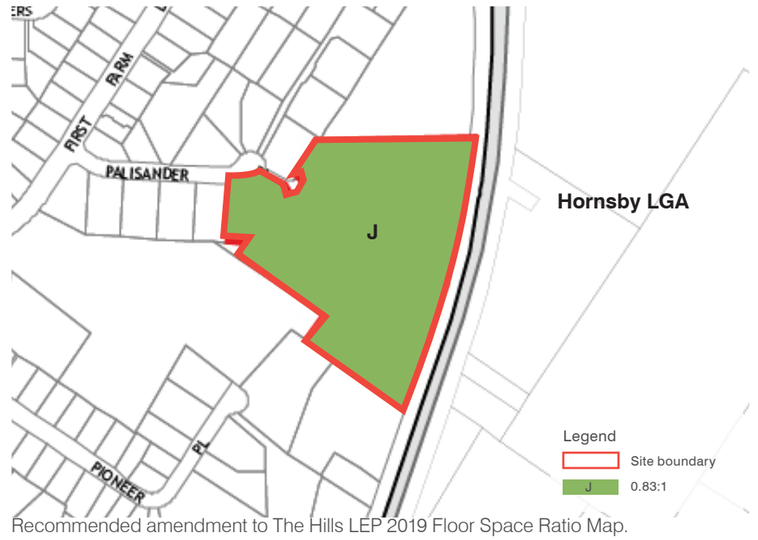
To ensure a good design and built form outcome for the site, a maximum floor space ratio of 0.83:1 is proposed for the site.



Recommended Land Use Zoning Map (no change). An amendment to Schedule 1 of The Hills LEP 2019 is proposed.



Recommended amendment to The Hills LEP 2019 Height of Buildings Map.



Recommended amendment to The Hills LEP 2019 Floor Space Ratio Map.

5.2 DCP controls

The draft DCP will be revised to translate the key features of the master plan outlined in this report. It will be prepared for inclusion as a chapter in The Hills Development Control Plan 2012 as a statutory document. The revised controls in the document will include the following:

- Height in storeys plan and illustrative master plan
- Building length
  - Maximum of 40m building length
- Street wall heights at specific boundaries
  - 2 storeys to sensitive interfaces and Old Northern Road
  - 3 storeys to central park
- Building setbacks
- Maximum site coverage / soft landscaping control
- Access points and preferred locations for servicing and loading
- Open space
- Specific controls for protecting views and the areas landscape character

Recommended heights in storeys map

Recommended street wall height

Recommended building setback map

A Response to gateway

Response to gateway

Gateway Condition

b. Provide additional testing and assessment of the following

i. The interface of buildings A, B, D, H and I and the relationship with Old Northern Road, with particular attention to demonstrating an appropriate setback to upper floors (above 2 storeys) to ensure the 2 storey 'street wall' is the predominant built form feature along Old Northern Road to maintain the character of the area.

Response

The interface of buildings A, B, D, H and I and their relationship with Old Northern Road (ONR) has been designed with consideration to:

1. The character of Old Northern Road
   - A major arterial road
   - A road reserve of approx. 30m
   - A speed limit of 60km/h
   - Up to 5 lanes of traffic adjacent to the site

2. Public domain and pedestrian experience
   - Pedestrian movement & views along ONR are focused on the western interface alongside the site as the eastern side, alongside St Pauls does not have a continuous sidewalk.
   - Predominately 4m of planting and turf sits between the site and the sidewalk. Proposed deceleration lane will reduce this at points.
   - Planting within the site will provide screening and shade for pedestrians.

3. Ground level setback
   - Greater ground level setbacks than existing, increase distance between pedestrians and the building envelope mitigating visual impact .
   - A minimum of 7.5m ground level setback along ONR.
   - Allows for some tree retention and additional tree planting increasing pedestrian amenity.
   - Ground level setbacks increase to 14m north of the entrance to allow for vehicular access.

4. Upper level setback
   - An upper level setback reinforces the desired 2 storey street frontage along ONR.
   - A setback of 3m allows for adequate balcony space including balustrades and planting, re-enforcing the 2 storey street wall.
   - From the public footpath the upper floors account for only approximately 30% of the visible built form.

Section location map

Section looking north along Old Northern Road

Response to gateway

A change in architectural expression, material selection and design elements, of set back upper levels help to reinforce the 2 storey street wall as the predominant built form feature from Old Northern Road.

Solid balustrades incorporating planter boxes, above the street wall, act as a parapet reinforcing the 2 storey aspect to the built form.

The following guidance could be included as a DCP control.

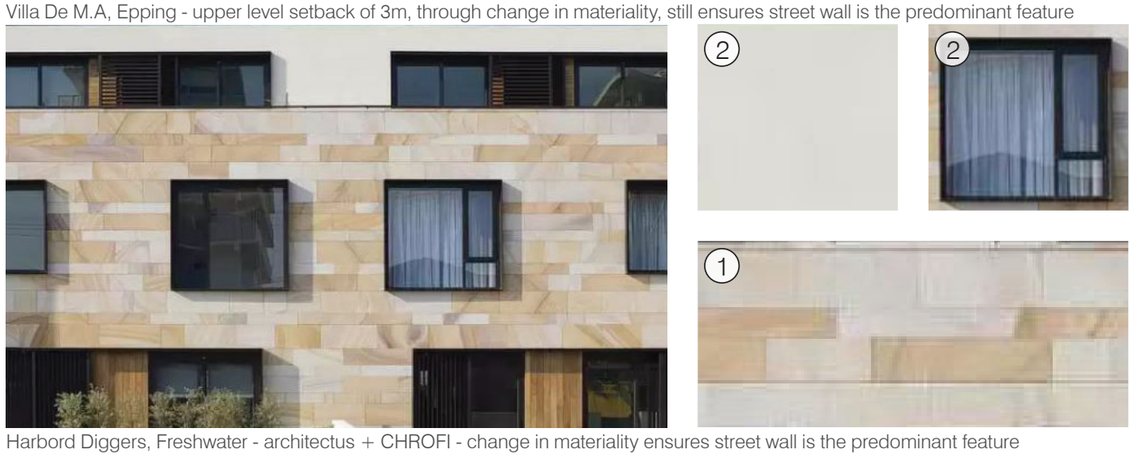
Proposed DCP objective:
- To maintain the character of the area by ensuring the 2 storey street wall is the predominant built form feature along Old Northern Road

Proposed DCP control:
- Setbacks above the street wall height are to be emphasised through a change in architectural expression, material selection and design elements.

Mezzo, Glebe - CHROFI - upper level setback reduces appearance of upper 3 storeys to 1 storey from the public domain

Villa De M.A, Epping - upper level setback of 3m, through change in materiality, still ensures street wall is the predominant feature

View looking south along Old Northern Road



Harbord Diggers, Freshwater - architectus + CHROFI - change in materiality ensures street wall is the predominant feature

Response to gateway

Gateway Condition

b. Provide additional testing and assessment of the following

ii. The interface of building E and the relationship with 51 Pioneer Place, with particular attention paid to the overall building height, the setback of upper floors (above 2 storeys), privacy, overshadowing and any mitigation measures to minimise impacts.

Response

Overall building height

- Overall building of 5 storeys sits approximately 1 storey above the 1-2 storey dwelling at 51 Pioneer Place. This difference in height is mitigated by the 14m setback from the boundary resulting in a building separation of approximately 37m at 2-4 storeys.

Upper level setback

- The 2 storey built form at the boundary is set back 9m which is 2.5m more than the existing.
- The 2 storey built form at the boundary sits 2m lower than the existing built form on site.
- An upper level setback, above the first 2 storeys, of 5m reduces overshadowing and mitigates any privacy issues.

Privacy

- 9m setback mitigates privacy impacts (DCP requirement of 6m).
- Tree retention and additional tree planting further mitigates any perceived impact.
- Desired ground floor RL mitigates overlooking at lower levels.
- Overlooking impacts are mitigated by an additional 5m upper level setback resulting in a 14m setback from the boundary.
- Built form orientation ensures predominant apartment aspect to the east and west over the park and communal space respectively, not south toward 51 Pioneer Place.

Overshadowing

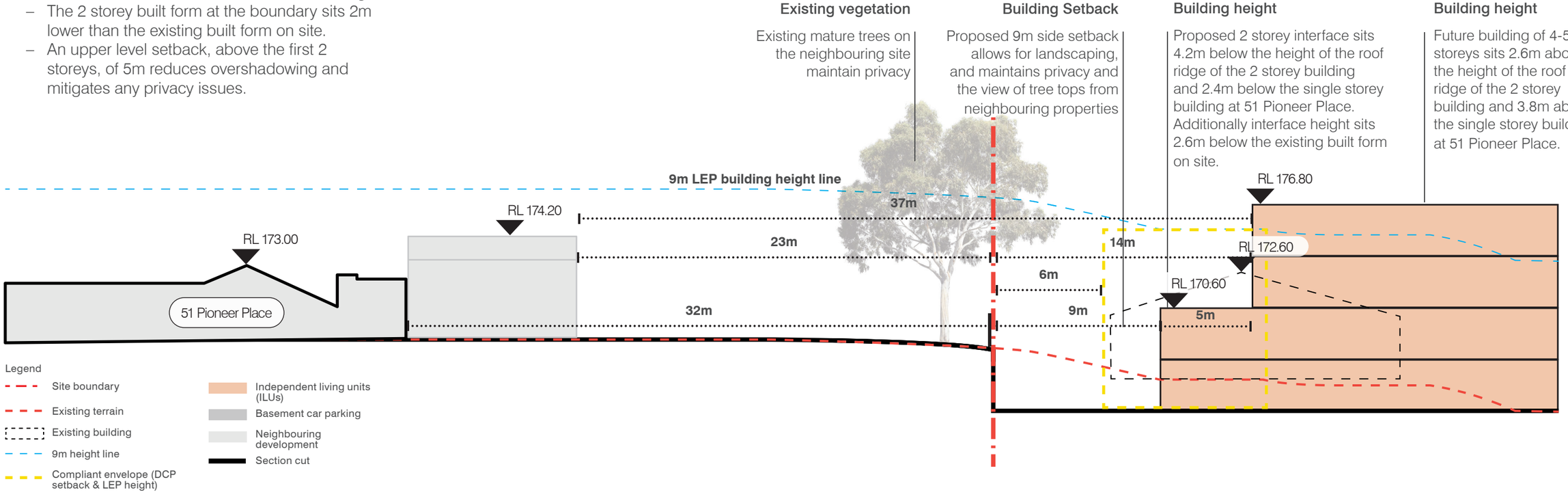
- 5m upper level setback ensures residents at 51 Pioneer Place receive no overshadowing, by the proposal, after 11am on the winter solstice and no overshadowing from 9am-3pm for approximately 8 months of the year.
- Overshadowing before 11am is minor with little impact to private open space and no impact to neighbouring development.

Mitigation measures

- 9m setback from southern boundary for landscaping, tree retention, additional tree planting and views across tree tops from neighbouring properties.
- 2 storey interface at boundary.
- Upper 2 storeys setback 5m.
- Ground floor RL. 164.4.

Note: refer to image on the following page depicting a view of the interface with 51 Pioneer Place.

Section location map



Artist impression highlighting existing vegetation at 51 Pioneer Place

Response to gateway

Gateway Condition

b. Provide additional testing and assessment of the following

iii. Demonstrate that the proposed building setbacks to floors above the second floor (buildings A, B, D, E, H and I) are fit for purpose to provide an improved scale and visual appearance, reducing human scale, privacy and other impacts.

Response

Improved scale
- Upper level setbacks reduce bulk and scale of building envelopes at the boundary
- Upper level setbacks ensure that building envelopes at the southern boundary sit below the height of the neighbouring development

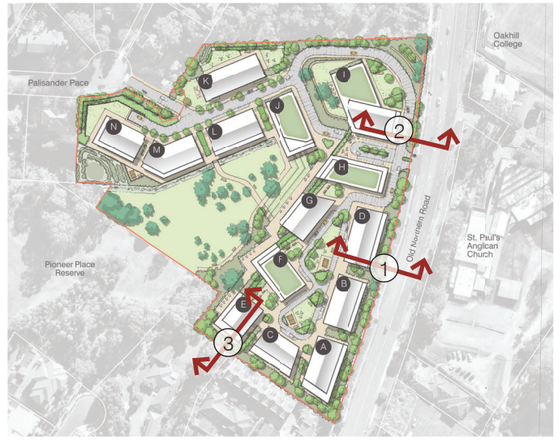
Visual appearance
- Upper level setback of 3m ensures the 2 storey street wall is the predominate feature stitching into the surrounding character along Old Northern Road

Human scale
- Upper level setback of 3m along Old Northern Road reduces overall building height when viewed from the public domain
- From the public footpath, along Old Northern Road, the upper floors account for only approximately 30% of the visible built form.

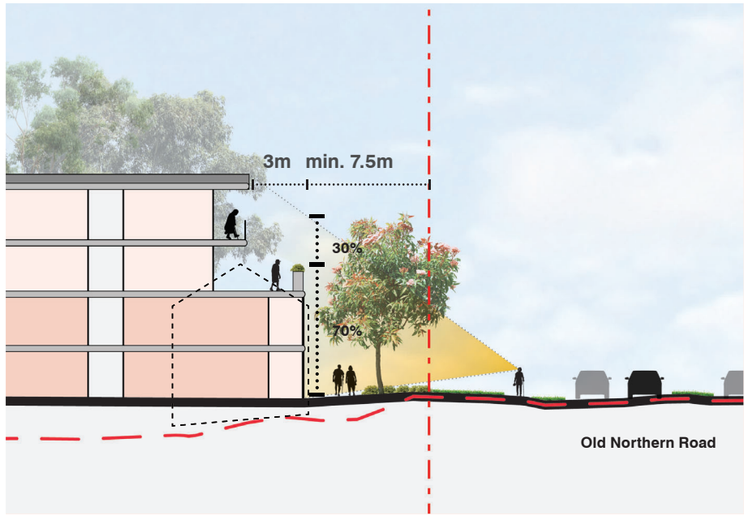
Impacts
- Upper level setback of 5m along the southern boundary mitigates privacy and overshadowing impacts to neighbouring private open space at 342 Old Northern Road and 51 Pioneer Place.

Indicative sections provide assessment of upper level setbacks for identified buildings.
- Section 1 - Buildings A, B & D upper level setbacks to Old Northern Road.
- Section 2 - Buildings H & I upper level setbacks to Old Northern Road.
- Section 3 - Building E upper level setbacks to southern boundary and relationship to topography

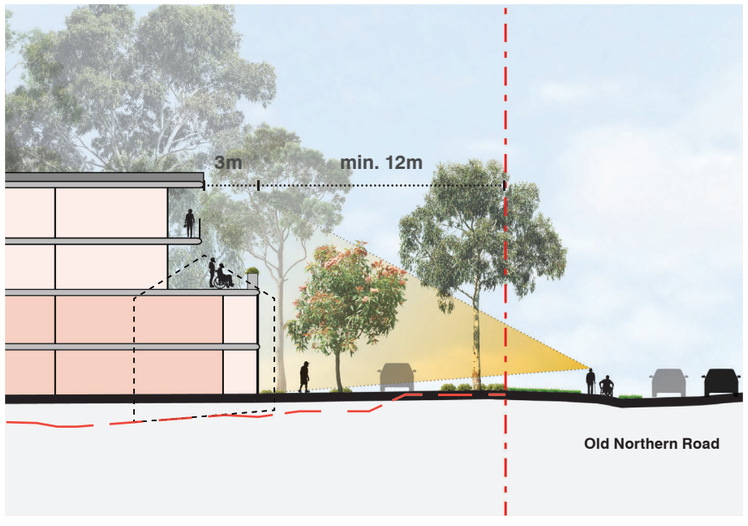
Legend
- Site boundary
- Existing terrain
- View cone
- Independent living units (Ground floor facade treatment)
- Independent living units (Upper level facade treatment)
- Core/lobby
- Basement car parking
- Existing built form



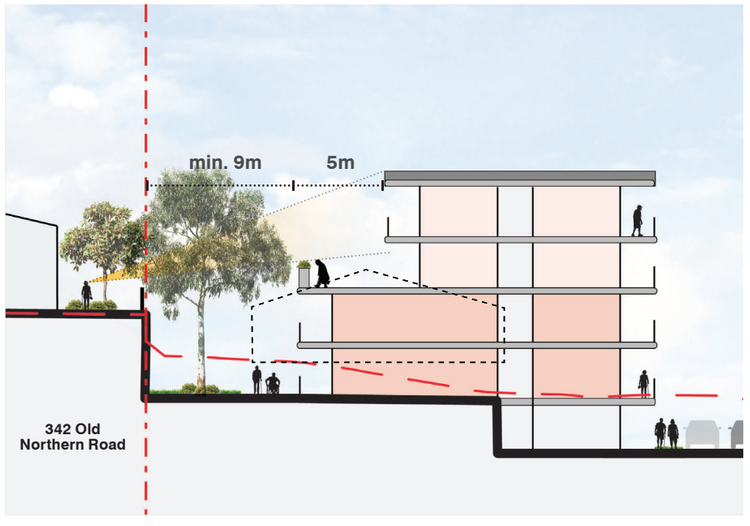
Section location map



Section 1



Section 2



Section 3

Response to gateway

Gateway Condition

c. Provide a clear description in metres of the upper level storey setbacks for the built form elements above 2 storeys for all buildings in both text and map annotations.

Response

The upper level setback map works with the street wall height map to provide guidance for building heights and overall shape.

These aim to manage impacts on:

- The existing character of the area;
- Sunlight to adjoining buildings, private and public open spaces;
- Privacy and overlooking and
- The sense of pedestrian scale and amenity in streets

Upper level setbacks

- A Minimum 3m upper level setback above the 2 storey street wall along Old Northern Road and the western boundary to the adjoining residential property at 9 Palisander Place
- A Minimum 3m upper level setback above the 3 storey street wall to the central park
- A Minimum 5m upper level setback above the 2 storey street wall along the southern boundary to the adjoining residential properties at 342 Old Northern Road to mitigate overshadowing to private open space

Recommended street wall height

Upper level setback map

1:1,500 0 15 30 45 60 75M

Response to gateway

Gateway Condition

e. Update the shadow diagrams in the revised masterplan to more accurately depict the siting and scale of adjoining development to the south and generally.

Response

Overshadowing studies have been assessed during the winter solstice (June 21st) between the hours of 9am and 3pm.

Where minor impacts, to surrounding residential houses occur they are limited to short periods of the day during the winter months only.

Residents at 342 Old Northern Road receive no overshadowing, by the proposal, after 11am on the winter solstice and no overshadowing from 9am-3pm for approximately 8 months of the year.

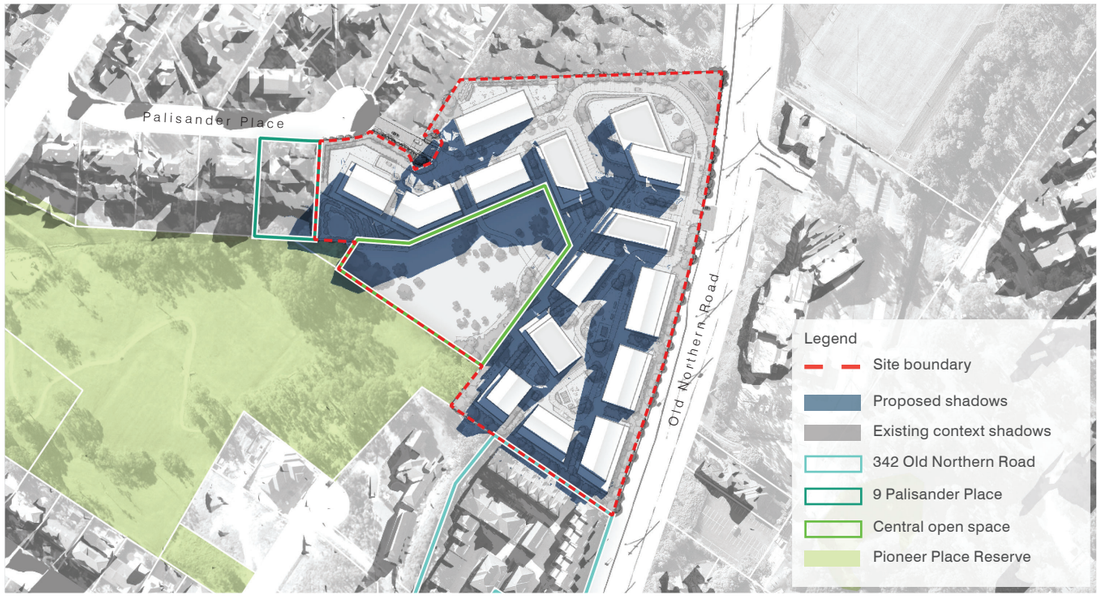
The dwelling at 9 Palisander Place receives no overshadowing, by the proposal, to the private open space after 10:15am and no overshadowing from 9am-3pm for approximately 6 months of the year.

The overshadowing impact on the central open space has been considered, with buildings kept at a maximum of six storeys in height, with a 3 storey podium and 3m upper level setback.

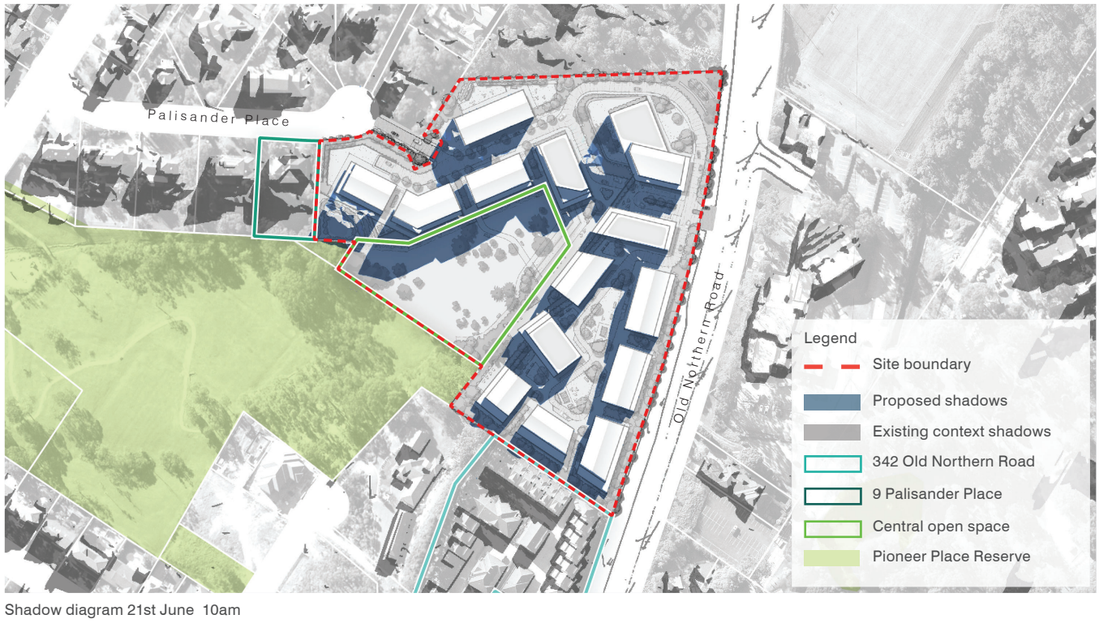
Minimum targets for daylight access between the hours of 9am to 3pm (June 21st) are as follows:

- 40% of the central open space is not overshadowed at any time
- 60% of the central open space is not overshadowed by more than 2 hours

The proposed development results in negligible overshadowing (20min) to Pioneer Place Reserve in midwinter. Any overshadowing is limited to the dense vegetation area between 9am and 9:20am and will not impact any usable areas of the park. The park receives no overshadowing from 9am-3pm for approximately 8 months of the year.

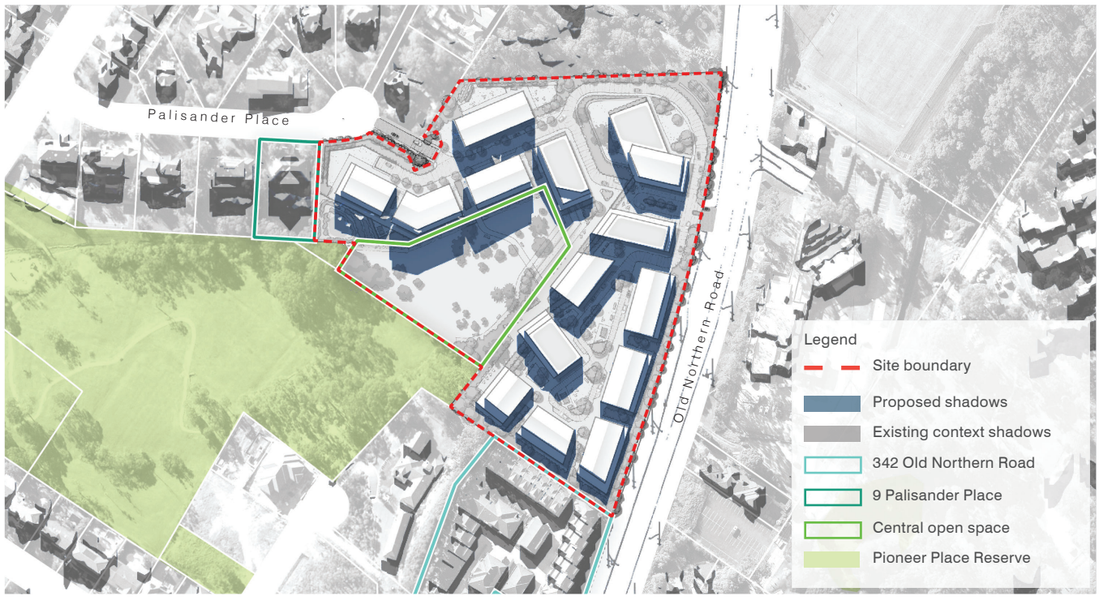


Shadow diagram 21st June 9am

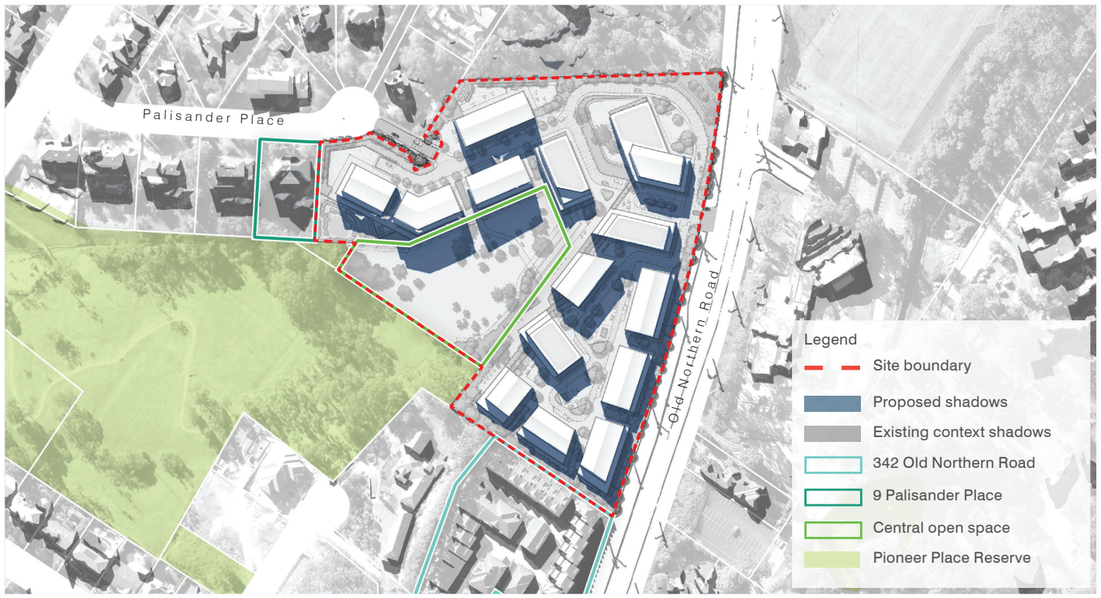


Shadow diagram 21st June 10am

Shadow diagram 21st June 11am



Shadow diagram 21st June 12pm



Shadow diagram 21st June 1pm

Shadow diagram 21st June 2pm

Shadow diagram 21st June 3pm

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