SJB Architects

ASPECT Studios™

Cherrybrook Station Precinct

Potential Increased Affordable Housing Analysis

Prepared for
Landcom

Issued
September 2022

Level 2, 490 Crown Street
Surry Hills NSW 2010
Australia
T. 61 2 9380 9911
architects@sjb.com.au
sjb.com.au

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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.

Ref: 6082
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Prepared by: MG
Checked by: MG

Contact Details:

SJB Architects
Level 2, 490 Crown Street
Surry Hills NSW 2010
Australia

T. 61 2 9380 9911
architects@sjb.com.au
sjb.com.au

SJB Architecture (NSW) Pty Ltd
ABN 20 310 373 425
ACN 081 094 724
Adam Haddow 7188 John Pradel 7004

Issued

V01 Draft for comment	26.09.2022
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Introduction

1

1.1 Background and purpose

During the exhibition of the rezoning for the Cherrybrook Station Precinct in July / August 2022 Landcom received a number of submissions and comments from stakeholders and the general public.

One of the concerns raised was the general low provision of affordable housing within the precinct. The SSP reference scheme (illustrated in the adjacent plan) proposed 33,312m² of residential floor space with 5% affordable housing for a minimum period of 10 years. Feedback from consultation was that the percentage of affordable housing be increased from 5% to 10%.

Landcom have requested that SJB investigate what changes to the development controls would need to be made to accommodate the additional affordable housing units without impacting on the number of market units or changing the amount of non-residential GFA.

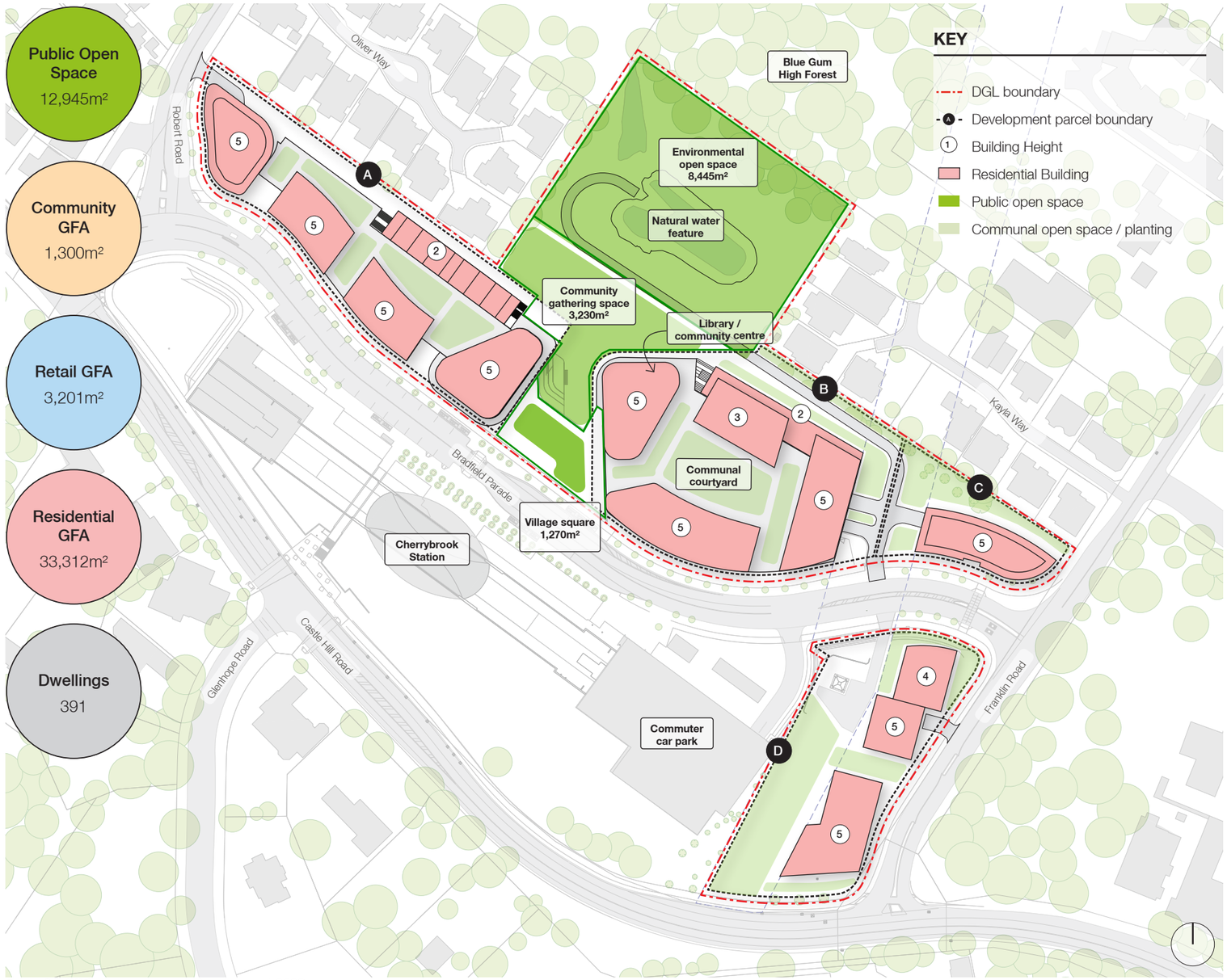


Figure 01: SSP reference scheme (July/ August 2022)

Parcel	*Area	Res GFA	Units	Retail GFA	Com GFA	Total Parcel GFA	Parcel FSR
A	8,597	12,031	141	749		12,780	1.49
B	9,610	11,924	140	2,452	1,300	15,676	1.63
C	2,574	2,736	32			2,736	1.06
D	6,715	6,621	78			6,621	0.99
	27,272	**33,312**	**391**	**3,201**	**1,300**	**37,813**	**1.39**

Notes:

* Approximate parcel area for calculations only

All calculations derived from GBA volumes of the 3D model
Residential GBA > GFA efficiency: 75%
Non-residential GBA > GFA efficiency : 85%
Average unit size : 85m² GFA - based on 20% 1 Bed @ 50m² NSA, 60% 2 Bed @ 75m² NSA and 20% 3 Bed @ 50m² NSA

Table 01 Development schedule by development parcel

1.1 SSP Proposed LEP controls

The maps below illustrate the changes to the development controls sought during the July / August 2022 exhibition process

Figure 02: SSP Proposed Land Use Zoning

Figure 03: SSP Proposed site Floor Space Ration controls 1:4,000 @ A3

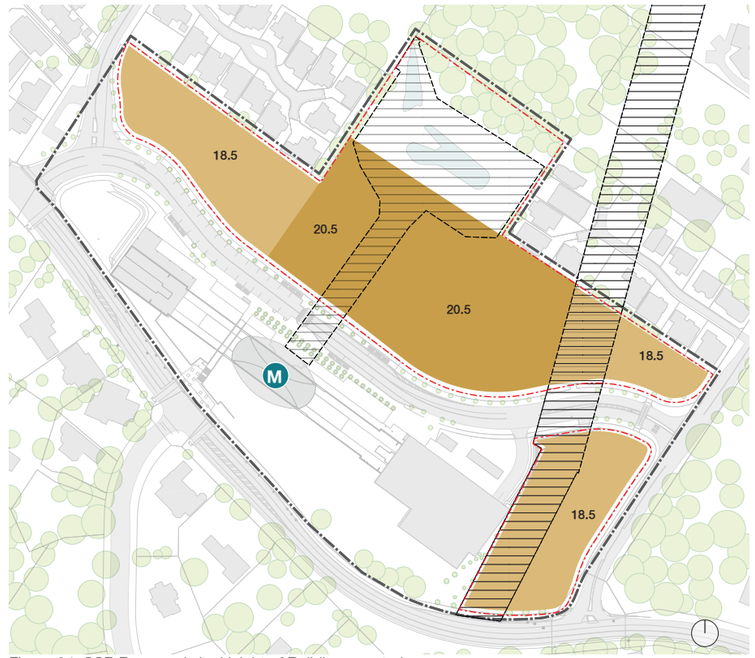


Figure 04: SSP Proposed site Height of Buildings controls

KEY

- DGL boundary
- RE1 Public Recreation
- B4 Mixed Use
- R2 Low density residential
- R4 High density residential
- E1 National Parks / Nature Reserves
- Easements

KEY

- DGL boundary
- Easements
- N - 1:1
- O - 1.25:1

	Approximate area	FSR	Permissible GFA
Portion A:	25,510m²	1.25:1	31,887.5m²
Portion B	6,715m²	1:1	6,715m²

KEY

- DGL boundary
- Cherrybrook Station Government Land State Significant Precinct (SSP)
- Easements
- 20.5m - up to 5 storeys (mixed use)
- 18.5m - up to 5 storeys (residential)

Storeys (No.)	5	5
Building type	RFB	MU
Lift overrun (m)	2.5	2.5
Typical residential floors (assumed 3.1m floor to floor)	12.4	12.4
Ground floor (m floor to floor)	3.6	5
Calculated	18.5	20.4
For LEP (m)	**18.5**	**20.5**

Massing studies

2

2.1 Options study

A number of options were investigated for the distribution of the additional units across the site. As indicated in the table below it has been assumed that:

- The quantum of non residential uses would remain the same
- The number of market dwellings would remain consistent at 373 dwellings (31,646m²)
- The number of affordable units would be increased from 20 to 41 (an increase of 21 dwellings requiring an additional 1,666m² of residential GFA.

The additional massing was allocated based on the following principles:

- No additional dwellings were provided on the site at the corner of Franklin Street and Castle Hill Road
- Additional height was concentrated along Bradfield Parade and within the land zoned B4
- The land to the north of Bradfield Parade should retain a single FSR to maintain flexibility and allow for yield and built form to be reviewed at the next stage of planning
- Where additional storeys have been added, a 5 storey street wall is maintained with upper levels set back by 3m

Key observations

The options illustrated in the pages that following suggest:

- It is not necessary to amend the proposed land use zonings from that which formed part of the SSP as all sites are able to accommodate residential flat buildings
- The approach to having a broad FSR control across the two portions (A and B) allows for a level of flexibility in the distribution of additional dwellings
- The requirement for the provision of an open space within Portion A means that the FSR for this site will be lower that the surrounding areas where public open space is not required.
- The FSR for portion A needs to be increased to deliver the additional affordable dwellings
- The Height of Buildings controls needs to be increased from 20.5m to at least 23m (2.5m) to accommodate the additional storeys and required lift overruns. Consideration should be given to increasing this height due to the level changes across the site.
- Minor changes to the DCP controls around buildings heights would be required to deliver buildings of more than 5 storeys in the precinct

Assumptions

For the purposes of this study the following assumptions have been used:
Residential GBA > GFA efficiency : 75%
Non-residential GBA > GFA Efficiency: 85%
Average unit size : 85m

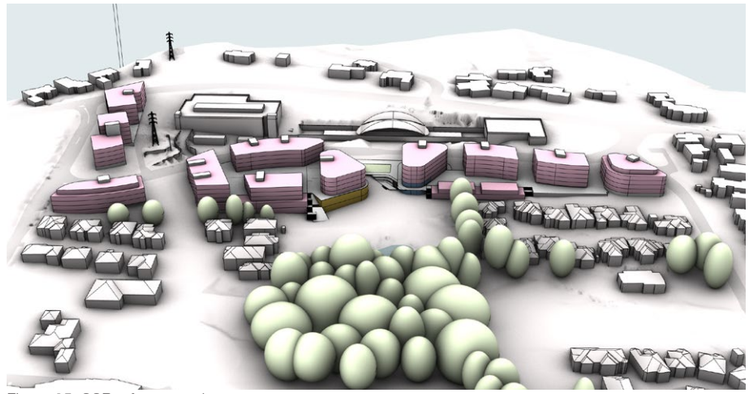


Figure 05: SSP reference scheme

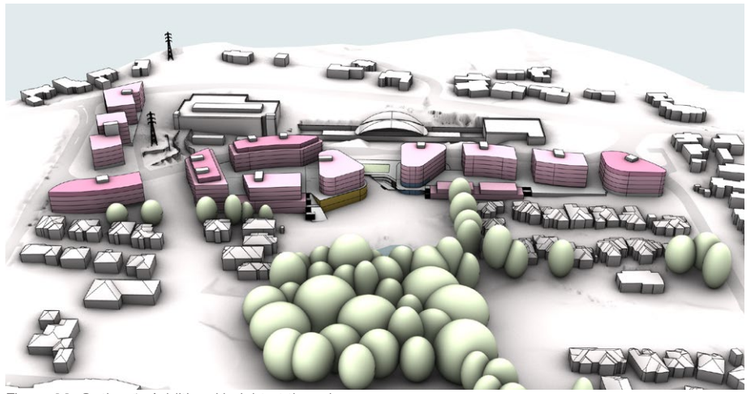


Figure 06: Option 1: Additional height at the edges

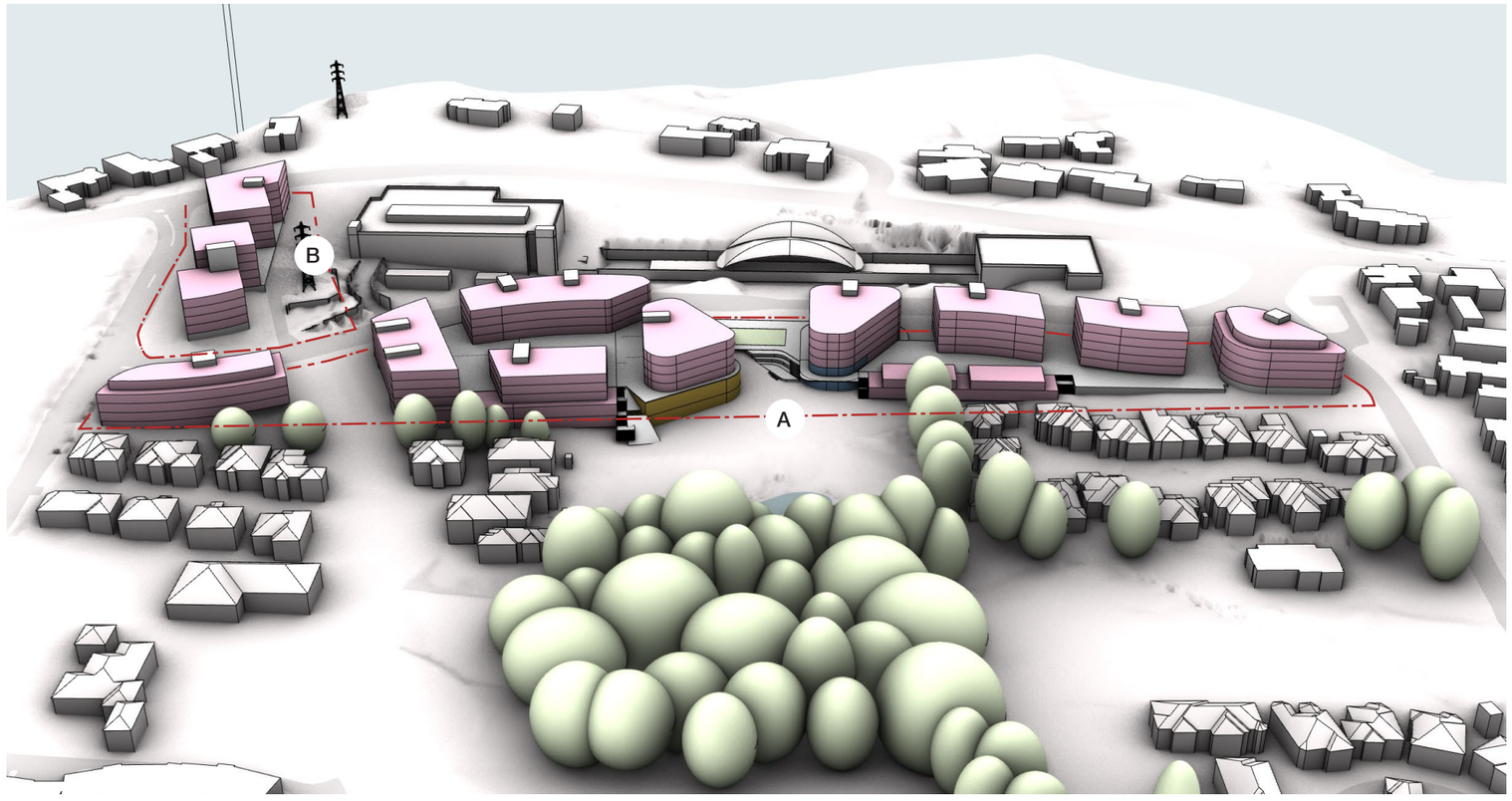
Figure 07: Option 2: Additional height around the Station Plaza

Figure 08: Option 3: Additional height above the retail podium

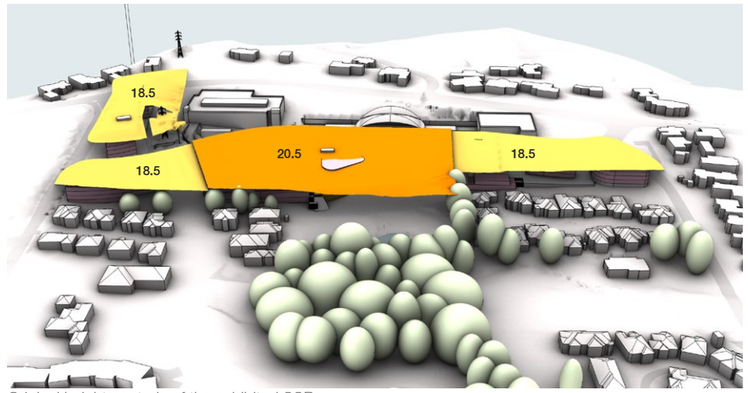
	Non-residential GFA (m²)	Residential GFA (m²)	Number of dwellings	Market GFA (m²)	No. Market	% Market	Affordable GFA (m²)	No Affordable Dwellings	% Affordable
August 2022 SSP Reference scheme	4,501	33,312	392	31,646	373	95%	1,666	20	5%
Affordable housing study targets	4,501	34,978	413	31,646	373	90%	3,331	41	10%
Increase	-	1,666	21	-	-	-5%	1,666	21	5%

Table 02: The above table summaries the additional quantum of development sought to deliver an additional 5% of affordable housing

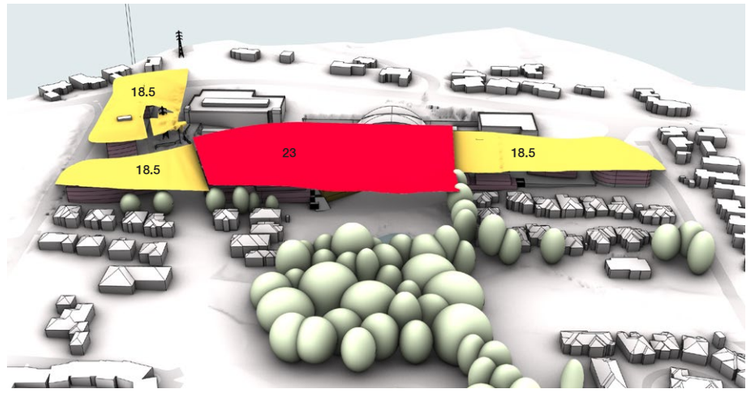
2.2 Exhibited SSP Reference Scheme



Proposed built form massing viewed from the north, above the Blue Gum High Forest



Original height controls of the exhibited SSP



Recommended height controls to accommodate the additional affordable housing

This view shows the massing of the exhibited SSP reference scheme. While the buildings are at a height of five storeys when viewed from Bradfield Parade, the change in level across the site means that the two buildings adjacent to the station plaza appear as six storeys when viewed from the north. it is also worth noting that the southern portion of the residential tower, as well as its lift overrun exceed the 20.5m HoB control required by DPE.

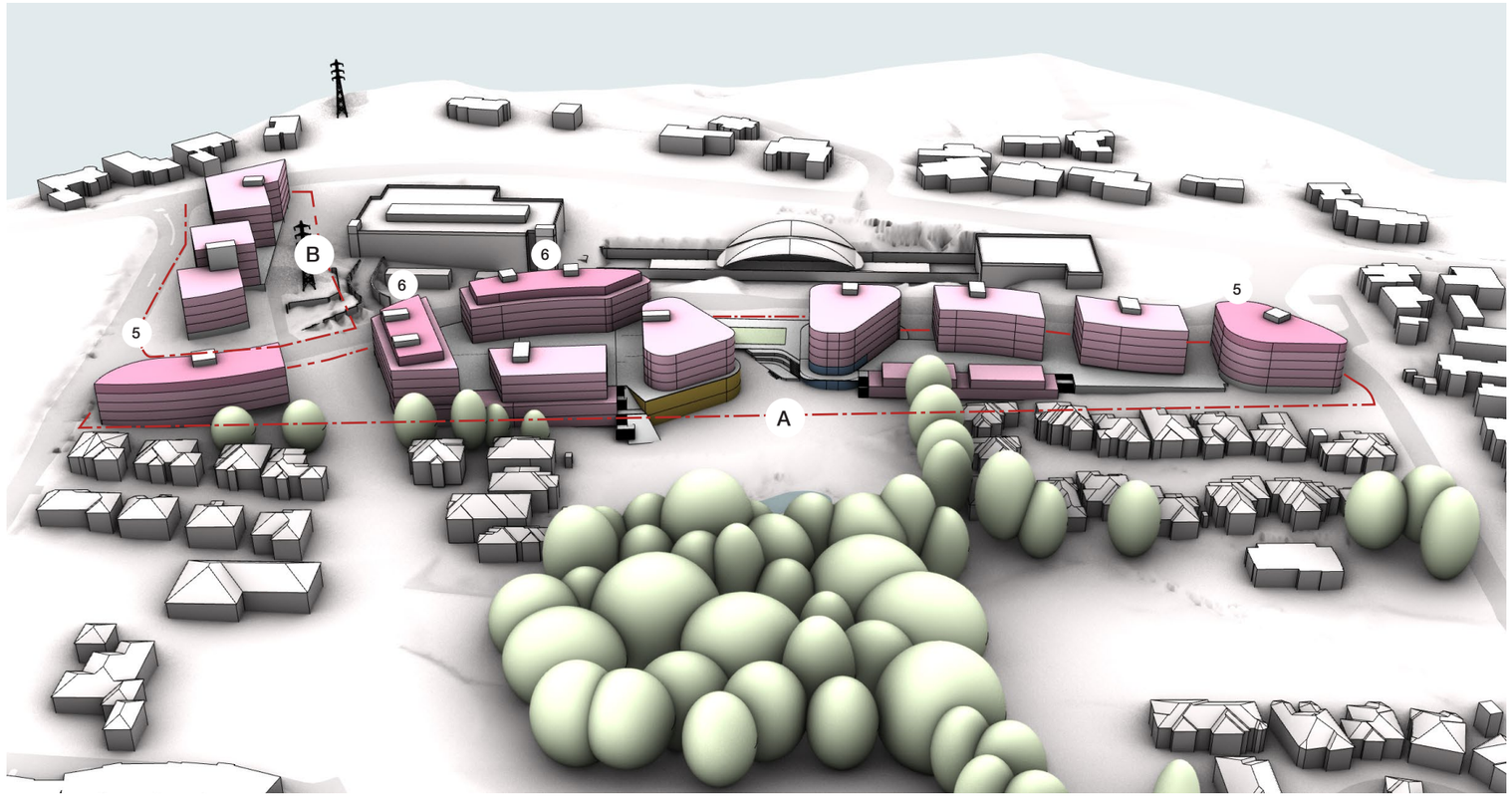
Parcel A

Site Area: 25,494sqm
Resi: 26,760sqm
Non-Resi: 4,936sqm
Total: 31,696sqm
Resi FSR: 1.05 : 1
Non-Resi FSR: 0.19 : 1
Total FSR: 1.24 : 1
Units: 315

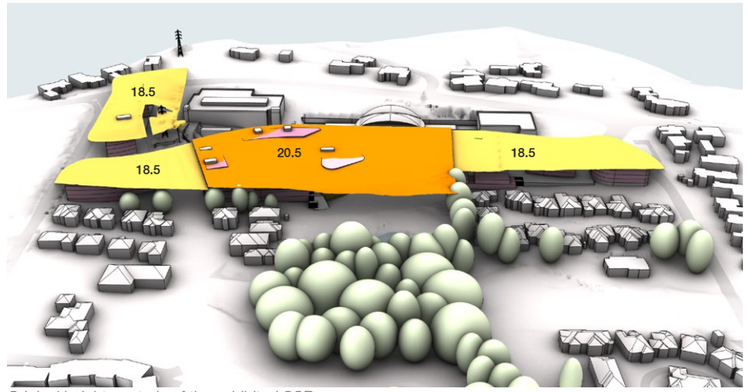
Parcel B

Site Area: 6715sqm
Resi: 6,622sqm
Non-Resi: 0sqm
Total: 6,622sqm
Resi FSR: 0.99 : 1
Non-Resi FSR: 0.0 : 1
Total FSR: 0.99 : 1
Units: 78

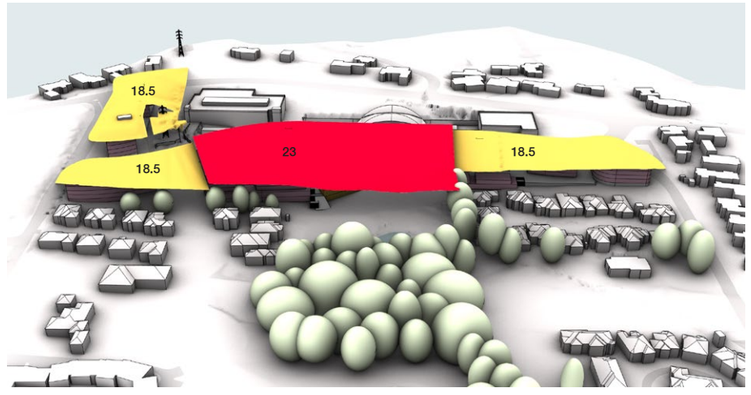
2.3 Option 1: Additional height on the edges



Proposed built form massing viewed from the north, above the Blue Gum High Forest



Original height controls of the exhibited SSP



Recommended height controls to accommodate the additional affordable housing

This options seeks to minimise the potential impact of the additional dwellings on the station plaza by locating additional storeys at the edges of the site. Additional storeys have been added in the R4 zoned land to the east and west with upper level setbacks removed. There are consequently greater overlooking impacts on the existing adjoining properties to the north. Additional levels have also been added to the above podium residential towers with a sixth storey added to these buildings. To accommodate the additional dwellings within the B4 zone the Height of Buildings controls would need to be increased from 20.5 to 23m to accommodate the additional storey and lift over runs.

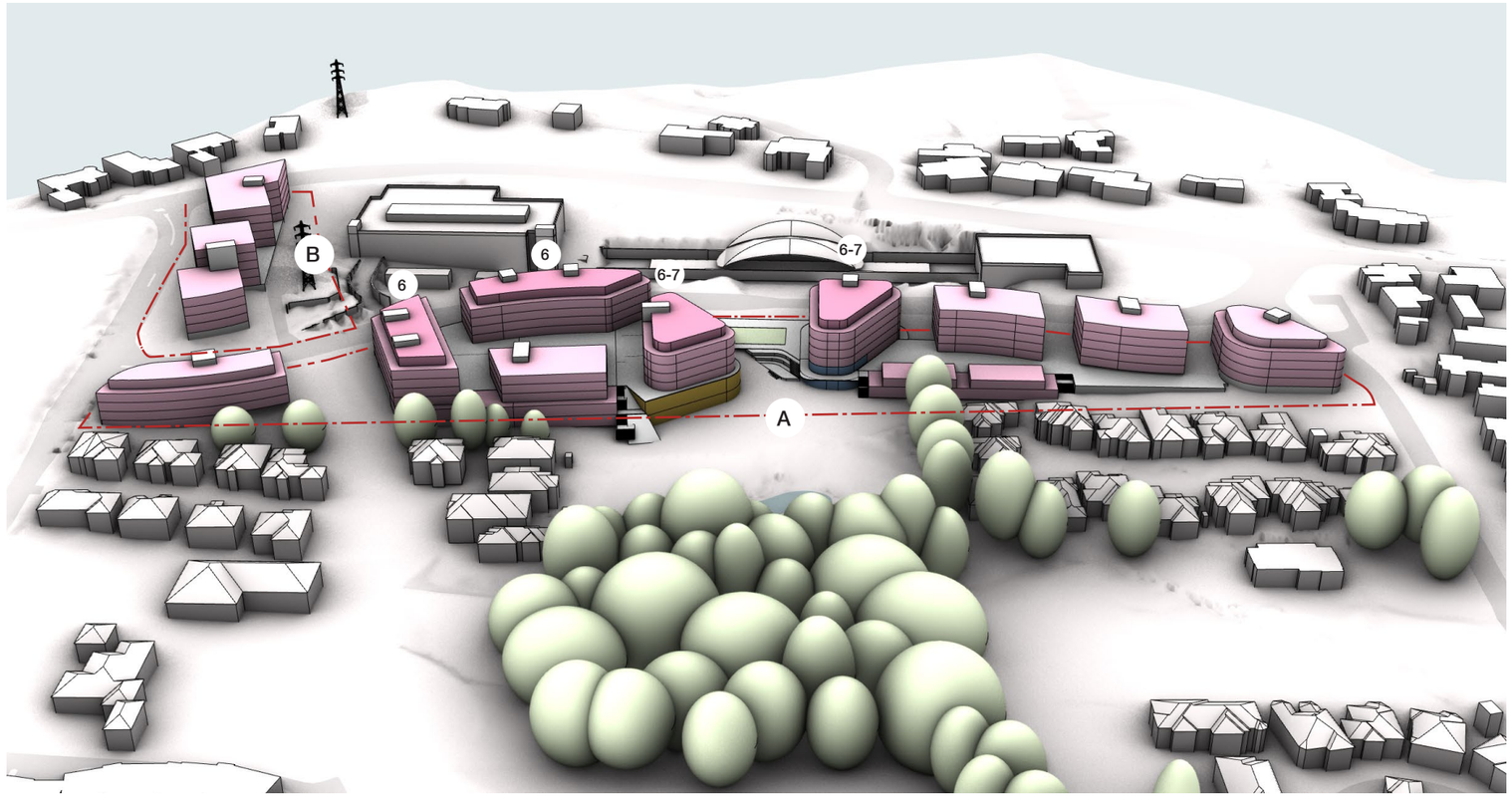
Parcel A

Site Area: 25,494sqm
Resi: 29,372sqm
Non-Resi: 4,936sqm
Total: 34,308sqm
Resi FSR: 1.15 : 1
Non-Resi FSR: 0.19 : 1
Total FSR: 1.35 : 1
Units: 346

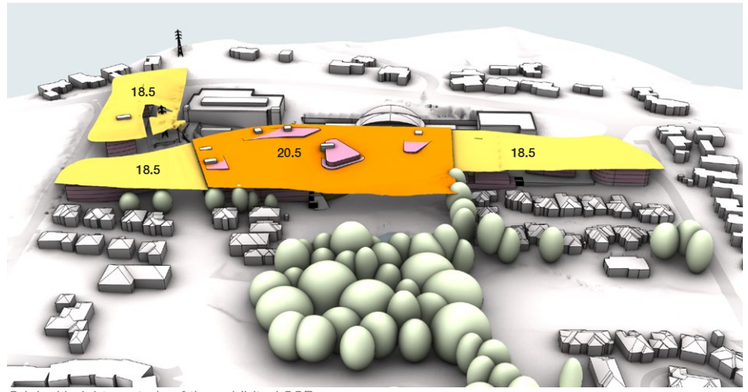
Parcel B

Site Area: 6,715sqm
Resi: 6,622sqm
Non-Resi: 0sqm
Total: 6,622sqm
Resi FSR: 0.99 : 1
Non-Resi FSR: 0.0 : 1
Total FSR: 0.99 : 1
Units: 78

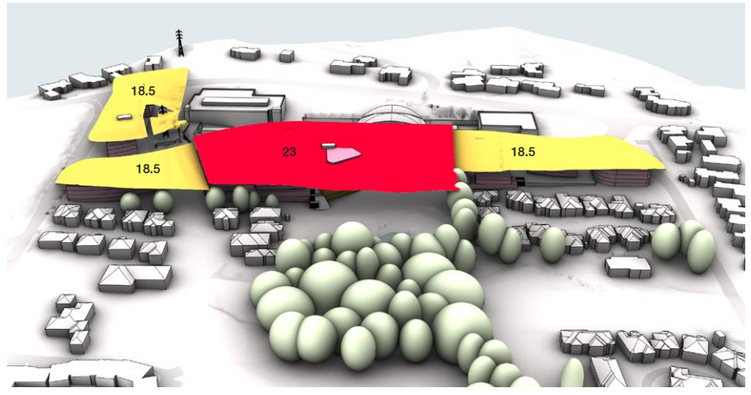
2.4 Option 2: Height around the Station Plaza



Proposed built form massing viewed from the north, above the Blue Gum High Forest



Original height controls of the exhibited SSP



Recommended height controls to accommodate the additional affordable housing

This options seeks to minimise the potential impact of the additional dwellings adjoining neighbours and concentrates additional height within the B4 zone and around the plaza. This option would have greater overshadowing impacts on the Station Plaza, but this has been minimised by the additional upper level setback. One drawback of this option is that the buildings around the plaza, when viewed from the north appear to be 7 storeys due to the change in level, To accommodate the additional storeys Height of Buildings controls would need to be increased from 20.5 to 23m to accommodate the additional levels and lift over runs. Even so, due to the change in level towards the pond the northern most tower above the library would exceed the 23m height plain. This would need to be increased to 25m to accommodate the additional level and lift overrun

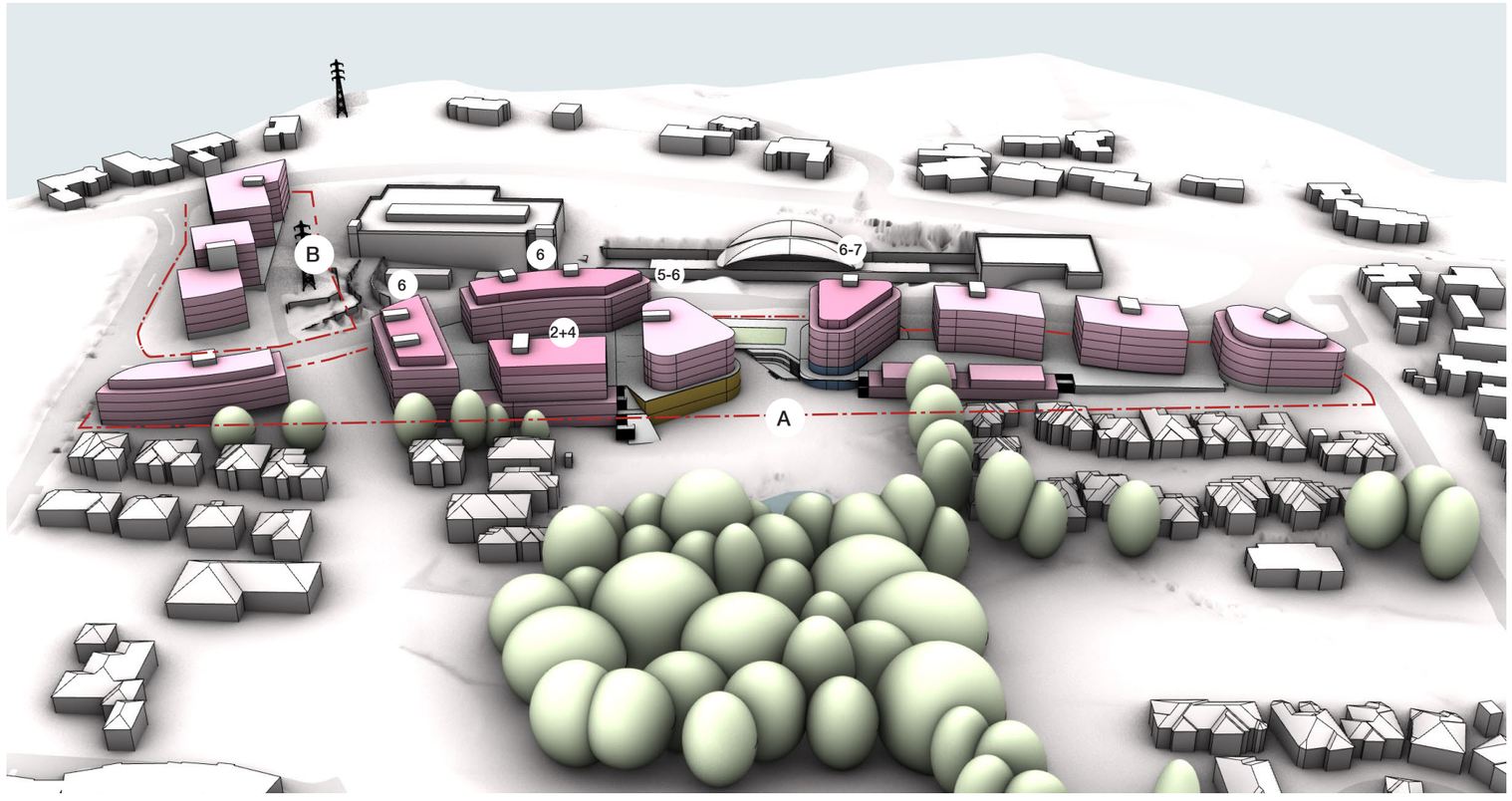
Parcel A

Site Area: 25,494sqm
Resi: 28,702sqm
Non-Resi: 4,936sqm
Total: 33,638sqm
Resi FSR: 1.13 : 1
Non-Resi FSR: 0.19 : 1
Total FSR: 1.32 : 1
Units: 338

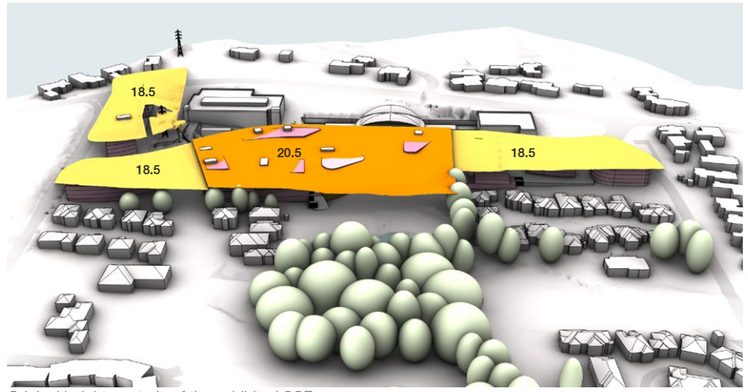
Parcel B

Site Area: 6,715sqm
Resi: 6,622sqm
Non-Resi: 0sqm
Total: 6,622sqm
Resi FSR: 0.99 : 1
Non-Resi FSR: 0.0 : 1
Total FSR: 0.99 : 1
Units: 78

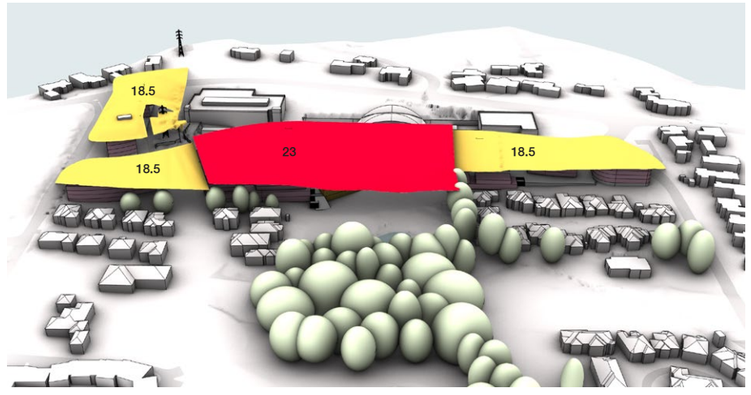
2.5 Option 3: Height above the podium



Proposed built form massing viewed from the north, above the Blue Gum High Forest



Original height controls of the exhibited SSP



Recommended height controls to accommodate the additional affordable housing

This options seeks to reduce potential solar impacts on the Station Plaza by concentrating additional dwellings within the B4 zone and above the retail podium. In this option only one building would appear to be 7 storeys when viewed from the north. In this option Height of Buildings controls have been increased from 20.5 to 23m to accommodate the additional levels and lift over runs, and no elements (including lift overruns exceed this height).

Parcel A

Site Area: 25,494sqm
Resi: 28,783sqm
Non-Resi: 4,936sqm
Total: 33,719sqm
Resi FSR: 1.13 : 1
Non-Resi FSR: 0.19 : 1
Total FSR: 1.32 : 1
Units: 339

Parcel B

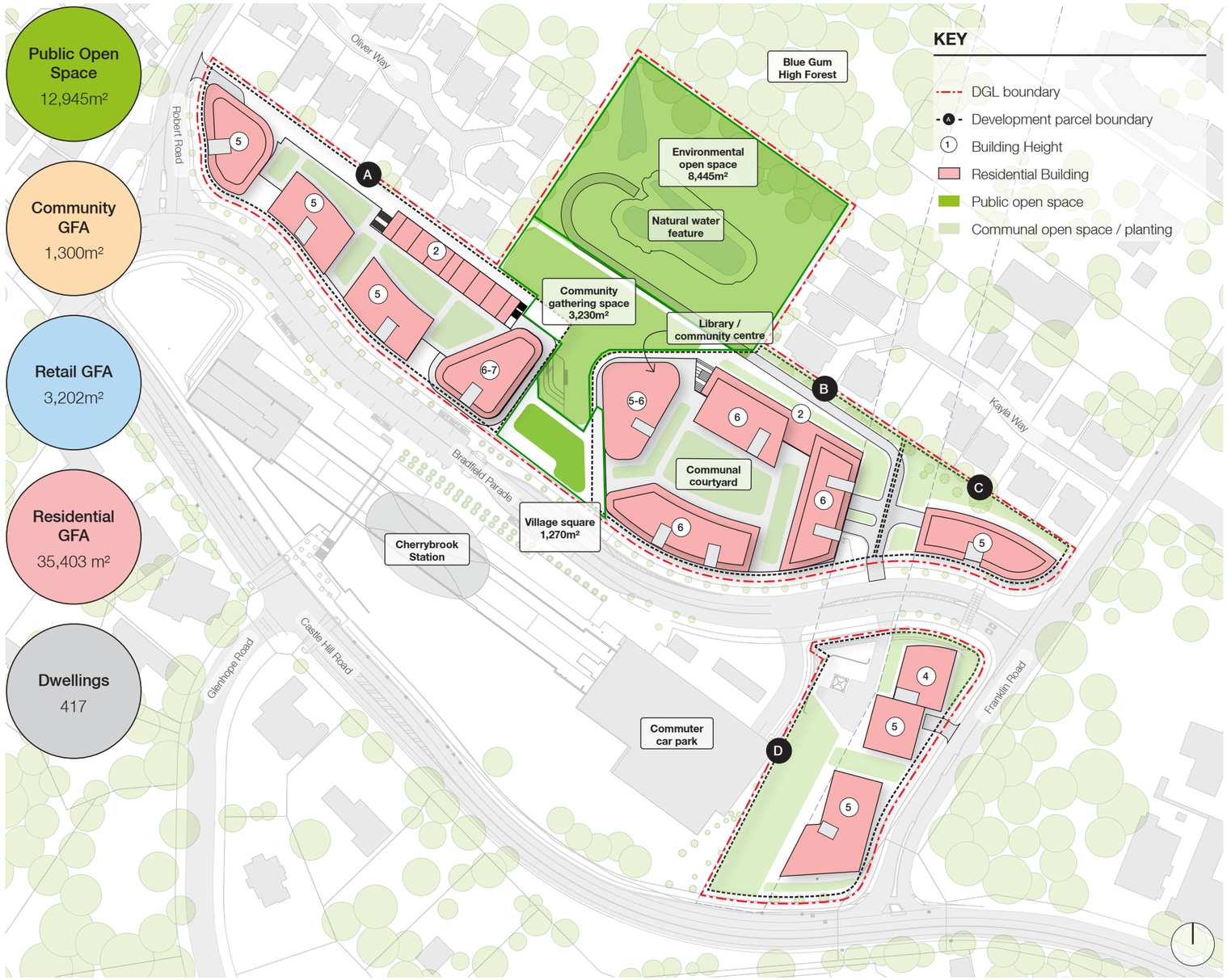
Site Area: 6,715sqm
Resi: 6,622sqm
Non-Resi: 0sqm
Total: 6,622sqm
Resi FSR: 0.99 : 1
Non-Resi FSR: 0.0 : 1
Total FSR: 0.99 : 1
Units: 78

Assessment

3

3.1 Option 3.

As illustrated above there a numerous ways in which the built form massing can be arranged to accommodate the additional affordable dwellings and storeys within the B4 zoned land. Option three, with the additional dwellings predominately located above the retail podium has the least impact on the public domain. The detailed breakdown of yield and massing is provided below



Parcel	*Area	Res GFA	Units	Retail GFA	Com GFA	Total Parcel GFA	Parcel FSR
A	8,597	12,480	147	750		13,230	1.54
B	9,610	13,566	160	2,452	1,300	17,752	1.85
C	2,574	2,736	32			2,736	1.06
D	6,715	6,621	78			6,621	0.99
	27,496	**35,403**	**417**	**3,202**	**1,300**	**40,339**	

Notes:

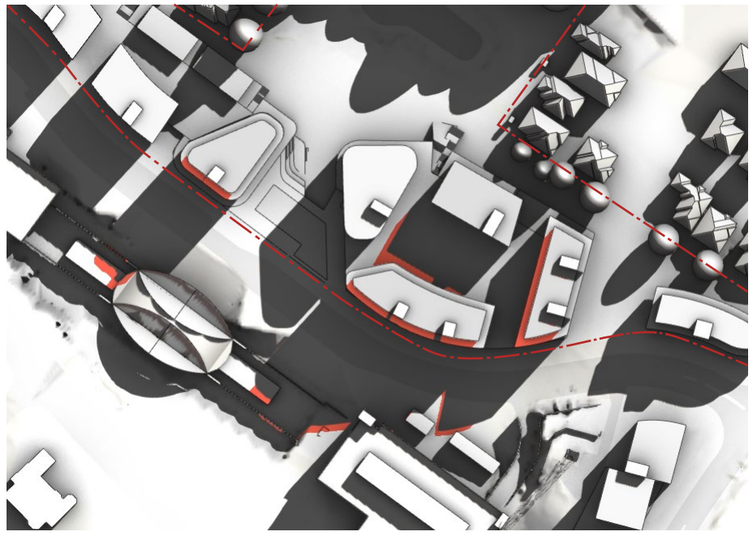
* Approximate parcel area for calculations only

All calculations derived from GBA volumes of the 3D model
Residential GBA > GFA efficiency: 75%
Non-residential GBA > GFA efficiency : 85%
Average unit size : 85m² GFA - based on 20% 1 Bed @ 50m² NSA, 60% 2 Bed @ 75m² NSA and 20% 3 Bed @ 50m² NSA

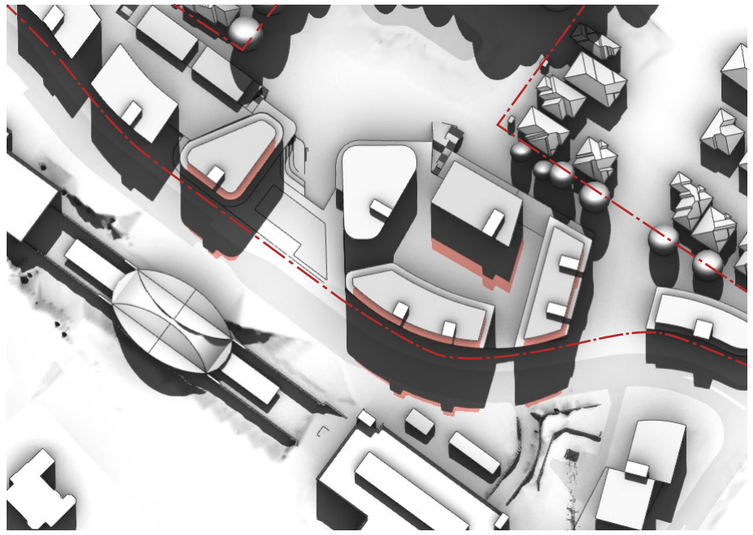
Table 03 Development schedule by indicative development parcel

Assessment

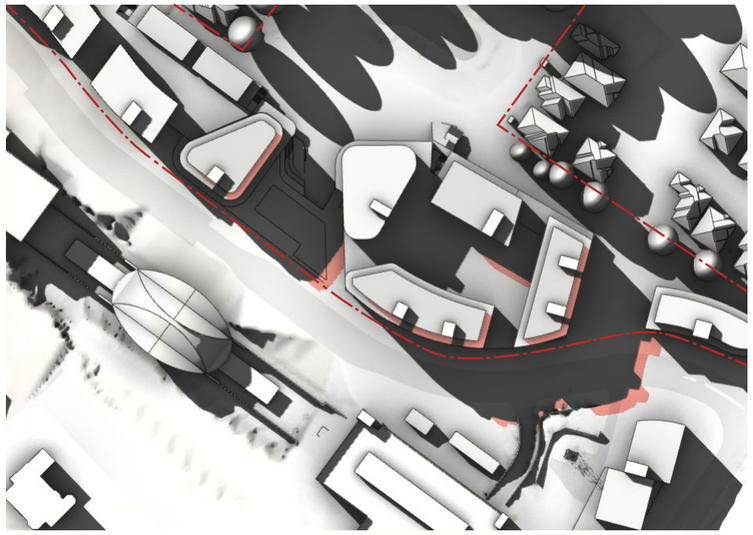
Shadow study



9am



12pm



3pm

The above shadow study of option 3 illustrates the additional overshadowing impact on the public domain compared to the reference scheme. The study illustrates that there is a very limited impact of the additional storeys as a result of the upper level setback proposed along Bradfield Parade.

KEY

- DGL boundary
- Shadows for SSP reference scheme
- Additional overshadowing

3.2 Conclusion and recommendations

The options presented above illustrate that there are multiple ways to accommodate the additional 5% affordable units within the site. Amendments to the LEP and DCP (Design Guide) controls will however be required. It is important for any changes to development controls to allow Landcom and future development partners and designers a level of flexibility in the distribution of massing and development across the site.

The following is therefore recommended:

- That the FSR control for Portion A is increased from 1.25:1 to a minimum of 1.32:1to allow for 33,673m² of GFA on this portion, as a mix of residential and retail land uses. This would allow for an additional 21 affordable dwellings. Should it be decided to round the FSR control up to an increment consistent with the Horrnsby LEP control (1.35:1) then this could deliver a total of 34,439m² of GFA on the portion A (an additional 765m² GFA / approximately 9 dwellings). Noting that this additional yield has not been tested as part of this investigation, but may be achievable at the next stage of design.
- The Height of Buildings Controls for the areas zoned B4 could be increased to 23m (2.5m above the previously proposed 20.5m), however it is recommended that this is amended up to 23.5m to allow for topographical level changes and to be consistent with Hornsby Shire Councils LEP HoB increments.
- That consideration should be given to including a 5 storey street wall control along Bradfield Parade, and around the station plaza in the DCP / Design Guide to reference the 5 storey buildings in the broader precinct and reduce the potential visual impact and overshadowing impacts of the additional storeys from the public domain. Departures from the street wall could be considered on design merit.

As the additional storeys indicated on the options mirror the built form of the reference scheme, it is not anticipated that there will be significant challenges in addressing ADG requirements. This will need to be assessed at the next stage of approval.

Figure 09: SSP Proposed site Floor Space Ration controls 1:4,000 @ A3

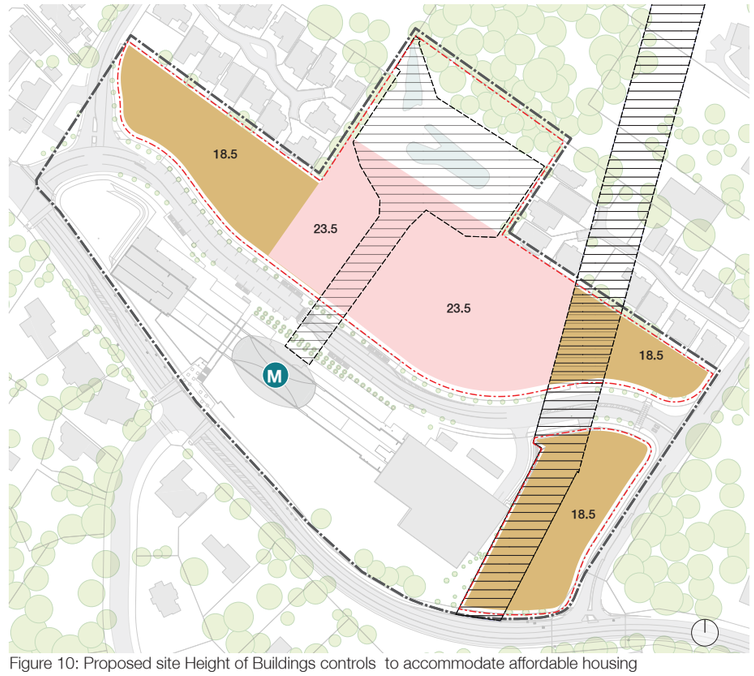


Figure 10: Proposed site Height of Buildings controls to accommodate affordable housing

KEY

- DGL boundary
- Easements
- N - 1:1
- O - 1.32:1

	Approximate area	FSR	Permissible GFA
Portion A:	25,510m²	1.32:1	33,673m²
Portion B	6,715m²	1:1	6,715m²

KEY

- DGL boundary
- Cherrybrook Station Government Land State Significant Precinct (SSP)
- Easements
- 23.5m - 6-7 storeys (mixed use)
- 18.5m - 5 storeys (residential)

Storeys (No.)	5	5	6-7
Building type	RFB	MU	MU
Lift overrun (m)	2.5	2.5	2.5
Typical residential floors (assumed 3.1m floor to floor)	12.4	12.4	15.5
Ground floor (m floor to floor)	3.6	5	5
Calculated	18.5	20.4	23
For LEP (m)	**18.5**	**20.5**	**23.5**

SJB Architects

sjb.com.au

We create spaces people love.
SJB is passionate about the
possibilities of architecture,
interiors, urban design
and planning.
Let's collaborate.

Level 2, 490 Crown Street
Surry Hills NSW 2010
Australia
T. 61 2 9380 9911
architects@sjb.com.au
sjb.com.au