



5.1 COMPARATIVE ANALYSIS

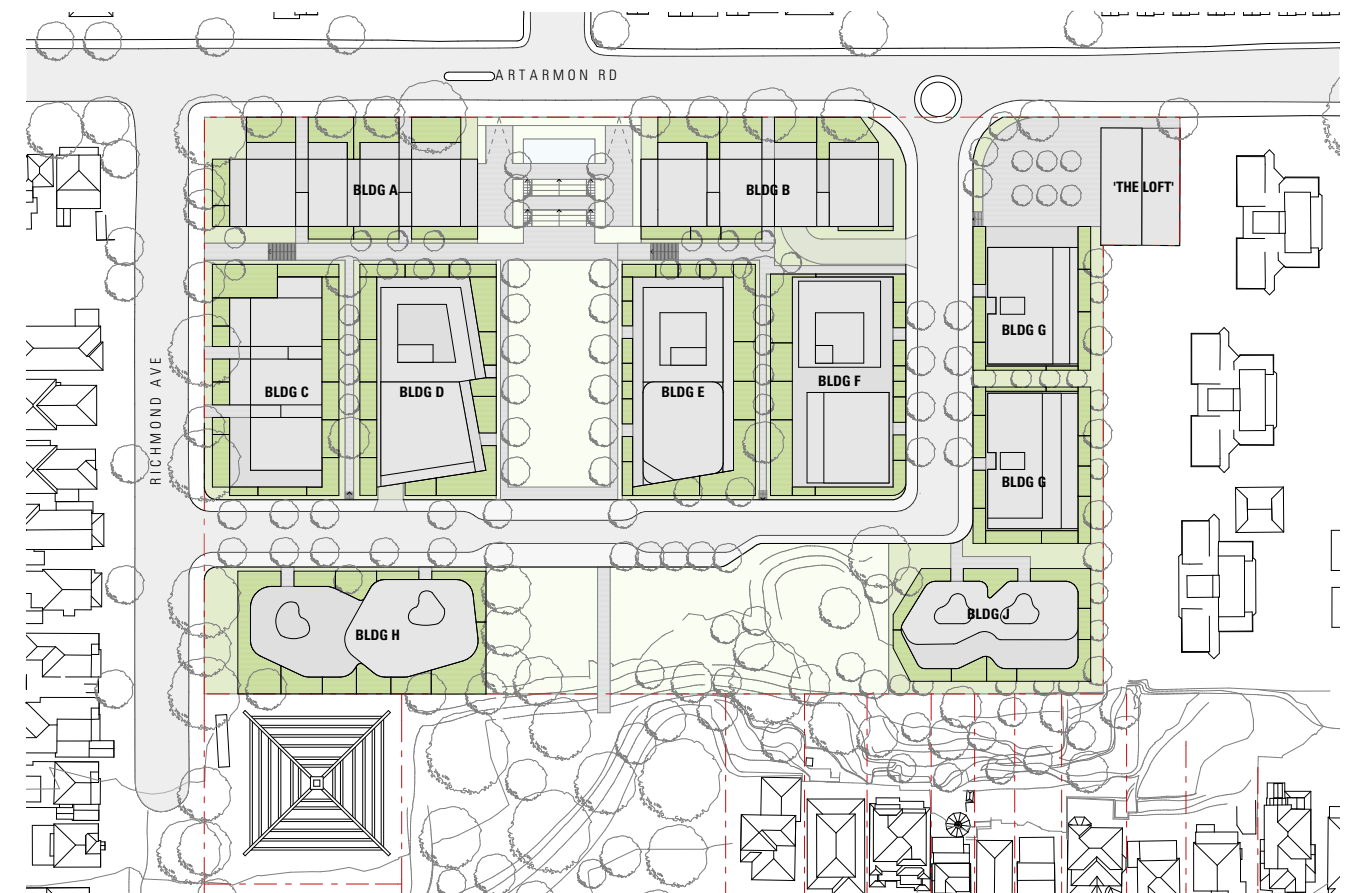
The following pages provide a detailed comparative analysis of the approved and proposed scheme. Supplementary drawings have been provided at the end to clarify any calculation made. A summary of the urban design outcomes have also been provided in matrix form. The approved scheme and proposed modification have been assessed based on the following criteria:

PUBLIC OPEN SPACE
SITE LINES AND VISTAS
PRIVATE GARDENS
SOLAR ACCESS
A LEGIBLE STREET GRID
HEIGHTS
TRAFFIC IMPACT
VISUAL BULK
DENSITY AND FSR
SCALE TRANSITION

APPROVED SCHEME



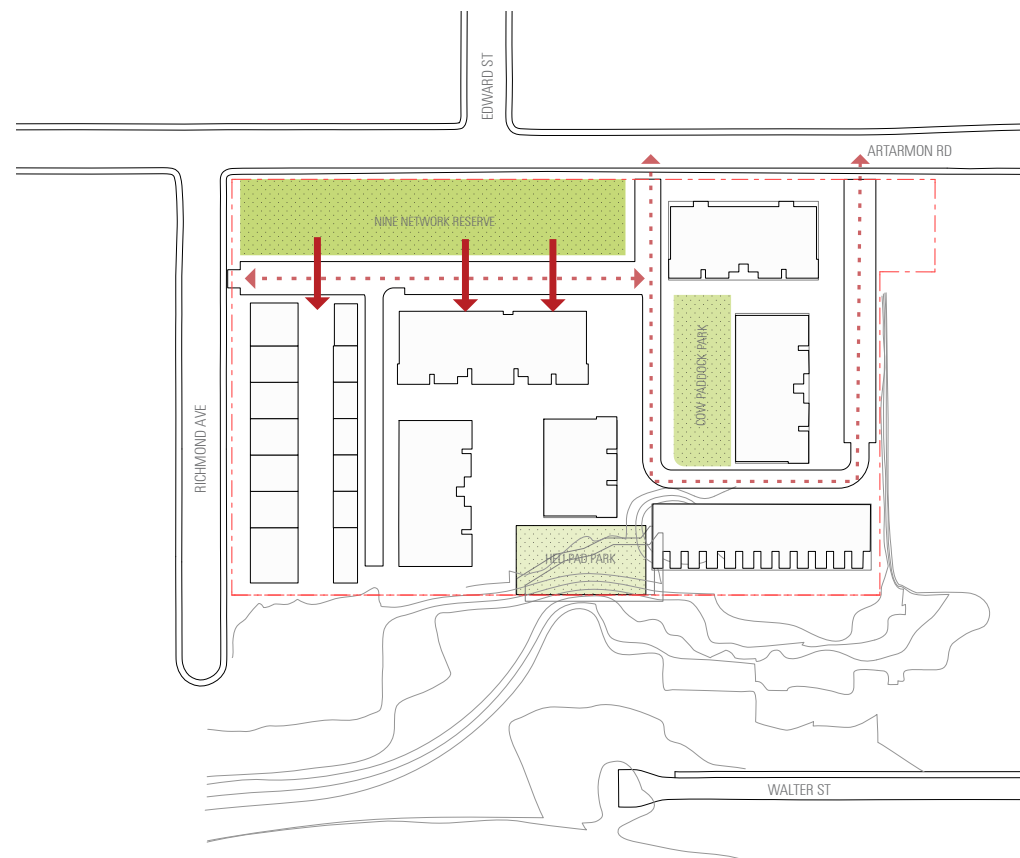
PROPOSED SCHEME



5.2 PUBLIC OPEN SPACE

The proposed scheme started with an investment in public open space and offers a 28% increase over the entire site. The main park is widened, turned 90 degrees from the busy road, given southern views and connects to the Walter St Reserve. The public spaces, in the form of a plaza and park offer two distinct places for the community. Please refer to section 1.51 for a detailed analysis of calculations. No part of Walter St Reserve or public land is included in this calculation.

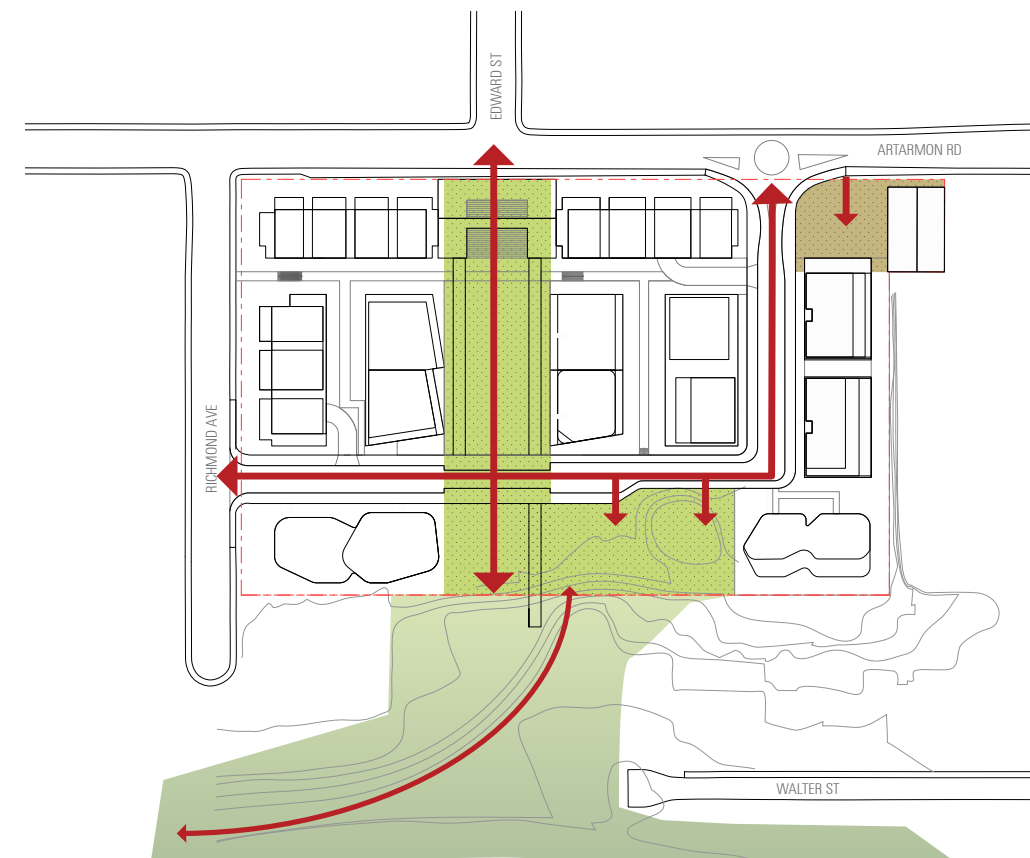
APPROVED SCHEME



PUBLIC OPEN SPACE: 5478M²

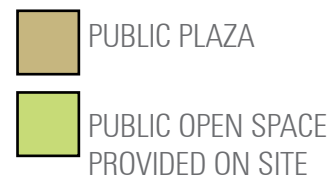
LIMITED PUBLIC CONNECTION TO GREEN SPACES
TURNS AWAY FROM REGIONAL OPEN SPACE CORRIDOR

PROPOSED SCHEME



PUBLIC OPEN SPACE: 7017M² (+28%)

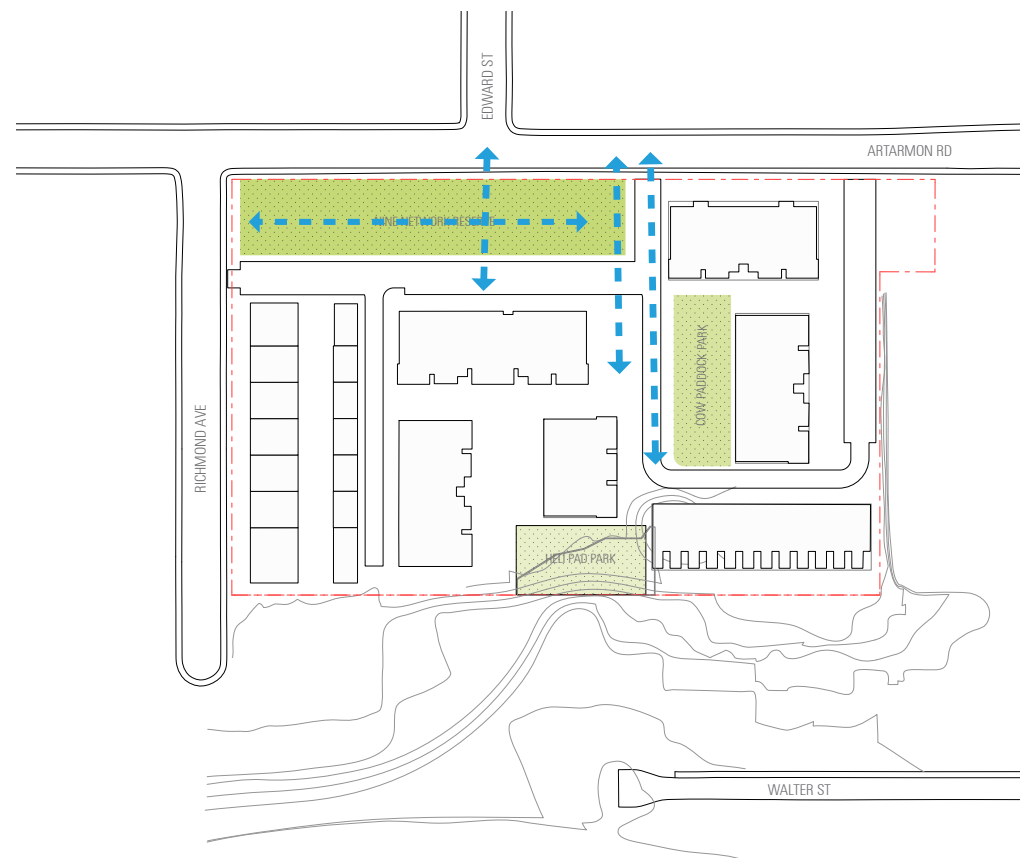
PUBLIC ACCESS MADE A PRIORITY
LINKS TO CYCLE PATHS AND BUSH REGENERATION AREAS



5.3 LONG SIGHT LINES AND VISTAS

Long sight lines and vistas help to break down the sense of massing, reduce the perceived bulk of the development and connect public spaces with local views which help to create a distinct 'sense of place'. Long sight lines also increase site safety and accessibility by creating clear desire lines and ensuring all public spaces are highly visible from Artarmon Rd or Scott Street.

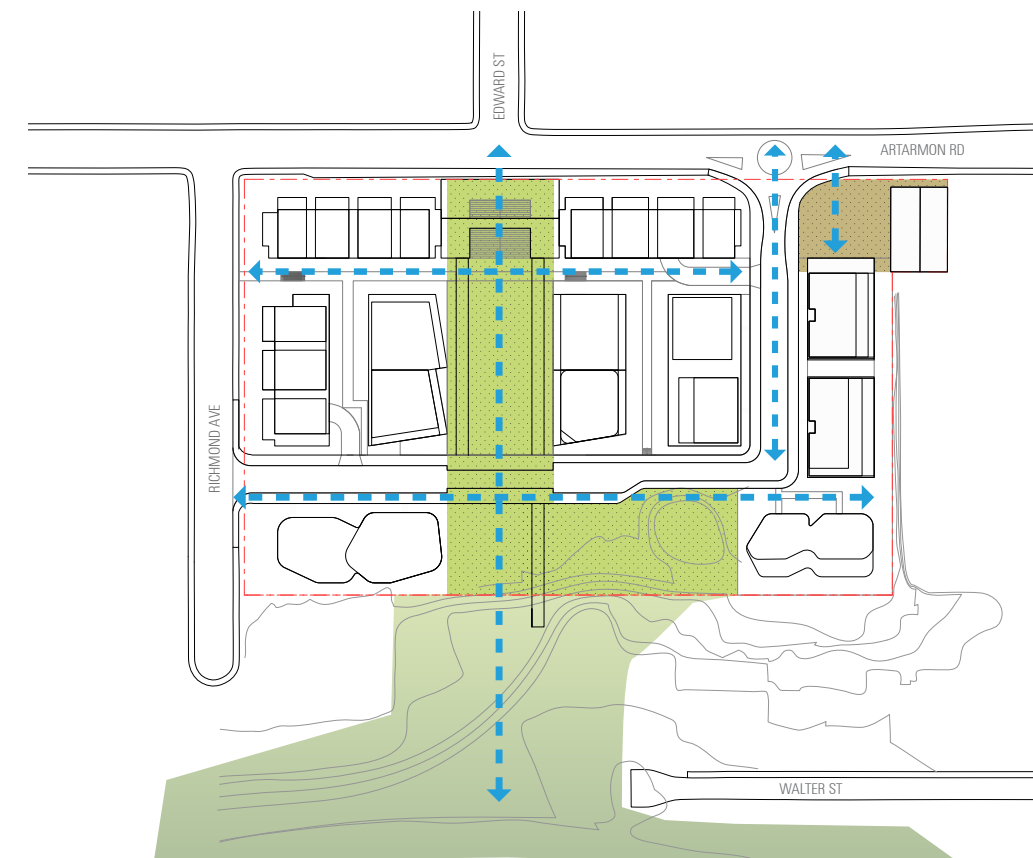
APPROVED SCHEME



MINIMAL SIGHT LINES AND VIEWS

OPPORTUNITIES FOR VIEWS AND VISTAS THROUGH AND ACROSS THE SITE ARE LIMITED AND NARROW. LITTLE VIEW BENEFITS TO ANY PUBLIC SPACE OR SURROUNDING BUILDINGS.

PROPOSED SCHEME



OPEN VISTAS AND PUBLIC VIEWS

LOGICAL BUILDING ARRANGEMENTS, THE CENTRAL PUBLIC OPEN SPACE AND SCOTT ST PROVIDE OPPORTUNITIES FOR LONG VIEWS ACROSS THE SITE AND TO VIEWS BEYOND.

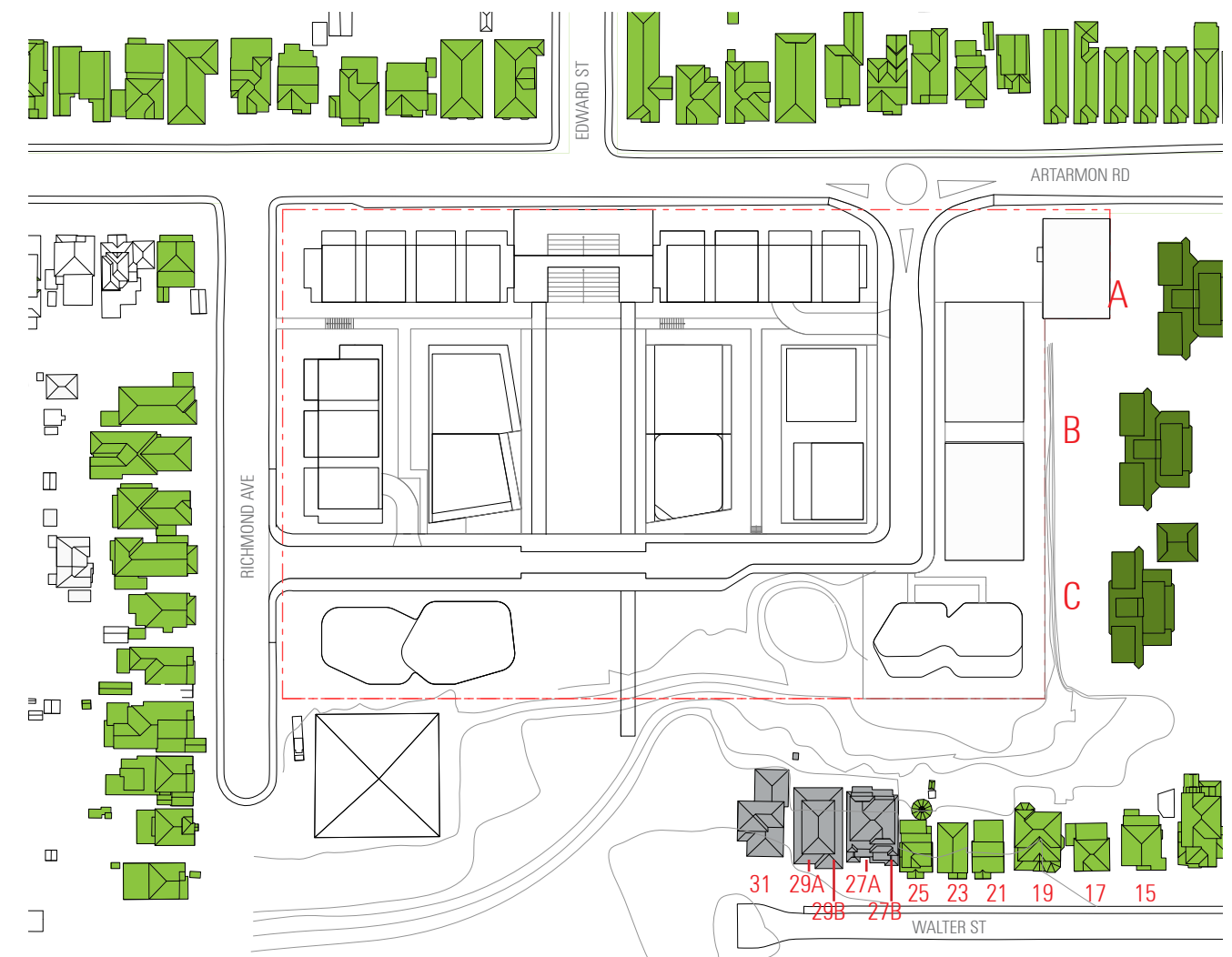
5.4 SOLAR ACCESS - SEPP 65 & WILLOUGHBY DCP

Solar access has been a critical factor in forming the buildings. In particular, solar access to Walter St and the Castle Vale development has been carefully considered. Buildings step back from these boundaries to ensure an improvement in overshadowing, or at least no worst than currently approved. Topological features of the site including the steep escarpment to the south and the steep cliff and wall to the east adjacent with Castle Vale have been factored into these calculations. See Appendix 02 for a comprehensive set of solar diagrams, and an explanation of how solar access has been calculated.

APPROVED SCHEME



PROPOSED SCHEME



= ST NUMBER

COMPLIANT WITH
SOLAR ACCESS WITH SEPP65 ADG
(MIN 2 HOURS BETWEEN 9AM - 3PM)

COMPLIANT WITH
WILLOUGHBY COUNCIL DCP
(MIN 3 HOURS BETWEEN 9AM-3PM)

NON COMPLIANT DUE TO ESCARPMENT
OVERSHADOWING

5.5 SOLAR ACCESS RESULTS - CALCULATIONS

WALTER STREET
HOURS OF SOLAR ACCESS RECEIVED BY EACH PROPERTY

Winter Solstice 22nd June (9am-3pm)

| ST NO. | REAR FAÇADE (HOURS) | | REAR PRIVATE OPEN SPACE (HOURS) | |
|--------|---------------------|----------|---------------------------------|-----------|
| | APPROVED | PROPOSED | APPROVED | PROPOSED |
| 31 | 4.25 | 5.75 | 2 | 2.75 |
| 29A | 4 | 4.25 | 0.25 | 1 |
| 29B | 3.5 | 3.75 | 0 | 0 |
| 27A | 3.5 | 3.25 | 0 | 0 |
| 27B | 2.5 | 2.75 | 0 | 0 |
| 25 | 5.75 | 5.5 | 5.75 | 5 |
| 23 | 6 | 6 | 4 | 4 |
| 21 | 6 | 6 | 5.5 | 6 |
| 19 | 5.25 | 5 | 4.75 | 4.25 |
| 17 | 6 | 5.5 | 6 | 5.5 |
| 46.75 | | 47.75 | 28.25 | 28.5 |
| | | + 1 HR | | + 15 MINS |

- Green represents no change from the approved scheme
- Dark Green represents and improvement from the approved scheme
- Red represents increased overshadowing/ a reduction in solar access.

Results - 13 of the 20 study areas in this table show a no change or improvement to the solar access.

Of the remaining houses where the proposed massing has reduced solar access, no more than 45 minutes of solar access has been lost in any facade or back yard and each affected house continues to receive in excess of the DCP requirement

CASTLE VALE TOWERS
NUMBER OF APARTMENTS OVERSHADOWED

Winter Solstice 21st June (1pm-3pm)

| BLD # | 1-1:15 | | 1:15-1:30 | | 1:30-1:45 | | 1:45-2 | | 2-2:15 | | 2:15-2:30 | | 2:30-2:45 | | 2:45-3 | |
|-----------|----------|-----------|-----------|-------------|-----------|-------------|----------|-------------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED | APPROVED | PROPOSED |
| Tower A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tower B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 4 | 1 | 6 | 2 | 7 |
| Tower C | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 2 | 8 | 4 | 10 | 7 | 12 | 8 | 14 | 9 |
| TOTAL | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 3 | 8 | 7 | 11 | 12 | 14 | 15 | 17 | 17 |
| No change | | No change | | Improvement | | Improvement | | Improvement | | Reduction | | Reduction | | No change | | |

- Results:
- Overall the proposed scheme offers no change, or a minor solar improvement.
 - Overall both the approved and proposed scheme will have some overshadowing impact on the same number of apartments (18) at winter solstice.
 - Tallying the above table, the length of time that apartments are overshadowed is reduced by 15 minutes.
 - In order to achieve the SEPP65 ADG requirement of 2 hours solar access to living rooms at winter between 9am and 3pm, these properties would require sunlight on the western facade between 12 midday and 2pm. Currently 4 properties in the approved scheme will not meet this requirement. In the proposed scheme 3 apartments will not receive this require solar access at winter solstice.

5.6 PRIVATE GARDENS

Generous private gardens are a landscape feature of Willoughby and the North Shore. The proposed scheme has a 46% increase in private garden area, reflecting this local characteristic and helping the new development to feel part of the local environment

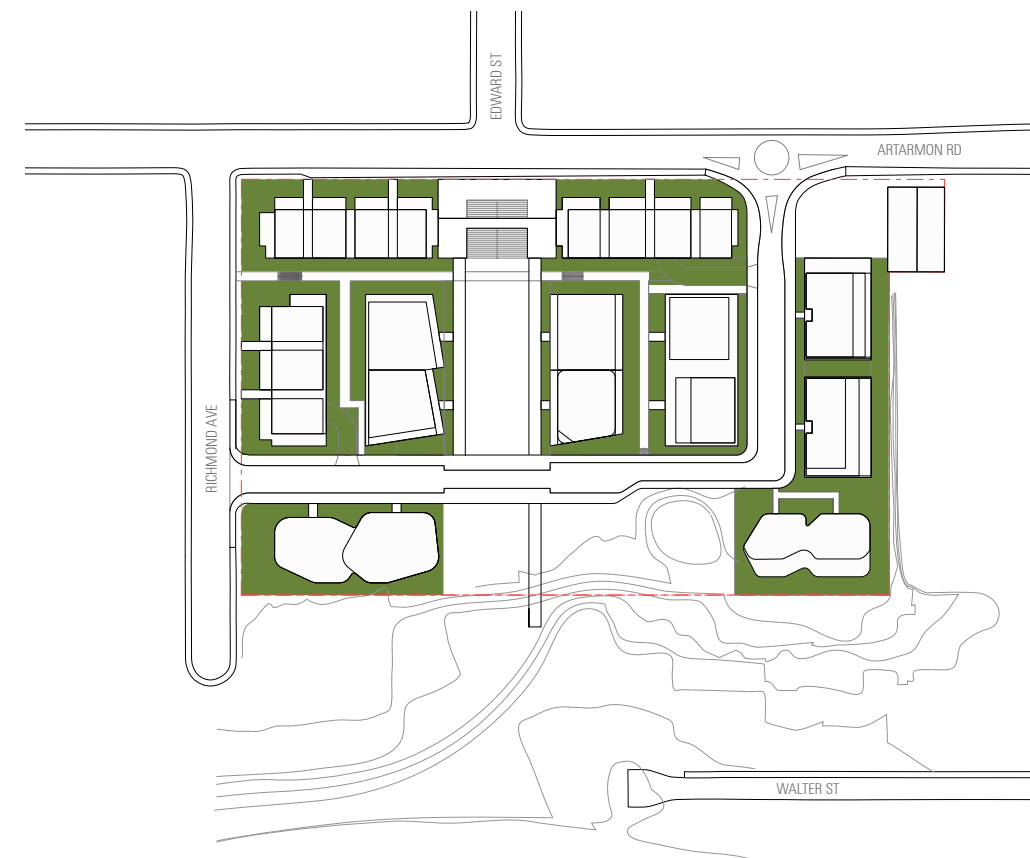
APPROVED SCHEME



PRIVATE GARDENS: 3629M²

THE ARRANGEMENT OF BUILDINGS CREATE AMBIGUOUS SPACES AND COMMUNAL GARDENS WITH LIMITED ACCESS. PUBLIC OPEN SPACE SUCH AS THE HELI PAD PARK IS ALSO DIFFICULT TO LOCATE AND ACCESS.

PROPOSED SCHEME



PRIVATE GARDENS: 5303M² (+ 46%)

LOGICAL BUILDING ARRANGEMENTS CREATE CLEAR DISTINCTIONS BETWEEN PUBLIC AND PRIVATE OPEN SPACE. ALL BUILDINGS ARE PROVIDED WITH GENEROUS GARDENS AROUND ALL SIDES.

5.7 LEGIBLE STREET GRID

A legible street structure helps the development to integrate into the surrounding community. This also ensures the modified development does not feel like a gated community, but rather another new place for the community.

APPROVED SCHEME



INCONSISTENT STREET GRID

DEAD ENDS AND MORE ROADS CREATE A STREET GRID WHICH IS INCONSISTENT WITH THE PATTERNS OF ROADS IN THE NEIGHBOURHOOD.

PROPOSED SCHEME



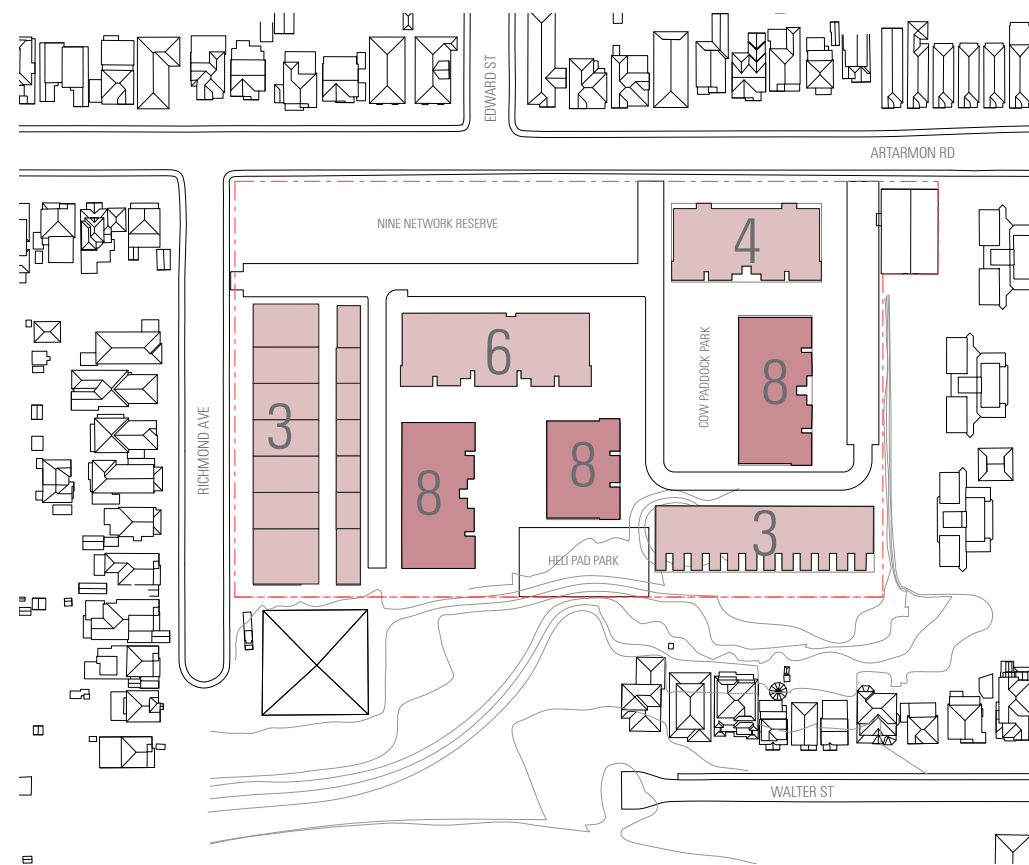
A NEW STREET THAT IS PART OF THE SUBURB

THE SCOTT STREET LOOP CREATES A BLOCK THAT IS SIMILAR IN SCALE TO EXISTING STREET BLOCKS IN THE AREA.

5.8 HEIGHTS

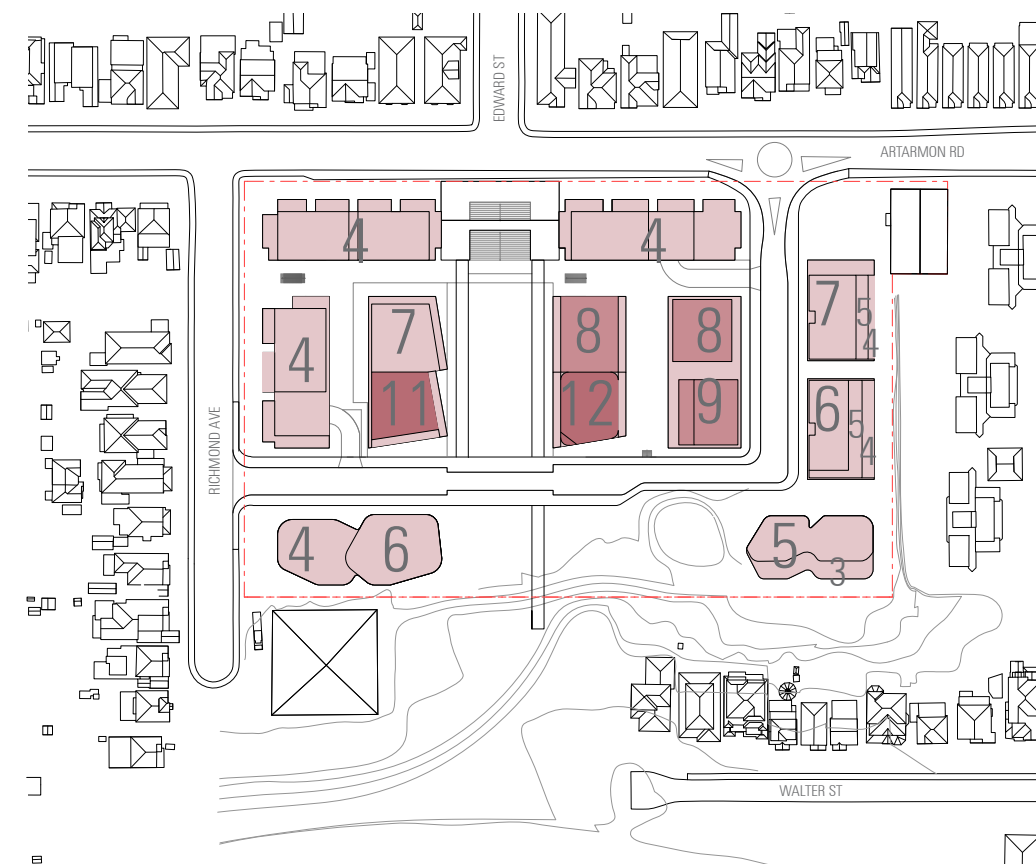
Building heights were assessed against their overshadowing impact and visual impact. Building heights noted reflect the number of storeys facing the street or main public open space. Only three buildings have been proposed above the approved 8 storey approved limit, with a maximum height of 12 storeys in one location. The towers are small in footprint to create a refined scale of building, and create the same, if not better solar access for neighbouring properties. Massing has also been carefully stepped down to the eastern boundary to reduce solar impact on Castle Vale.

APPROVED SCHEME



MAX 8 STOREYS

PROPOSED SCHEME

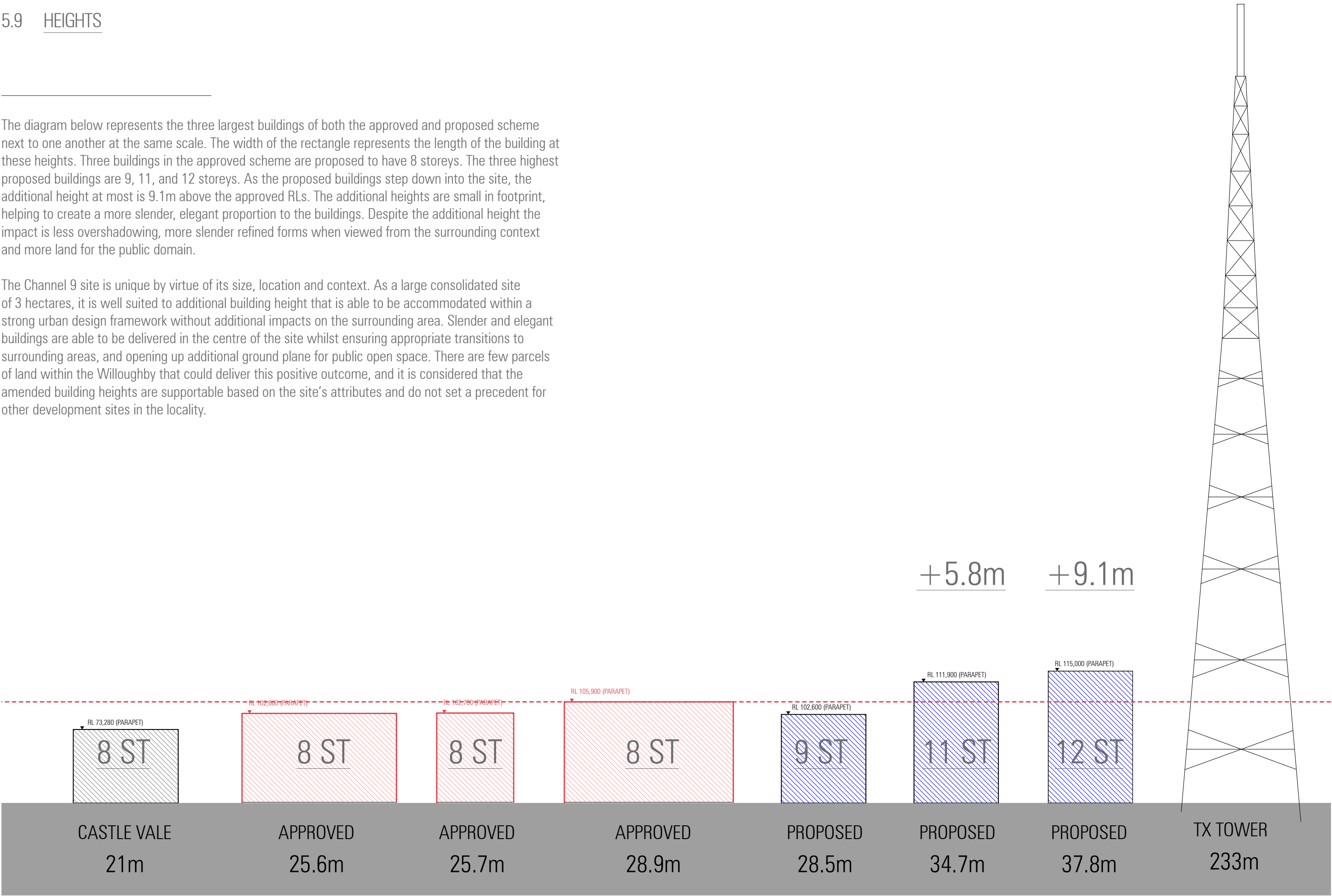


MAX 12 STOREYS

5.9 HEIGHTS

The diagram below represents the three largest buildings of both the approved and proposed scheme next to one another at the same scale. The width of the rectangle represents the length of the building at these heights. Three buildings in the approved scheme are proposed to have 8 storeys. The three highest proposed buildings are 9, 11, and 12 storeys. As the proposed buildings step down into the site, the additional height at most is 9.1m above the approved RLs. The additional heights are small in footprint, helping to create a more slender, elegant proportion to the buildings. Despite the additional height the impact is less overshadowing, more slender refined forms when viewed from the surrounding context and more land for the public domain.

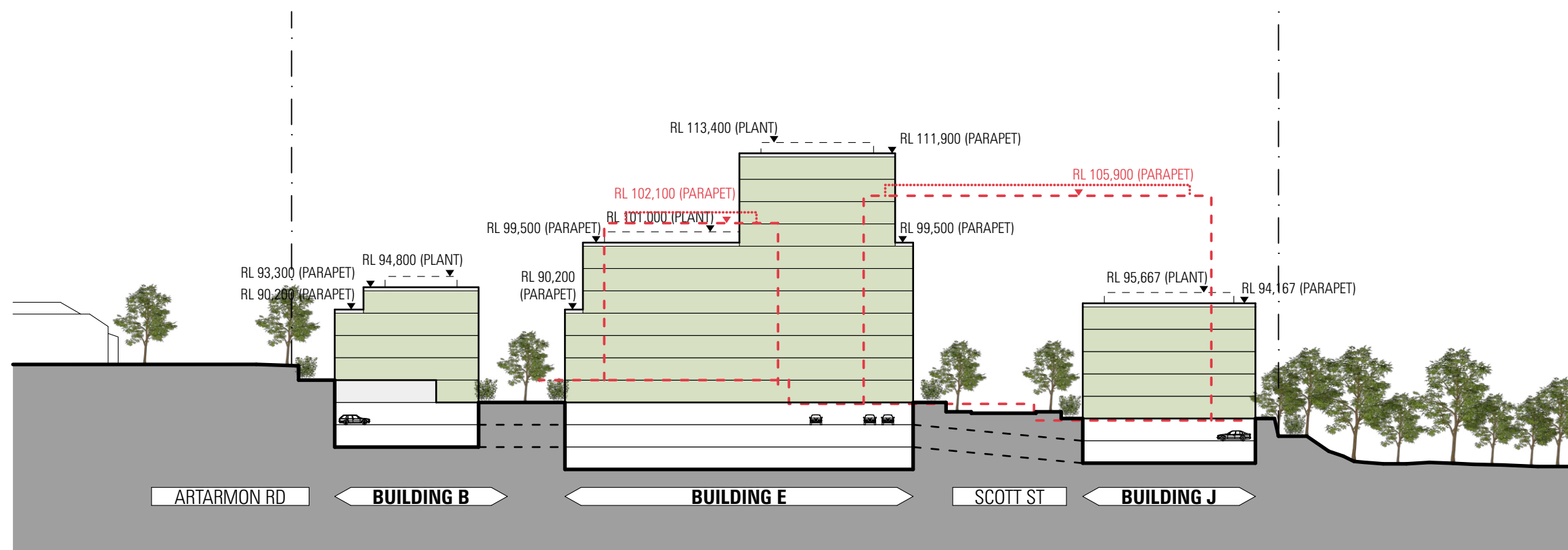
The Channel 9 site is unique by virtue of its size, location and context. As a large consolidated site of 3 hectares, it is well suited to additional building height that is able to be accommodated within a strong urban design framework without additional impacts on the surrounding area. Slender and elegant buildings are able to be delivered in the centre of the site whilst ensuring appropriate transitions to surrounding areas, and opening up additional ground plane for public open space. There are few parcels of land within the Willoughby that could deliver this positive outcome, and it is considered that the amended building heights are supportable based on the site’s attributes and do not set a precedent for other development sites in the locality.



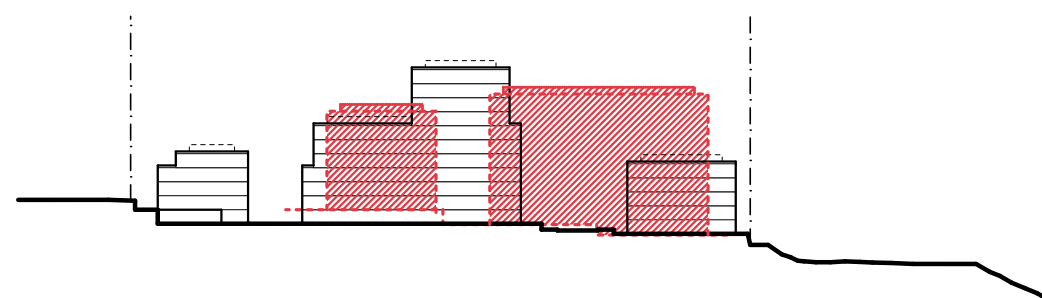
5.10 HEIGHT THROUGH BUILDING D

Building D has a proposed height of 11 stories. The proposed development steps the buildings down with the slope of the site to lower the overall building heights. As such, the proposed RL is 6m higher than the approved 8 storey building. The floor plate of the additional height is small with only 4 apartments per level. Additional height helps to create an elegant proportion to the buildings. The height is also moved away from the southern boundary to ensure an improvement in overshadowing impact for Walter St.

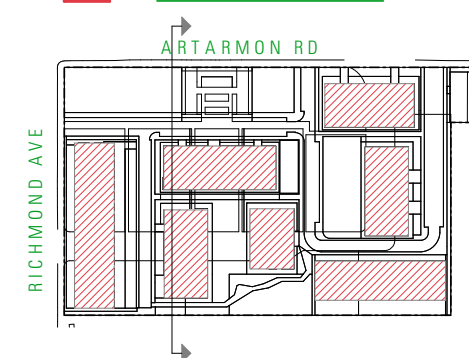
+ 6m IN HEIGHT (BETWEEN HIGHEST PARAPET RLs)
- WITH A SMALLER FOOTPRINT
- FURTHER AWAY FROM SOUTHERN BOUNDARY



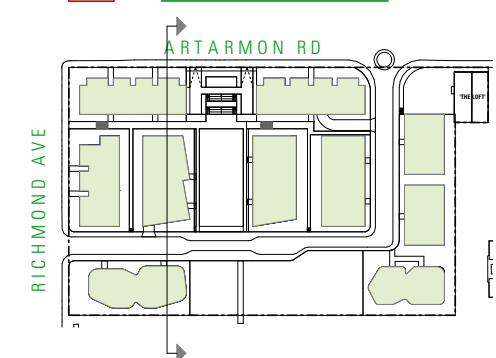
 ENVELOPE COMPARISON - APPROVED ENVELOPE



 APPROVED ENVELOPE



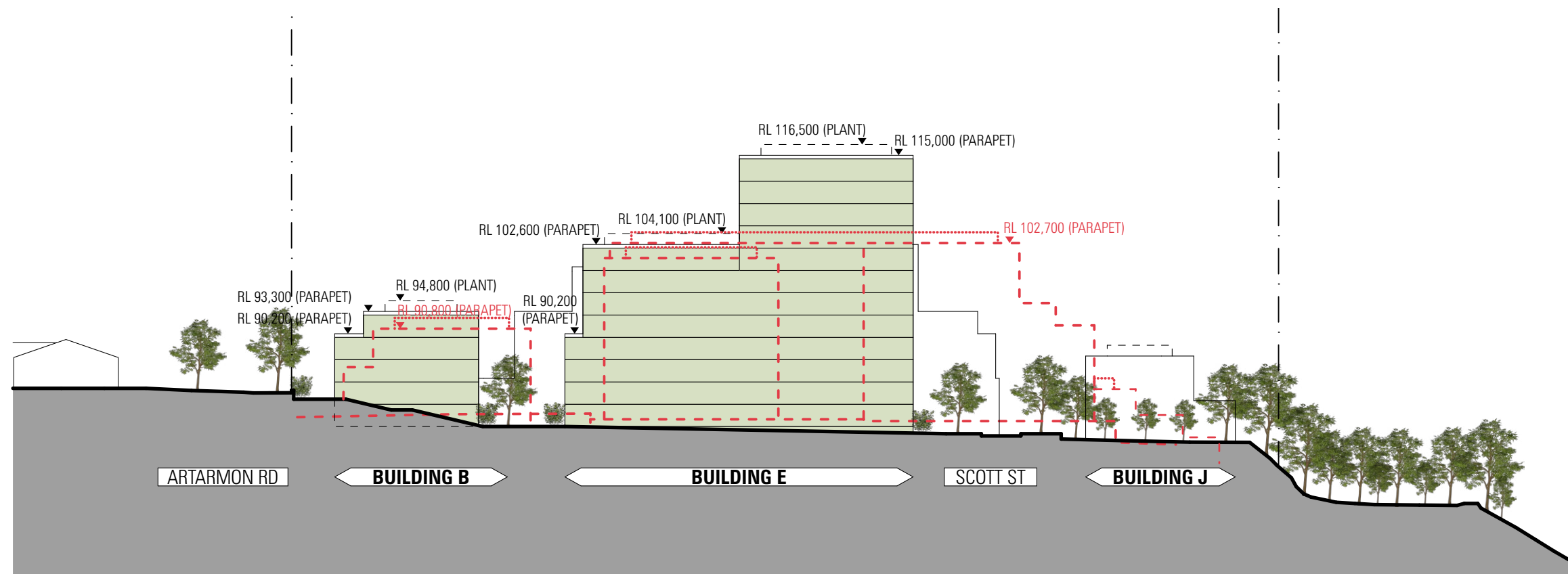
 PROPOSED ENVELOPE



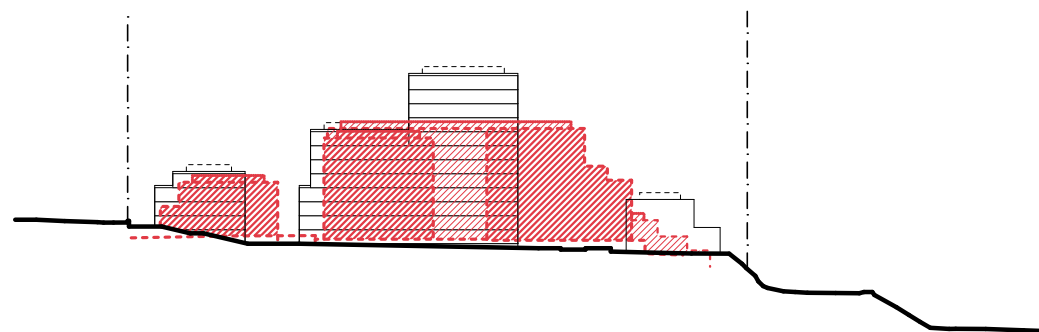
5.11 HEIGHT THROUGH BUILDING E

Building E has a proposed height of 12 stories which is 9.1m higher than the highest approved 8 storey building. The floor plate of the additional height is small with only 4 apartments per level. The height and bulk of the approved scheme is moved away from the southern boundary to create a park and playground for the public. The additional height results in an improvement in overshadowing for Walter St.

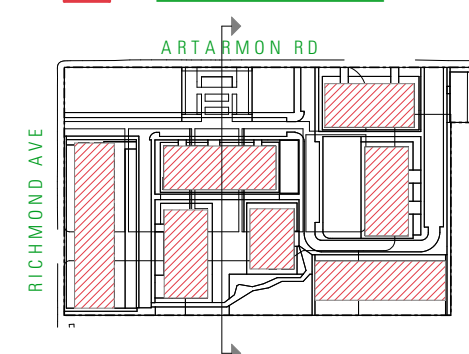
+9.1m IN HEIGHT (BETWEEN HIGHEST PARAPET RLs)
- WITH A SMALLER FOOTPRINT
- FURTHER AWAY FROM SOUTHERN BOUNDARY



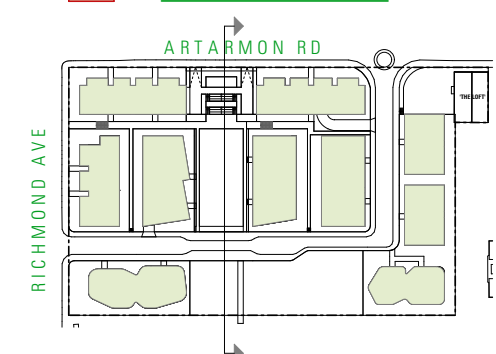
ENVELOPE COMPARISON - APPROVED ENVELOPE



APPROVED ENVELOPE



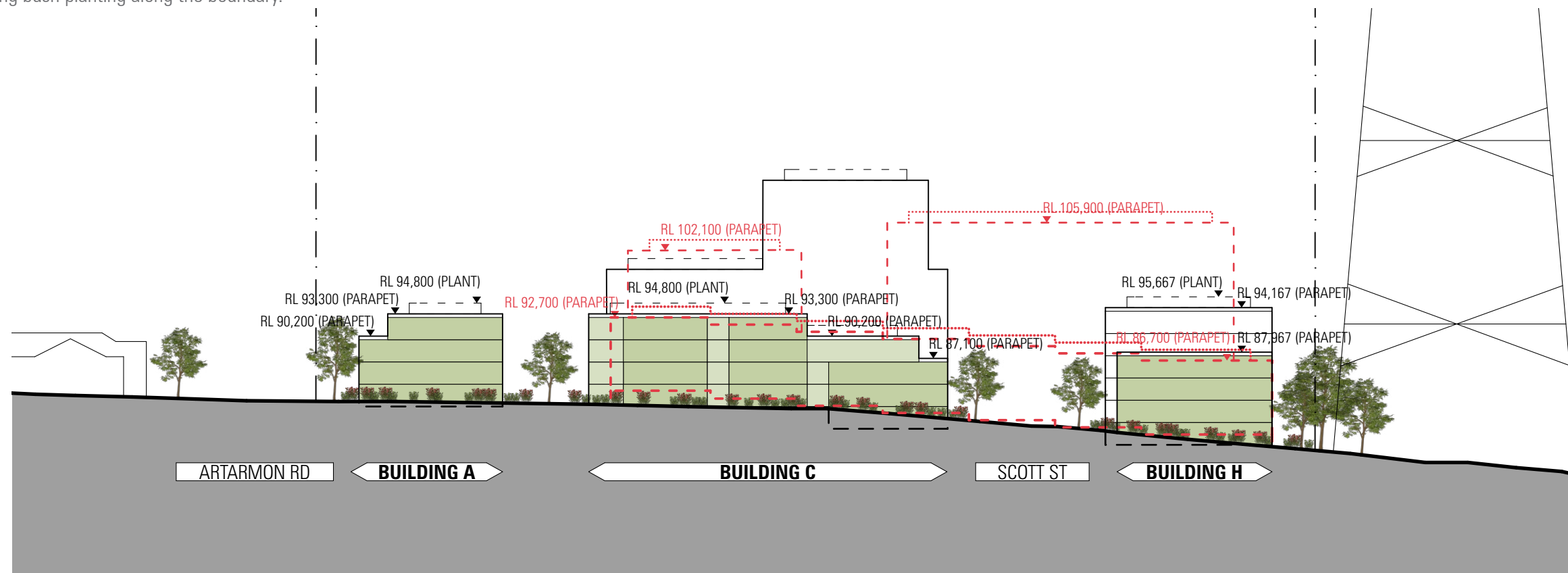
PROPOSED ENVELOPE



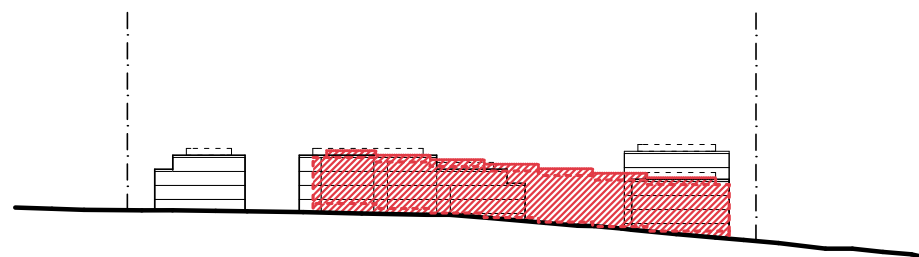
5.12 HEIGHT ALONG RICHMOND AVE

The Richmond Rd elevation has been carefully considered to respect the low scale residential buildings of the street, and to maintain the low scale development established by the approved terrace housing. The approved terrace housing stepped down with the street in an unrelenting form of 15 terraces. This mass has been broken down by the introduction of the new Scott Street. The proposed apartment buildings also step down with the site and are at most an additional 0.6m in height from the approved scheme RLs. In plan building H has been moved an additional 5m away from the boundary to a total of 10m. This will allow for a strong bush planting along the boundary.

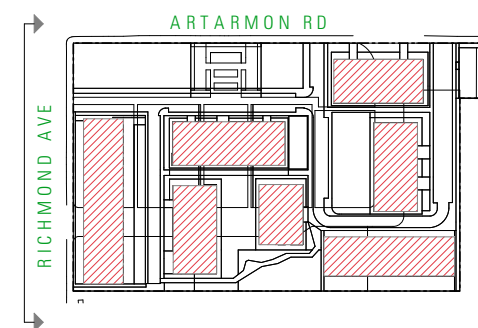
+0.6m IN HEIGHT
- SCALE OF MASS BROKEN DOWN WITH SCOTT ST



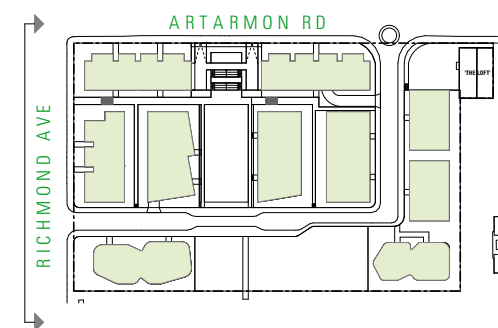
 ENVELOPE COMPARISON - APPROVED ENVELOPE



 APPROVED ENVELOPE



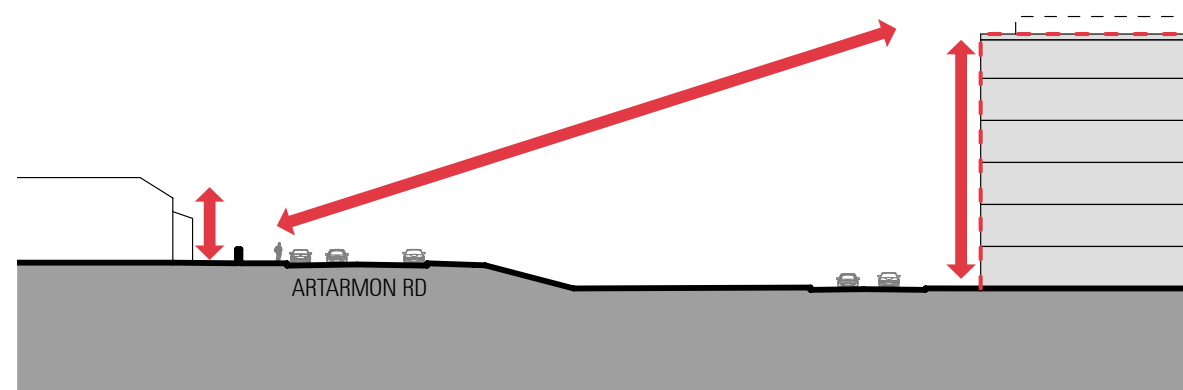
 PROPOSED ENVELOPE



5.13 ARTARMON RD SCALE TRANSITION

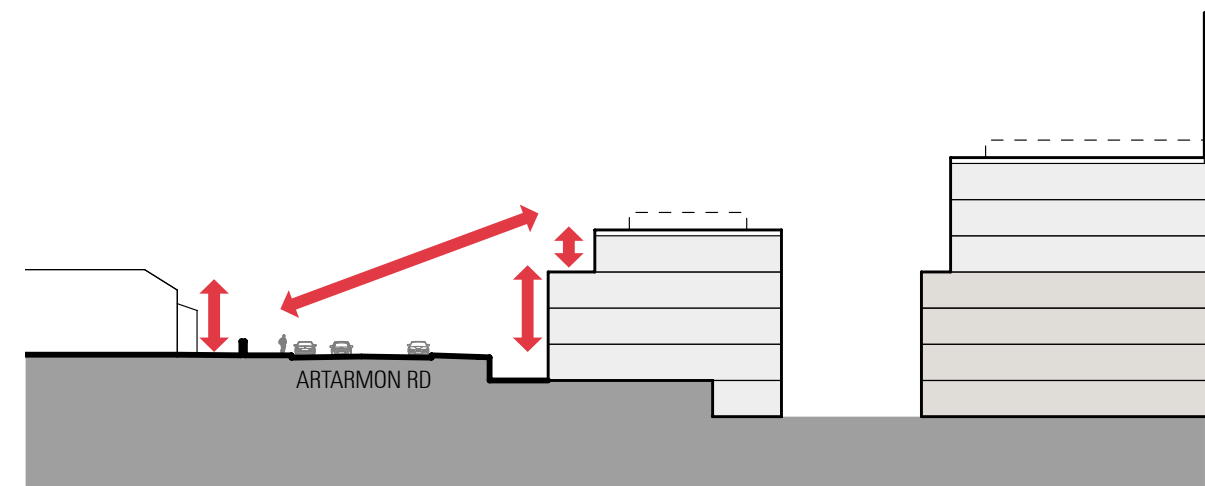
As discussed in detail, the proposed scheme offers a better transition in scale than the currently approved scheme. The respectful low scale built form edge to all streets offers a better result when viewed from Artarmon Rd and Richmond Ave. The scale of buildings more closely reflects the scale of existing houses and helps to complete the built form of the street.

APPROVED SCHEME



STARK CONTRAST IN SCALE OF BUILDINGS

PROPOSED SCHEME



COMPARABLE STREET SCALE

5.14 MASSING AND ENVELOPE COMPARISON



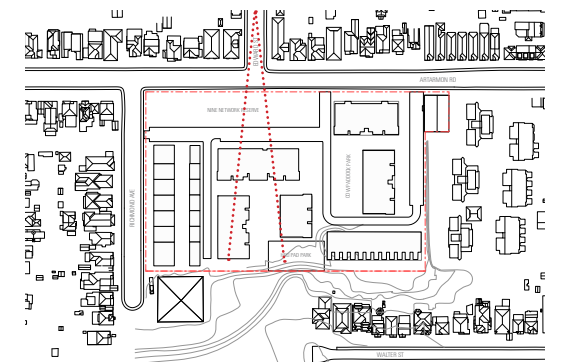
APPROVED VISUAL BLOCKAGE

The strong axis of Edward Street is reinforced rather than blocked by the proposed scheme. The street is extended into a park, allowing for views to St Leonards beyond as you walk or drive down Edward Street towards the site.



PROPOSED OPENING UP PUBLIC VIEWS

EDWARD STREET



5.15 MASSING AND ENVELOPE COMPARISON



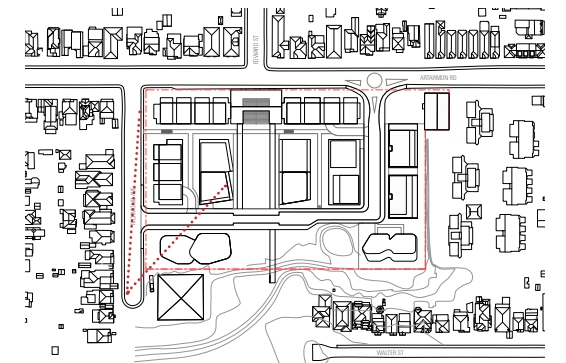
APPROVED

The approved built form on Richmond Ave has been given relief by the new Scott Street connection, whilst the top height on the proposed apartment buildings sits at a similar RL (see the Richmond Ave Elevation). The top RL of these low scale buildings is very close to the approved terraces (see architectural drawings), and the built form is articulated to step down with the fall of the street. The Bush Building has been pushed back into the site to allow for a greater setback and landscape screening.



PROPOSED

RICHMOND AVENUE



5.16 MASSING AND ENVELOPE COMPARISON



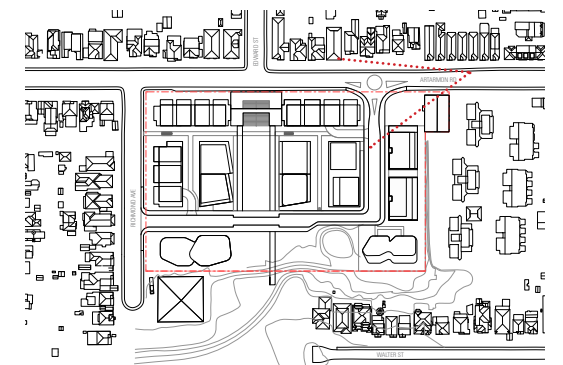
APPROVED

The realignment of Scott Street to the west creates a new public plaza on Artarmon Road. The massing of the Street Buildings therefore moves up the street. Vertical articulations in the massing ensure that building heights remain relative to the steep topography of Artarmon Road



PROPOSED

ARTARMON ROAD



5.17 MASSING AND ENVELOPE COMPARISON

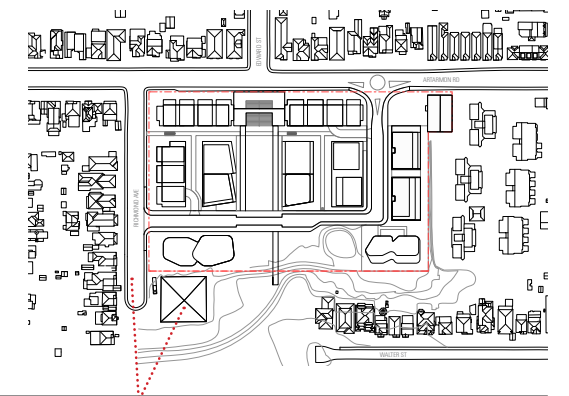


APPROVED

Careful attention has been paid to create more slender buildings which crest with the ridgeline and step down towards each boundary. This ensures that the buildings look more aligned with the natural topography, especially when viewed from a distance. The additional height has minimal impact, yet helps to create more slender towers with more sky and visible trees in between. The central park creates a strong break in the built form.

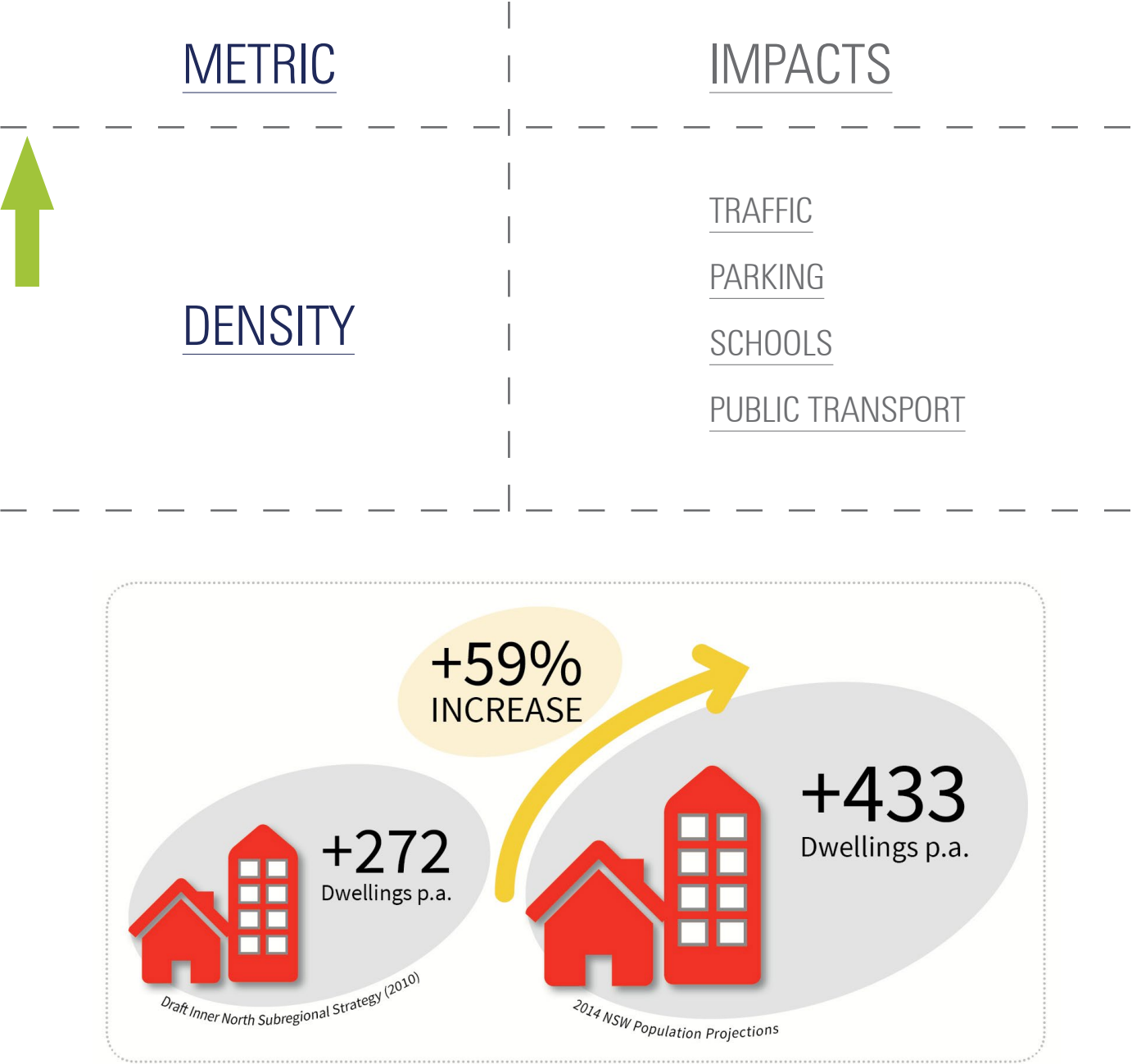


PROPOSED



5.18 DENSITY

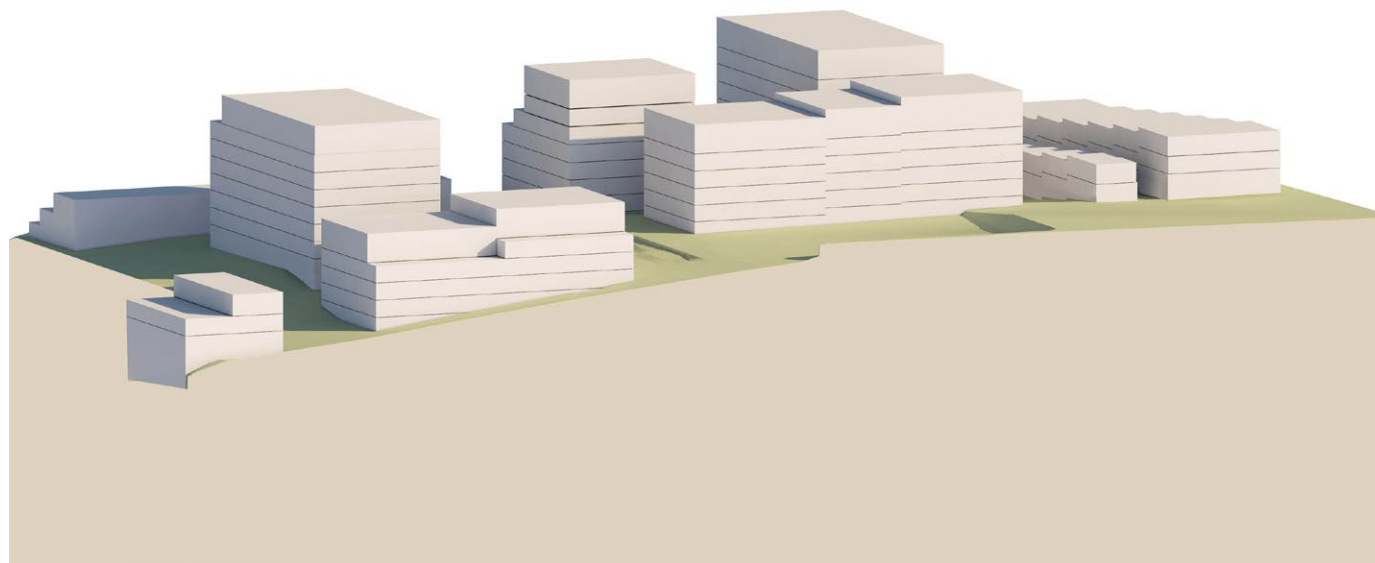
Density and the proposed additional 110 apartments have been assessed against their impact on traffic, parking, school and access to public transport both within this report and the JBA planning report. This proposal seeks additional density from the approved scheme by showing the site is suited to increased density without creating additional impacts on the surrounding community. Each of these impacts will be assessed in the coming pages.



5.19 DENSITY

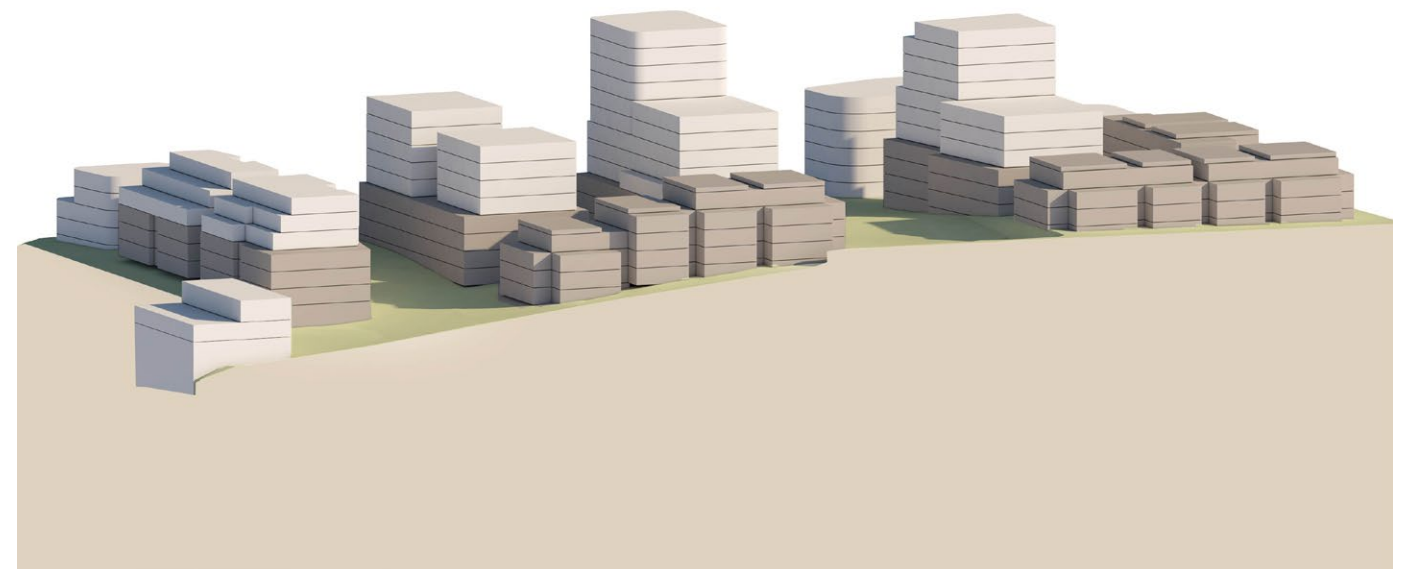
Despite a reduction in bulk, visual impact and overshadowing, the proposed massing allows for an additional 110 apartments, without additional impacts. The resultant FSR is 1.5:1.

APPROVED SCHEME



400 APARTMENTS
FSR: 1.2:1

PROPOSED SCHEME



510 APARTMENTS
FSR: 1.5:1