

Client: Homes Victoria
January 2022

Project Number: 2594

Redbrick Towers

20 Elgin Street, & 141 Nicholson Street, Carlton

Feasibility Study & Option testing

Revision 2



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01 Site
01 Aerial



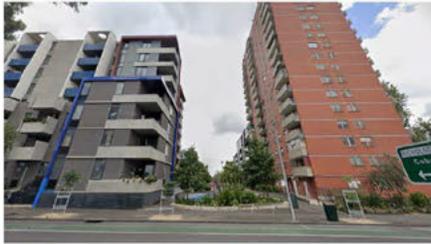
The site is located on the corner of Elgin and Nicholson Street in Carlton, and forms part of a development agreement undertaken with 'Frasers'.

The overall site that has been largely redeveloped by Frasers except for the areas marked 20 Elgin Street, 141 Nicholson Street, and Frasers Development. Frasers has previously developed private dwellings on the site and a new public building. A new private building will be constructed on the corner of Elgin and Nicholson Streets.

Built in the late 1960's the two 'red-brick' high-rise towers on 20 Elgin Street and 141 Nicholson Street have been retained under the development agreement with Frasers as public housing with existing tenants; each one of those towers contain 98 units over 16 storeys. It appears that Frasers Development has broken ground on the 15th of December 2021 and will commence construction soon.

01 Site

02 Urban context



01 ELGIN ST, PLAYGROUND ENTRANCE



02 ELGIN ST, EAST VIEW



03 NICHOLSON ST, PLAYGROUND ENTRANCE



04 NORTH EAST CORNER OF SITE



05 PALMERSTON STREET PLAYGROUND



06 SOUTH WEST CORNER OF SITE



07 PALMERSTON ST, SOUTH VIEW



08 CORNER OF ELGIN ST AND CANNING ST



09 SHOPFRONT VIEW DOWN JOHNSTON ST

02
The built form to the west (30 Elgin Street Carlton) has a 4 storey street wall constructed to the boundary

06
The built form to the west (15-23 Palmerston Street Carlton)

03
The built form to the east, on the opposite side of Nicholson Street is 1-2 storeys high and commercial in use. Building types are varied with some constructed to the boundary.



02 Brief

01 Homes Victoria Approved Space Assumptions

Dwelling Type	NSA	GFA (NSA + Circulation)	Balcony + Condenser Space	GBA (GFA + Balcony)	MIX
1 Bed	55m ²	73m ²	9.5m ²	82.8m ²	52.5%
1 Bed DDA	73m ²	97m ²	9.5m ²	106.8m ²	2.5%
2 Bed	75m ²	100m ²	9.5m ²	109.5m ²	27.5%
2 Bed DDA	83m ²	111m ²	9.5m ²	120.2m ²	2.5%
3 Bed	100m ²	133m ²	13.5m ²	146.8m ²	15%

*NO CAR PARKS TO BE PROVIDED AS PER BRIEF

Project Brief

Site will be developed / redeveloped with 0 new carparking spaces, regardless of yield.

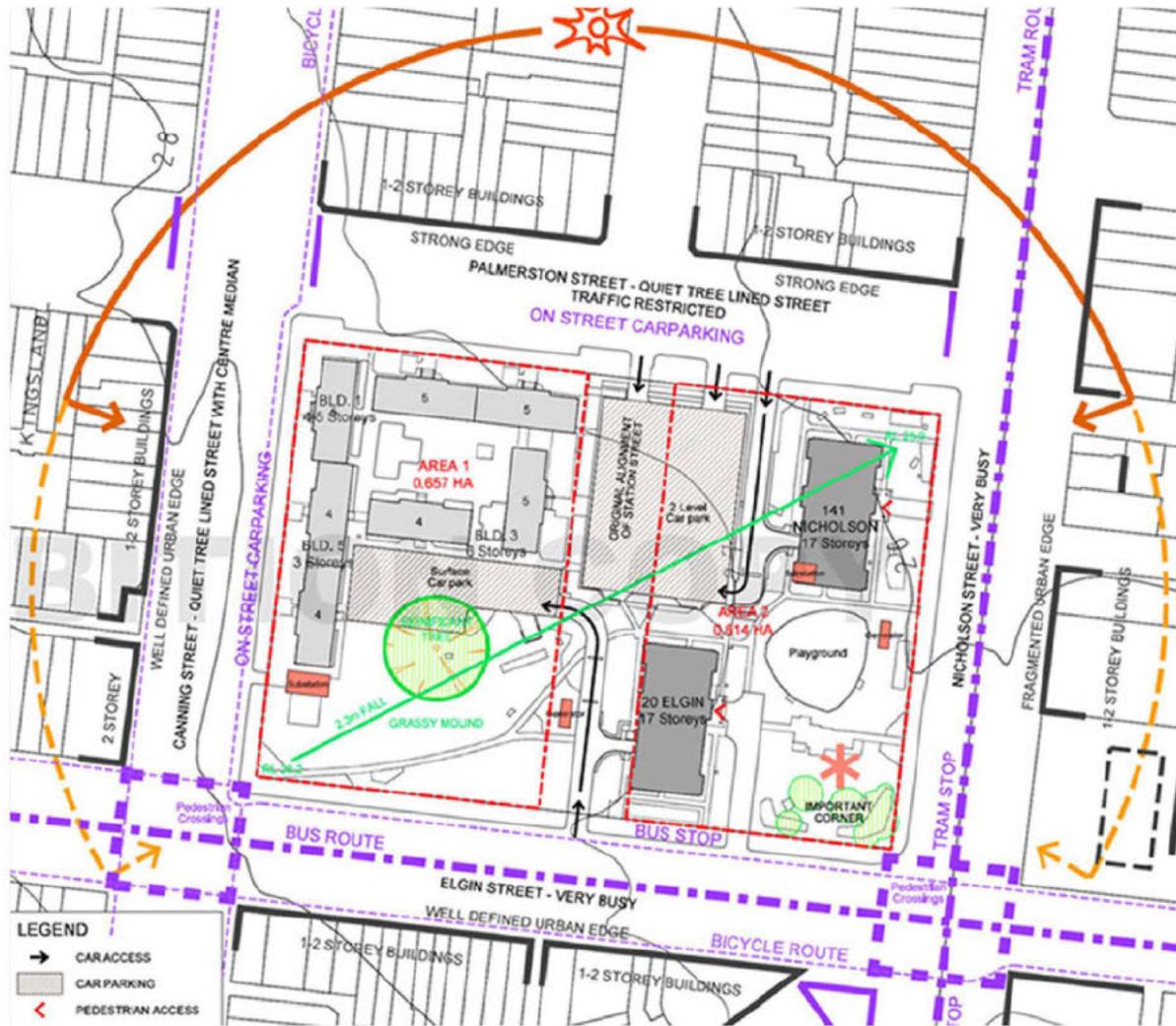
For all scenarios, it is essential to maximise yield of total number of accommodation units with the strong preference to at least retain the existing 98 units per tower.

The project should recognise opportunities and constraints on all options presented for each scenario. Currently no on-site parking is provided.

02 Brief

02 Homes Victoria Framework

NB: content has been extracted from the Framework



Site Opportunities

The redevelopment of this precinct offers excellent opportunities to integrate the precinct into its surrounding area. These include:

01. The opportunity to reinstate Station Street, splitting the precinct into urban blocks of a similar size to those nearby an increasing the permeability of the site
02. Demolition of the existing walk-up building will create the potential to better address the surrounding streets
03. Define new built form edges to site and highlight corner elements. Carlton generally has strong street frontages, and the opportunity to reinstate these on the site should be maximized
04. Optimise solar penetration to buildings and open space. The require densities and building heights present challenges in terms of achieve optimum solar access.
05. Address the safety and security issues that currently exist due to the poorly defined open spaces

- Car Access
- ◻ Car Parking
- > Pedestrian Access
- Traffic Restrictions
- 2 Building Heights
- Urban Edges
- - - Bus Route
- Winter Sun
- - - Summer Sun

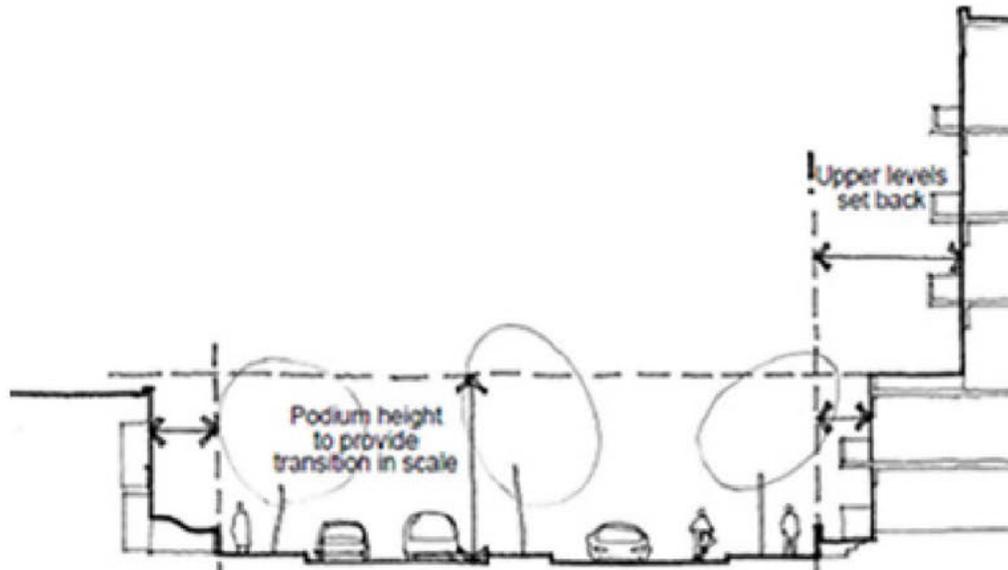
20m



02 Brief

02 Homes Victoria Framework

NB: content has been extracted from the Framework



- 1.1 Use the building forms to mediate the scale of the existing towers that are being retained on the Lygon / Rathdowne and Elgin / Nicholson Precincts



- 1.2 Establish setbacks for the upper levels of taller buildings to reduce the perceived height at the street edge and to provide a transition in scale from surrounding neighbourhood.

Provide an appropriate transition in the building height between the surround neighbourhood and the higher density precincts

- Use new building forms to make a transition between the existing towers that are being retained on the Lygon / Rathdowne and Elgin / Nicholson precincts and the adjacent context (Ref. to diagram 1.1)
- Provide buildings of a height that is generally consistent with the existing walk-up apartments, and appropriate to the context. Greater height can be provided adjacent to existing towers and main roads where its impact is limited

Create a composition of varied building forms across the precincts, in keeping with the neighbourhood character of Carlton

- Use balconies as positive additions of negative elements in walls to achieve a variety of articulation between buildings.
- Express the corners of buildings that are on street corners.

Reduce the impact of building bulk on existing neighbourhood and on street quality. Maintain the pedestrian scale of residential streets

- Establish setbacks for the upper levels of taller buildings to reduce the perceived height at street level and to provide an appropriate scale to the street. (Ref. to diagram 1.2)
- Establish a zone one buildings to allow a variety of form to be introduced to reduce the perceived bulk.

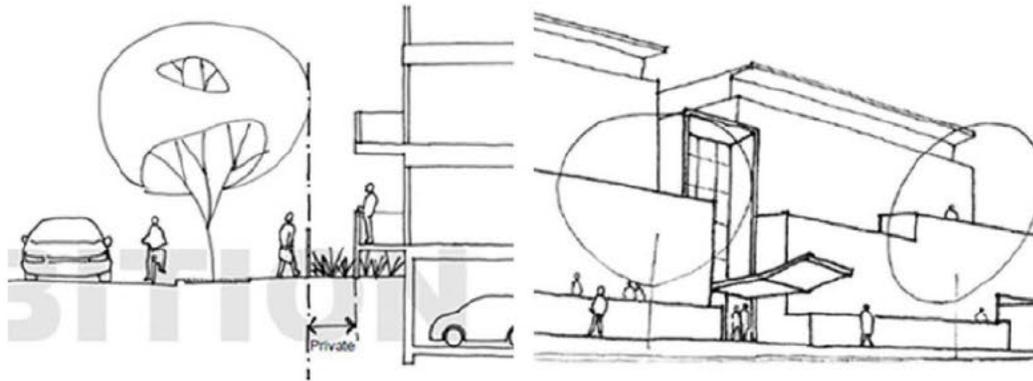
Create buildings which respect the grain of the existing neighbourhood

- Use devices such as balconies, bay windows and sun rooms to articulate the building form to achieve buildings of similar grain to the existing context.
- When streets are a continuation of existing residential streets, provide front yards with open front fences and landscaped entry courts

02 Brief

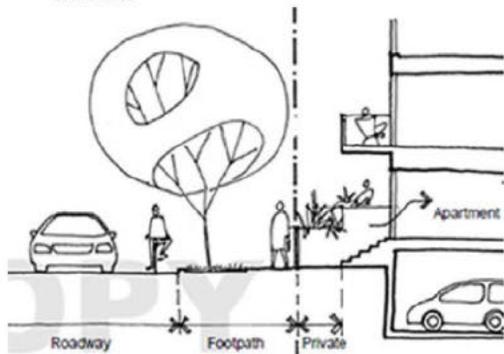
02 Homes Victoria Framework

NB: content has been extracted from the Framework

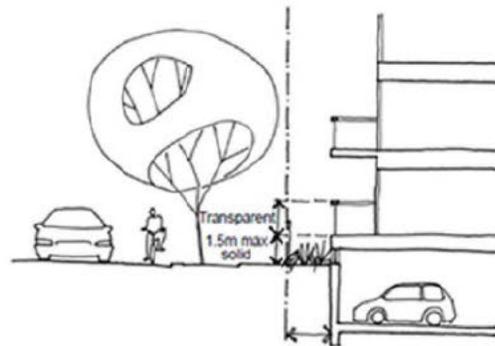


2.1 Delineation
Provide a clear delineation between public and private realms at street level.

2.2 Defined Entrances
Clearly define building entrances / addresses.



3.1 Ground Level Apartments
Provides ground level apartments with entrances directly from the street.



3.2 Semi-Basement heights
Ensure that buildings with semi-basement car parking have solid walls of no more than 1.5m in height at street level.

Address streets in a manner in keeping with the character of surrounding streets

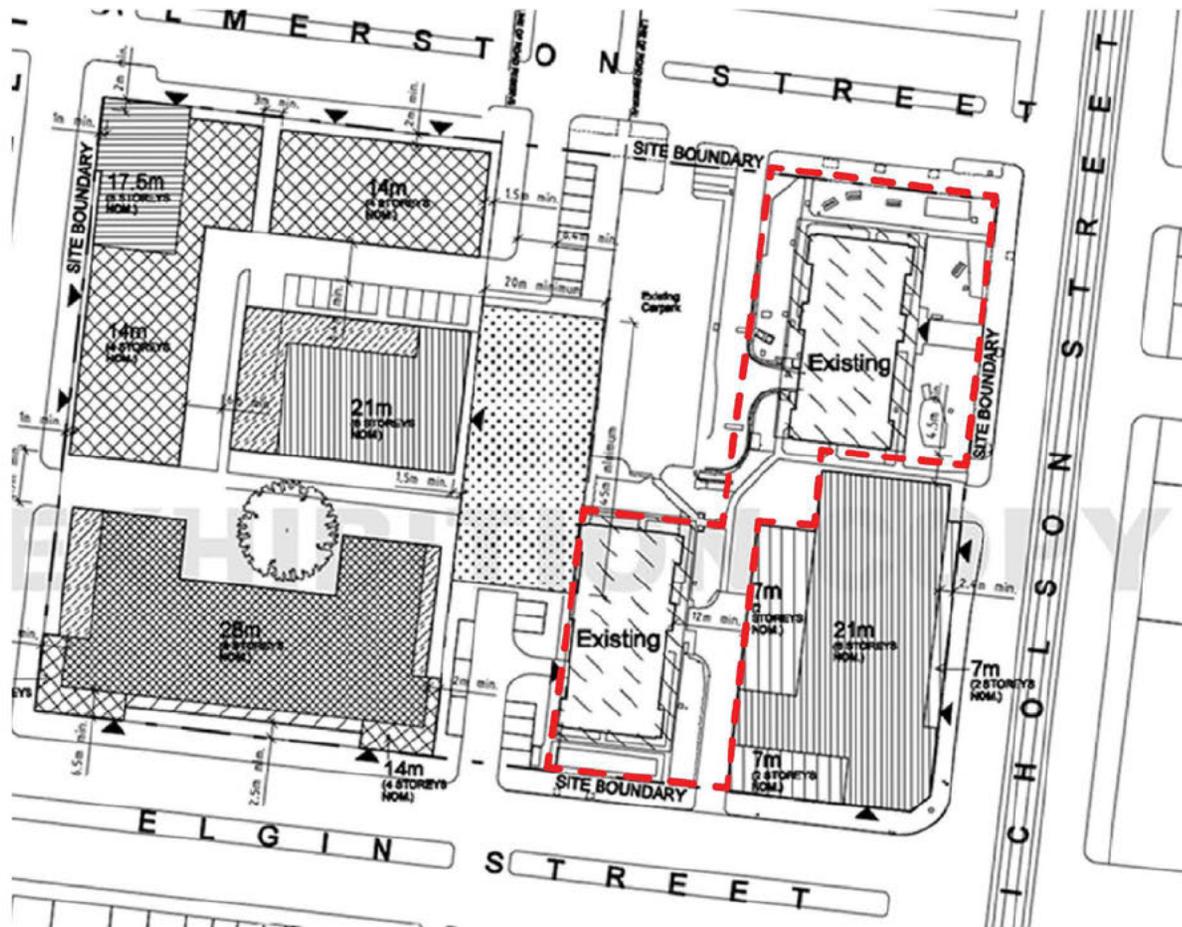
- Generally align building edges parallel with the streets
- Buildings are to contribute to the re-establishment of streets by a considered approach to architectural composition and a diversity of form and mass.
- Provide a clear delineation between public and private realms at street level. (Ref diagram 2.1)
- Clearly define building entrances / addresses. (Ref diagram 2.2)

Maximize building connection to the public streets

- Provide all new residential addresses from the street of public footpath.
- Provide ground level apartments with entrances directly from the street (Ref diagram 3.1).
- Ensure that buildings with semi-basement car parking have solid walls of no more than 1.5m in height at street level (Ref Diagram 3.2)

02 Brief

02 Current Context



Background Context

A structural report has recommended that the towers will remain structurally sound for another 50 years. However there are considerable issues with the failure of the sewer stacks in each tower, which require immediate attention, to the extent that existing tenants of both buildings are currently being relocated to allow the repairs to take place.

With both the red-brick towers vacant, there is opportunity to reassess whether Homes Victoria should carry out:

- A full (standard) upgrade alongside the repairs; seek to remodel - reconfigure internal elements of the structures to meet current and emerging unit size demand and bring units up to current Building Regulations and department standards

- Redevelop - demolish the towers and replace with new buildings.

In both scenarios, there is desire to at least retain the existing 98 units public housing yield in each of the buildings and increase it if possible.

It is noted that in a redevelopment scenario, floor to floor heights are around 3.15m compared to 2.6m in the existing buildings.

The towers currently integrate poorly with the street frontages and this would be an opportunity to create more active and attractive frontages.

Homes Victoria initially sought consideration of a third option; to carry out a full upgrade and extend the ground floors of each tower to the site boundaries, but early investigations concluded that this was not feasible.

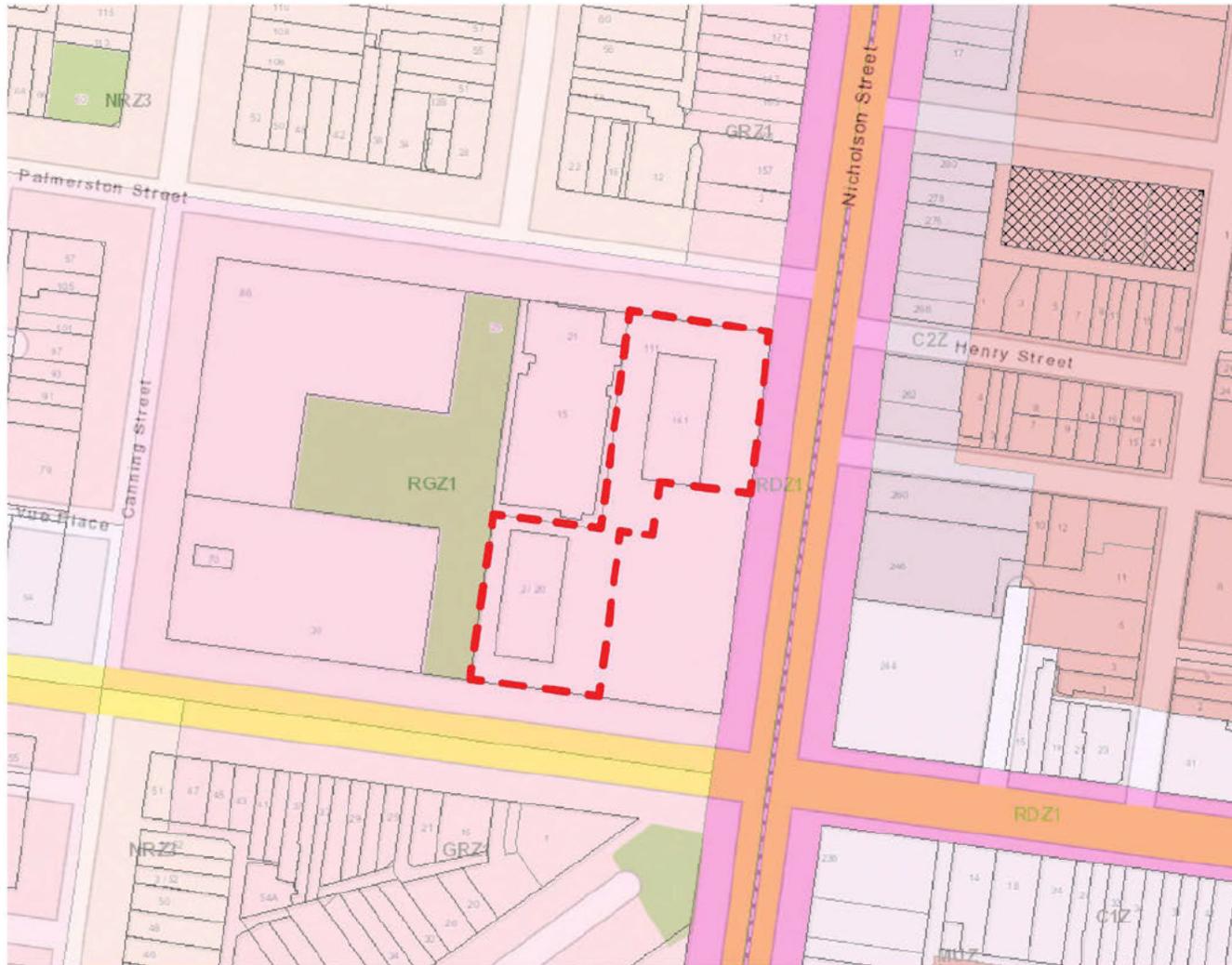
- Existing
- Carparking
- Property boundary

Not to Scale



02 Brief

03 Zoning Considerations



Background Context

— Zone – Residential Growth Zone (Schedule 1). Abuts a Road Zone, Category 1 (Nicholson Street).

Banked building footprints for Redevelopments

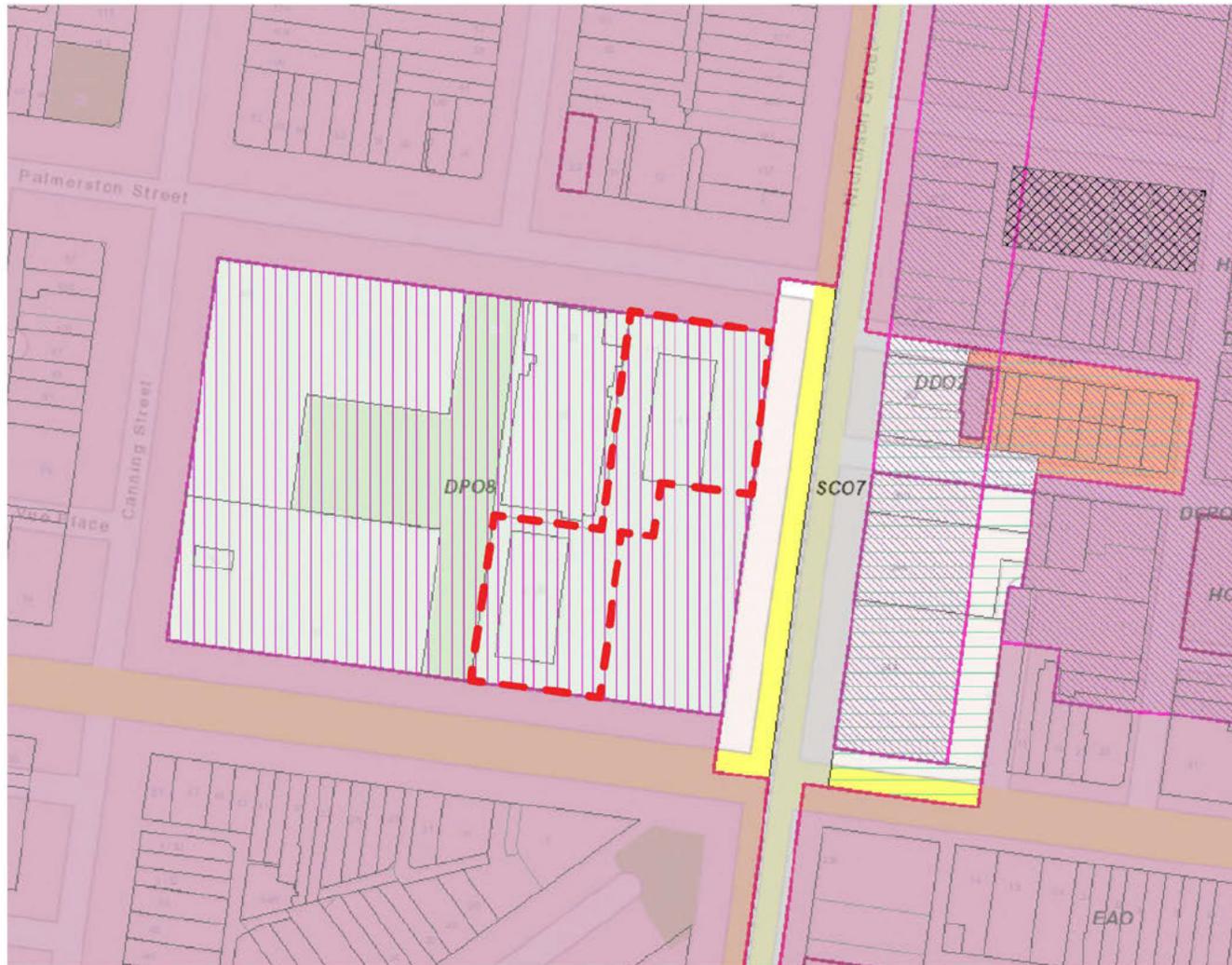
— Pursuant to the Residential Growth Zone (Clause 32.07-9) the maximum building height is 13.5m

- C1Z - Commercial 1
- MUZ - Mixed Use
- RGZ - Residential Growth
- C2Z - Commercial 2
- NRZ - Neighbourhood Residential
- GRZ - General Residential
- RD21 - Road - Category 1



02 Brief

04 Planning Considerations



Background Context

- Development Plan Overlay - Schedule 8 (Carlton Housing Precincts) & Parking Overlay (Precinct 12).
- Abuts a Heritage Overlay 1 (Carlton Precinct) - on Elgin Street and Palmerston Street.
- Abuts a Specific Controls Overlay 7 and Design and Development Overlay 2 (Main roads and boulevards)
- Design and Development Overlay 40 (Fitzroy West - preferred building height 24m) on Nicholson Street.
- Principal Public Transport Network Area
- An extension to an existing building may exceed the maximum building height specified in a schedule to this zone if it does not exceed the building height of the existing building.
- A transition in height is called for between the towers to the west (now developed) and east (currently vacant).

Requirements of exceeding height limitations

- It replaces an immediately pre-existing building and the new building does not exceed the building height of the pre-existing building.
- There are existing buildings on both abutting allotments that face the same street and the new building does not exceed the building height of the lower of the existing buildings on the abutting allotments.
- It is on a corner lot abutted by lots with existing buildings and the new building does not exceed the building height of the lower of the existing buildings on the abutting allotments.

-  DPO - Development Plan
-  DDO - Design and Development
-  HO - Heritage
-  DCPO - Development Contributions Plan
-  SCO - Specific Controls
-  EAQ - Environmental Audit

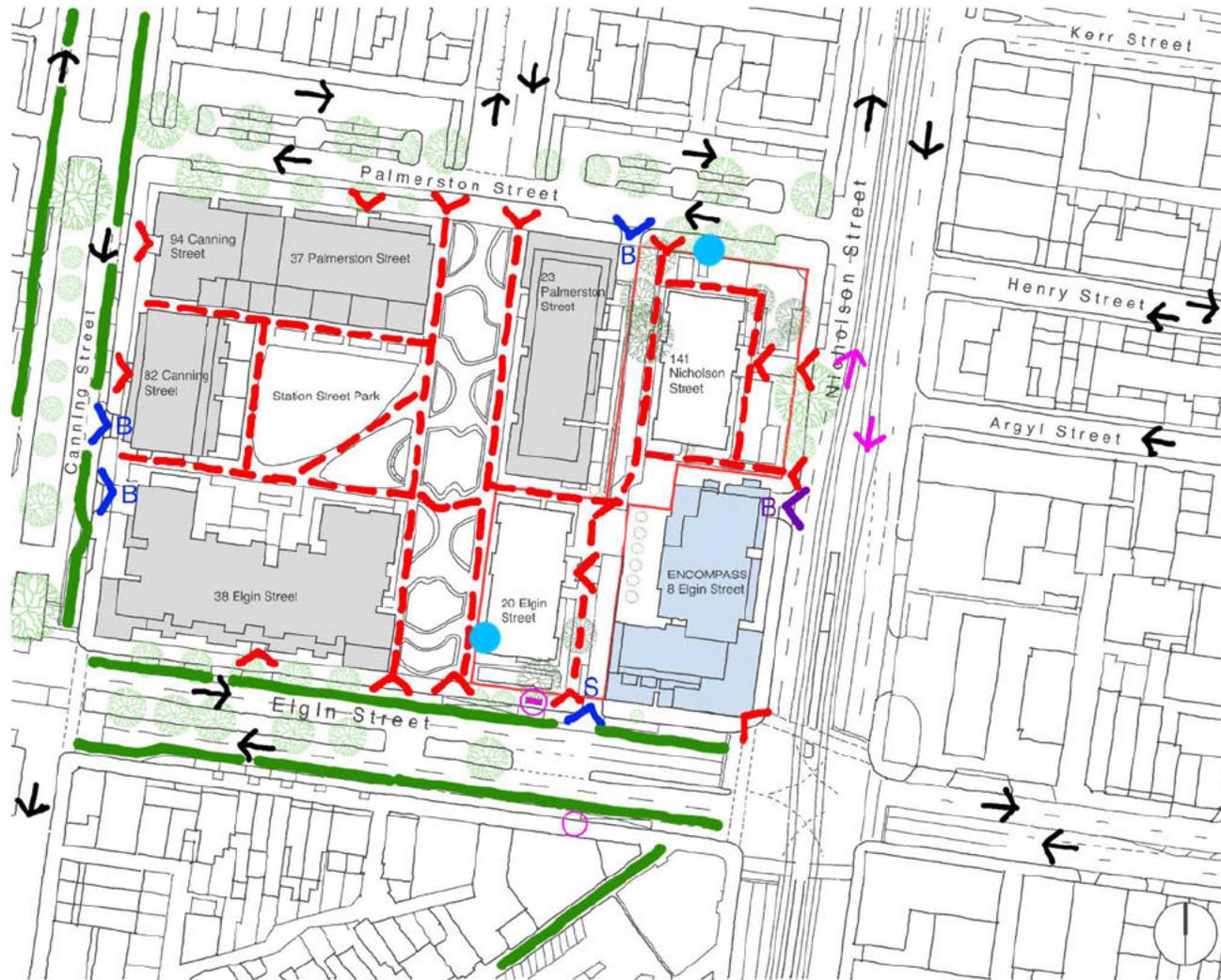
Option A:

Floor Plate Reconfiguration

A reconfiguration of internal areas and units to improve building environmental performance (e.g. cross ventilation), including advice as to whether it is possible to reconfigure the floor plate to accommodate a smaller unit mix and space for a washing machine in each new unit.

03 Existing Conditions

01 Network & Access



This diagram illustrates the existing pedestrian network through the urban block, the building entries, vehicles cross overs and waste collection point. The traffic direction is also indicated on surrounding roads and tram circulation along Nicholson Street. The diagram also shows the proposed Encompass development at 8 Elgin Street.

Any redevelopment needs to consider maintaining or replacing the existing vehicle drop off and service access points to surrounding buildings and existing playgrounds and external communal areas

- Site + Building Entry Points
- Vehicle Entry Points:
 - [B] Basement
 - [S] Surface
- Dedicated Bike Lanes
- Tram Route
- Bus Stop
- - - Public Pathways
- Garbage Collection
- Traffic Direction



03 Existing Conditions

02 Amenities & Facilities



- The redevelopment needs to consider maintaining or relocating existing facilities and external amenities on site such as playgrounds, community garden.
- New internal networks need to maintain access to existing office and community facilities within the development.
- Where external communal spaces are relocated, consideration should be given for solar access.

- Site Boundary
- Station Street Park and "Play Street"
- Play Facilities
- Community
- Future COS Encompass



03 Existing Conditions

03 Constraints



Site Constraints

- Traffic noise from surrounding streets the built form should be designed and built to protect internal areas of the site.
- New development will need to consider overshadowing from existing tower buildings.
- The future redevelopment will need to consider amenities from existing towers.

This diagram illustrates some of the constraints of the site including the adjacent views from existing and proposed buildings, the cast shadows of these buildings onto the Ground plane and possible services relocation. The diagram also shows the proposed Encompass development at 8 Elgin Street.

NB: Indicative shadow impacts are indicated below. Please refer to detailed shadow diagrams for Estimated Equinox and Winter Sun Shadows Diagrams

- Site Boundary
- Avoid excessive overshadowing to extg. "play street"
- Site Overshadowing from existing buildings (shadows shown are diagrammatic only)
- Protect daylight + view amenity of existing dwellings
- Existing HV cable + substation

0m 50m



03 Existing Conditions

04 Existing Landscape



This diagram illustrates the existing landscape of the urban block including street trees. Trees number 2 and 3 have been identified as significant in the arborist report and should be preserved. Tree number 7 is identified as a poplar (introduced species) and has medium to low retention value.

The redevelopment will propose a built form that will respond to the surrounding context.

Further assessment of the quality of impacted trees will be required by a qualified arborist.

- Site Boundary
- Likely tree retention off site
- Low Value Trees on site

Tree values and retention to be established by arborist survey

0m 50m

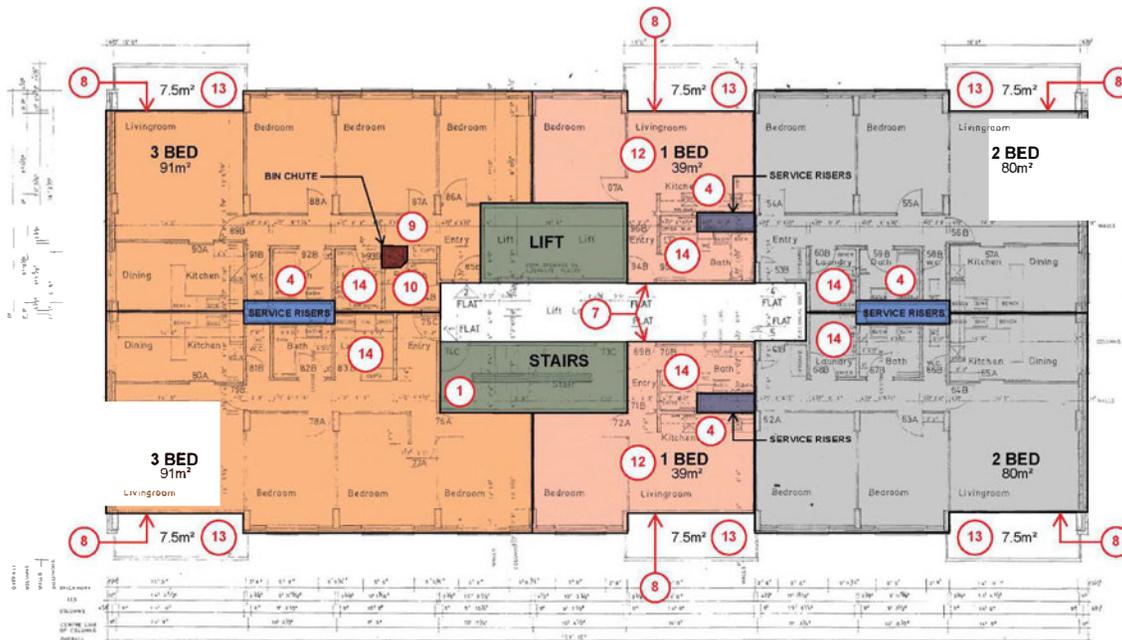
Likely tree retention off-site

Low Value Trees on site

Tree values and retention to be established by arborist survey

03 Existing Conditions

05 Floor Plan Analysis



- Communal Area
- Circulation
- Service Risers
- 1 Bed Unit
- 2 Bed Unit
- 3 Bed Unit

BUILDING REGULATION NON-COMPLIANCES

FIRE SERVICES

- The fire stair widths are below the required 1000mm clear & handrail profile is not compliant. The clearance between the handrail and the wall is currently 927mm. Each stair flight needs to be widened by 73mm to be compliant.
- The concrete floor slab is approximately 150mm thick. A 200mm thick slab is needed to provide the required fire rating between floors
- The balconies are not fitted with sprinklers

MECHANICAL & HYDRAULIC SERVICES

- The service risers currently house the hot & cold water, sewer and acts as the exhaust duct for the kitchen, bathroom, WC & laundry. The risers are inaccessible from the lift lobby. This arrangement is non compliant. Each service needs to be in a dedicated riser with the appropriate acoustic and fire rating. The hydraulic risers need to be accessible from the lift lobby.

ACOUSTICS

- The concrete floor slab is approximately 150mm thick. A 200mm thick slab, acoustic underlay to floor finishes and/or acoustic insulation within the ceiling space are needed to provide the required acoustic rating between floors.

STRUCTURE

- The structure needs to comply with the current earthquake code. Further analysis is needed by a qualified structural engineer to determine compliance

OTHER

- All apartment doors are 780mm in width. Doors need to be 850mm clear to be DDA the compliant solution.
- There is no hob or slab set down between the balcony and living room. A hob or a set down is required for waterproofing
- The current bin chute is too small for domestic waste. No allowance for separation of recyclable & general waste. The council requires waste to be separated
- The dryer fitted in the bin room on each floor could present a fire hazard

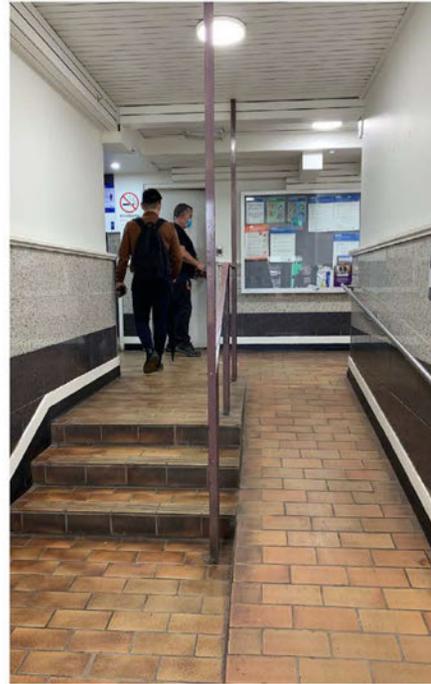
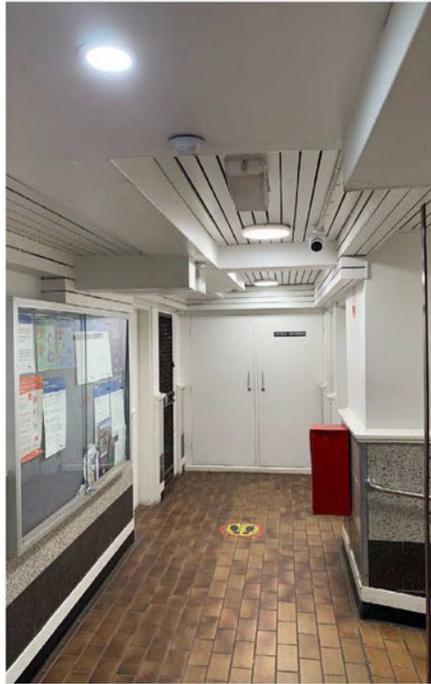
DISCLAIMER

The above list of non compliance is limited by our expertise in the various fields. For a more comprehensive list of non compliances, Homes Victoria may consider the need to engage relevant qualified consultants to carry out further analysis.

B.A.D.S. NON COMPLIANCES

- The typical floor to floor is approximately. 2610mm. The height to the underside of the slab is approx. 2400mm. With floor finishes, acoustic installations, and mechanical services, the ceiling height will be reduced further. Please note that space under 2200mm, is not considered habitable under the Building Code of Australia
- The area of the 1beds are approximately. 39m². A B.A.D.S. compliant 1bed apartment is typically 50+m²
- The balconies area are approximately. 7.5m². B.A.D.S. compliant balconies ranges from 8m² for 1bed to 12m² for 3beds + 1.5m² if the condenser are located on the balcony.
- Although the laundry in the apartments are big enough to accommodate a washing machine and dryer, a dryer can not be fitted because of inadequate ventilation. A communal dryer has been fitted in the bin room on each floor to compensate.

03 Existing Conditions - 20 Elgin Street
06 Building Conditions - Lobby



Observations

- Ceiling height is approximately 2800 at the entrance
- Ceiling height drops to 2100 - 2400 at the lifts
- The ramp grade and handrail in the lobby is not DDA compliant but there is DDA access through the rear entrance

03 Existing Conditions - 20 Elgin Street

06 Building Conditions - Lobby



Staff room



Cleaners Closet



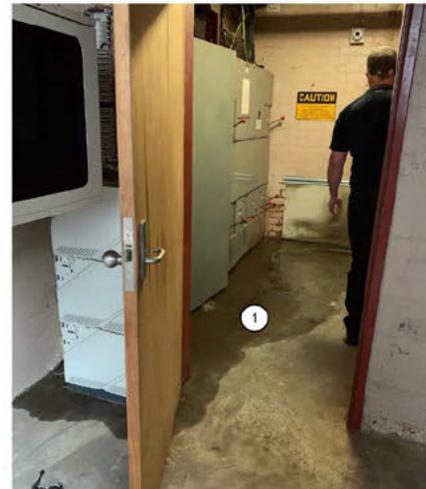
Amenities



Amenities



FCR



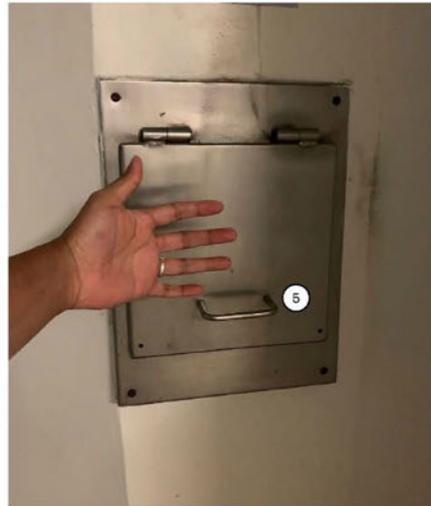
Switch room

Observations

— Ceiling height is approx 2400 to the underside of the concrete slab

1. Leak through riser

03 Existing Conditions - 20 Elgin Street
06 Building Conditions - Residential Lobby



Observations

Building Regulation Non-Compliances

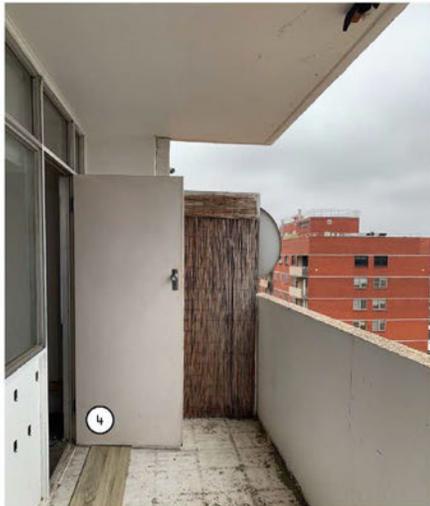
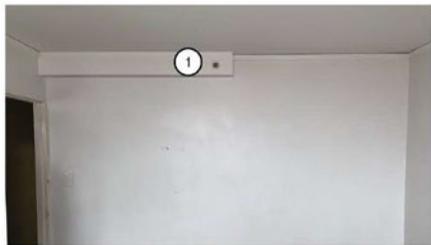
- Fire stair width & handrail are non-compliant
- The entrance door to the apartments measured on 780 wide
- Lobbies are not sprinkled
- 1 small bin chute only. There is no provision for the separation of recycle & general waste
- Bin room also doubles as a dryer room. This might be a fire hazard

Others

- Ceiling height is approximately 2400 at the highest
- Bulkhead heights is 2100
- Bulkheads are used to run the electrical & communications to the apartments

1. Bin Room
2. Electrical & Communications Cupboards
3. Dryer in Bin room
4. Handrail profile in fire stair is non-compliant
5. Bin chute

03 Existing Conditions - 20 Elgin Street
06 Building Conditions - 3 Bed Apartment



Observations

Building Regulation Non-Compliances

- There is a single central air extraction system for the kitchen, bathroom, WC and laundry.
- Each service riser carry the hot & cold water, sewer and also acts as the duct for the ventilation system.
- There is no setdown or hob between the living room and balcony
- Balconies are not sprinkled

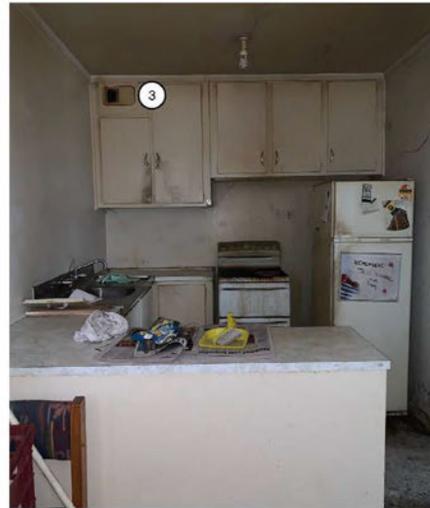
Others

- Ceiling height is approximately 2400 (to underside of slab). There are no plasterboard ceiling or vermiculite
- Sprinklers have been retrofitted to all rooms
- There is no gas
- The height difference from the living space to the balcony indicates that there might be some thick acoustic underlay under the carpet.
- Electrical conduits seem to be cast in
- Laundry has inadequate ventilation to fit a dryer

1. Sprinklers retrofitted to each room
2. Clothes drying cabinet in laundry
3. Extractor vent in bathroom
4. No setdown or hob from inside to outside
5. Extractor vent in Kitchen
6. Rangehood is not connected to anything
7. Hydronic Heating to living space only



03 Existing Conditions - 20 Elgin Street
06 Building Conditions - 1 & 2 Bed Apartment



Observations

Building Regulation Non-Compliances

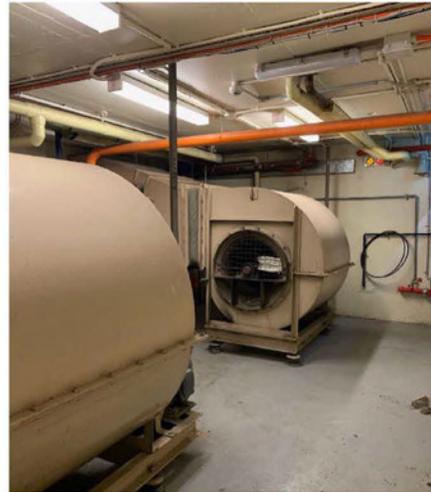
- There is a single central air extraction system for the kitchen, bathroom, WC and laundry.
- Each service riser carry the hot & cold water, sewer and also acts as the duct for the ventilation system.
- There is no setdown or hob between the living room and balcony
- Balconies are not sprinkled

Others

- Ceiling height is approx 2400 (to underside of slab).
- There are no plasterboard ceiling or vermiculite
- Sprinklers have been retrofitted to all rooms
- There is no gas
- The height difference from the living space to the balcony indicates that there might be some thick acoustic underlay under the carpet.
- Electrical conduits seem to be cast in
- Laundry has inadequate ventilation to fit a dryer

1. Extractor vent in Kitchen
2. Access to riser behind medicine cabinet
3. Extractor vent
4. Clothes drying cabinet

03 Existing Conditions - 20 Elgin Street
06 Building Conditions - Roof plant



Extractor fans for ventilation system



Extractor fans for ventilation system



Hot & Cold Water



Security Servers

Observations

Building Regulation Non-Compliances

There is a single central air extraction system for the kitchen, bathroom, WC and laundry.

Each service riser carry the hot & cold water, sewer and also acts as the duct for the ventilation system

The Extractor fan and hot & cold water appear to be original and as such may require replacement

03 Existing Conditions - 141 Nicholson Street
06 Building Conditions - Ground & Apartment Lobbies



Ground Lobby



Level 16 Lobby



Level 16 Updated Apartment entrances

Observations

Building Regulation Non - Compliances

- Fire stair width & handrail are non compliant
- The entrance door to the apartments measured on 780 wide
- 1 small bin chute only There is no provision for the separation of recycle & general waste
- Bin room also doubles as dryer room. This might be a fire hazard

Others

- Ceiling height is approx 2400 at the highest
- Bulkhead heights is 2100
- Bulkheads are used to run the electrical & communications to the apartments
- Lobbies have been retrofitted with sprinklers

1. Minor renovations. Ceiling height = 2100
2. Minor renovations. Ceiling height = 2100 2350
3. The entrance door to the apartments measured 780 wide

03 Existing Conditions - 20 Elgin Street & 141 Nicholson St

06 Building Conditions - Exterior



20 Elgin Street Rear



141 Nicholson Street Rear



141 Nicholson Street Rear

Observations

DDA access to the buildings are through the rear
— Bin are collected off the street for each building

1. Bin room. Bin collection off Elgin Street
2. DDA access from park
3. Substation
4. Bin room. Bin collection off Palmerston Street
5. DDA access

03 Existing Conditions

08 Existing Site Elevations



03 Existing Conditions

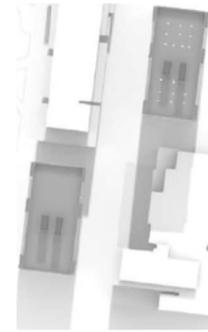
09 Shadow Diagrams - 21st June



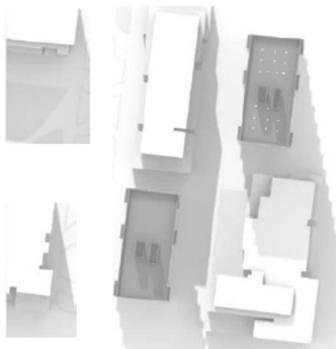
JUNE 21 10AM



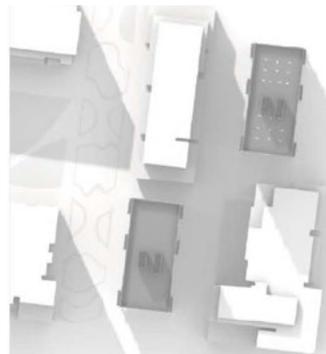
JUNE 21 11AM



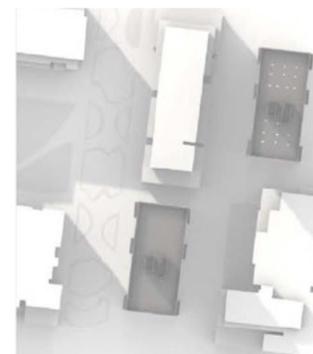
JUNE 21 12PM



JUNE 21 1PM



JUNE 21 2PM



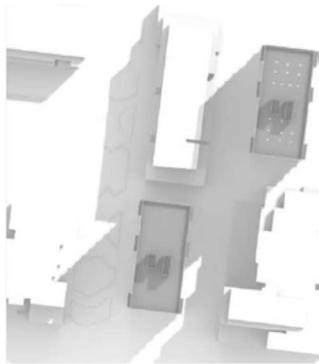
JUNE 21 3PM

20m 

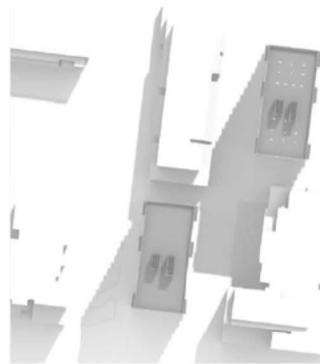
**In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality*

03 Existing Conditions

09 Shadow Diagrams - 22nd September



SEPTEMBER 21 10AM



SEPTEMBER 21 11AM



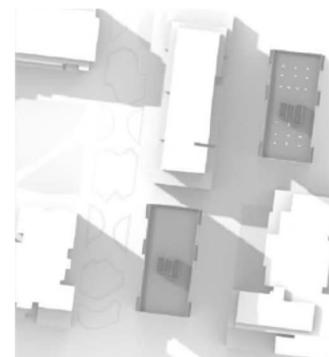
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SEPTEMBER 21 1PM



SEPTEMBER 21 2PM



SEPTEMBER 21 3PM

20m 

**In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality*

03 Existing Conditions

10 Surrounding Context - Encompass by Fraser Developments



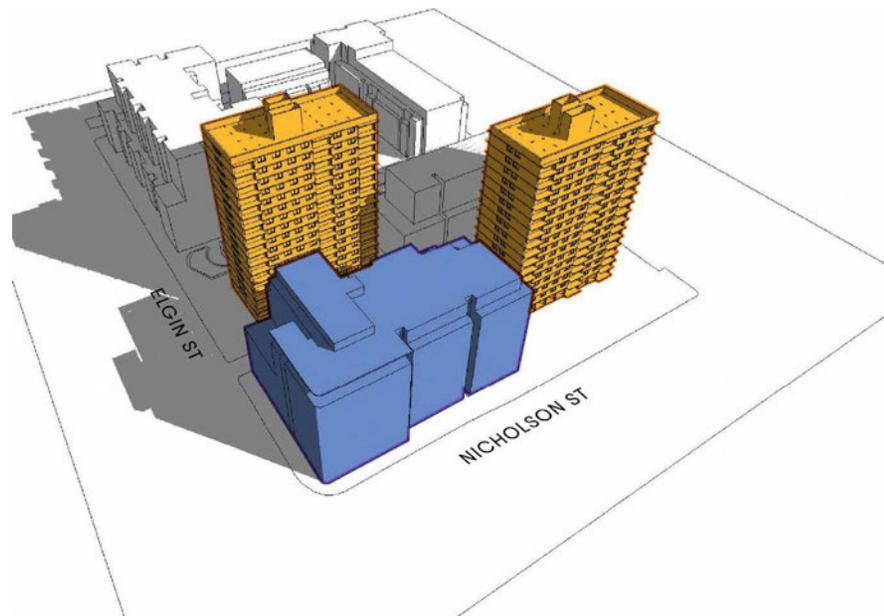
Fraser development, Nicholson street elevation



Fraser development, elgin street elevation

03 Existing Conditions

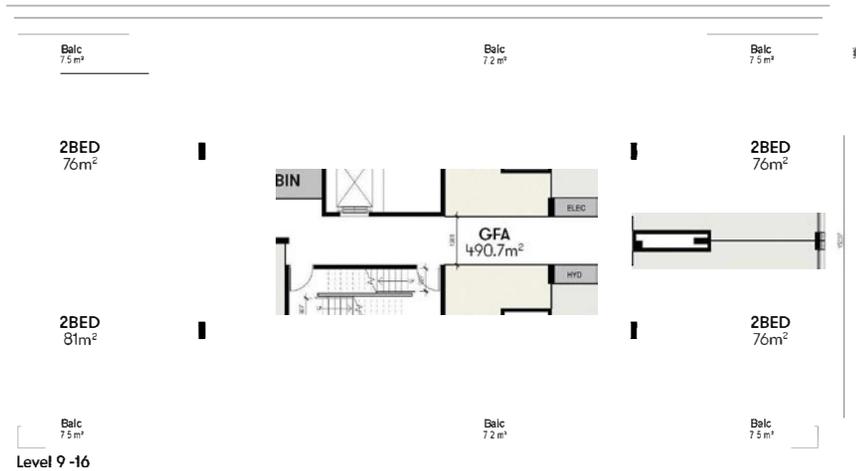
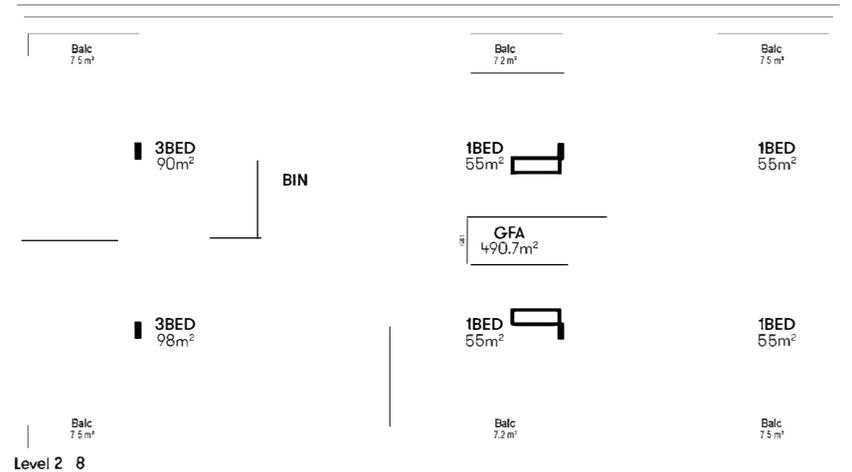
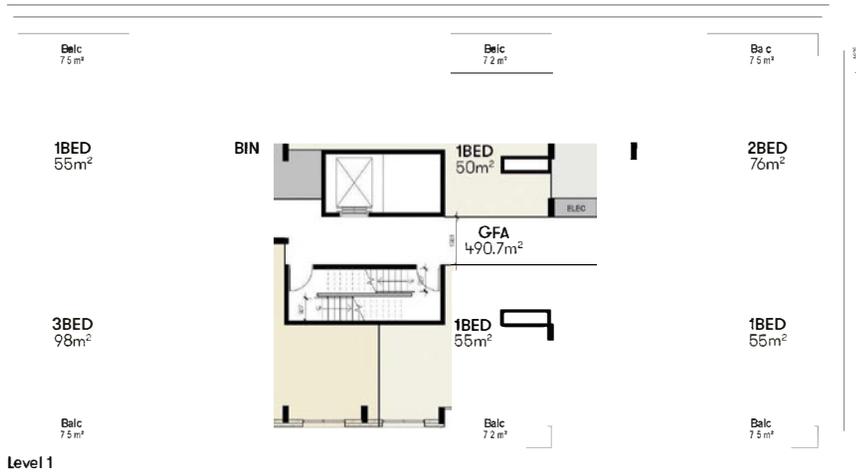
11 Aerial View of Existing Site Context



-  Proposed Site
-  Existing Surrounding Buildings
-  Future Encompass Apartments

03 Proposed Floor Plans

12 Proposed Typical Floor Plates for brief compliant dwelling sizes



- 1 Bed Unit
- 2 Bed unit
- 3 Bed Unit
- Services

General Notes

- 6 apartments have been maintained on each level
- The existing risers have been maintained to be used as sewer stacks
- The location of the bin room has roughly been maintained
- New hydraulic riser has been added on each floor
- Electric & Communications riser has been relocated to allow access to apartments
- The apartment areas have been adjusted to comply with B.A.D.S.
- The balconies have not been made B.A.D.S. compliant
- It is assumed that all kitchens, bathrooms & laundry will be exhausted to the facade.
- The ceiling heights where the ducts will run will be approximately 2100mm. Please note that any space below 2200mm is not considered as a habitable space with the Building Codes of Australia.
- Further advise from the relevant qualified consultants are required on the following:

- The compliance of the fire egress stairs, lift lobby and apartments to the Fire Regulations
- The compliance of the structure to the Seismic Regulation.
- The sizing of the service risers
- The acoustic treatment required to the floors to achieve compliance
- The Waste Management Plan for each building
- The cooling and ventilation system required

03 Proposed Floor Plans

13 Existing and Proposed Development Schedules

EXISTING

	20 Elgin Street Tower					141 Nicholson Street Tower				
	1bed (≈39m ²)	2bed (≈80m ²)	3bed (≈91m ²)	NSA (m ²)	GFA (m ²)	1bed (≈39m ²)	2bed (≈80m ²)	3bed (≈91m ²)	NSA (m ²)	GFA (m ²)
Ground	0	1	1	171	490	0	1	1	171	490
Level 1	2	3	1	409	490	2	3	1	409	490
Level 2- 16	30	30	30	6300	7200	30	30	30	6300	7200
Totals	32	34	32	6880	8180	32	34	32	6880	8180
Mix	33%	35%	33%			33%	35%	33%		

Total no. of apartments per tower =	2 x 98 = 196
Total NSA (m ²) =	13760
Total GFA (m ²) =	16360
Total no. of bedrooms =	392

PROPOSED

	20 Elgin Street Tower				141 Nicholson Street Tower			
	1bed (50-55m ²)	2bed (76-81m ²)	3bed (90-98m ²)	NSA (m ²)	1bed (50-55m ²)	2bed (76-81m ²)	3bed (90-98m ²)	NSA (m ²)
Ground		1	1	171		1	1	171
Level 1	4	1	1	389	4	1	1	389
Level 2	4		2	408	4		2	408
Level 3	4		2	408	4		2	408
Level 4	4		2	408	4		2	408
Level 5	4		2	408	4		2	408
Level 6	4		2	408	4		2	408
Level 7	4		2	408	4		2	408
Level 8	4		2	408	4		2	408
Level 9	2	4		411	2	4		411
Level 10	2	4		411	2	4		411
Level 11	2	4		411	2	4		411
Level 12	2	4		411	2	4		411
Level 13	2	4		411	2	4		411
Level 14	2	4		411	2	4		411
Level 15	2	4		411	2	4		411
Level 16	2	4		411	2	4		411
Totals	48	34	16	6704	48	34	16	6704
Mix	49%	35%	16%		49%	35%	16%	
Target Mix	55%	30%	15%		55%	30%	15%	

Total no. of apartments per tower =	2 x 98 = 196
Total NSA (m ²) =	13408
Total no. of bedrooms =	328

Observations

The preliminary feasibility study shows that:

The number of apartments that can be maintained is 98 units per tower, totalling 2x98=196 for both towers

The number of bedrooms will drop by 64 beds as a result of bigger apartments sizes required to comply with the BETTER APARTMENT DESIGN STANDARDS (B.A.D.S.)

The NSA will drop as a result of the new service risers required.

The information presented herein was produced prior to the completion of construction floor areas, dimensions, fittings, finishes, tile patterns and setbacks, and the like, and the specifications thereof, are indicative only, are not to scale and are subject to change without notice. Warranty that the information presented herein is a representation of the final product is not given either expressly or implied. Prospective purchasers must rely on their own enquiries.

Option B:

Remodel

As per option A “Standard Upgrade”, but with an additional ‘skin’ at lower levels fronting Elgin And Nicholson Streets to better integrate with the adjoining streetscape

*This option was declared **non-viable** following the result of Option A analysis. The low, pre-existing, floor to floor heights from the existing towers could not be replicated in the new street wall development as 2610mm is inadequate for new construction. This will result in a doubling of circulations and lifts, in addition to blocking the natural light and outlooks for the first 3-4 levels of the existing development. This option would require a significant investment and will result a substandard outcome.*

Option C:

Redevelop

A feasibility / yield study for a new development on the site that maintains the existing number of dwellings and extends the development out to Elgin and Nicholson Street.

Option C1:

New development to match existing apartment count of Red Brick Towers.

Option C2:

New development to match existing height of Red Brick Towers.

05 Option C - Redevelop

01 Redevelopment Layout



Redevelopment:

This diagram illustrates the proposed siting concept for the development. The proposal maintains some elements of the previous planning advice but is informed by the approved by Frasers Property Australia development. As such, we are proposing to align the building along Nicholson Street with the proposed adjacent building and express a 7 to 8 storey street wall with recessed upper levels.

The street wall along Palmerston will be 3 storey with an expressed higher tower at 7 to 8 storey to the corner of Nicholson Street. The lower building height along Palmerston Street will allow natural light penetration in the private open space located within the elbow of the proposed development and away from the Category 1 road (Nicholson Street).

We propose an occasional one way traffic service road used for removalists and services access connecting Elgin Street and Nicholson Street. The development along Elgin Street will align with the existing 23 Palmerston Street Development and the proposed Encompass Development at the corner of Nicholson Street and Elgin Street. The 4 storey street wall will be slightly recessed from the property line to express some soft landscaping along Elgin Street similar to the development at 38 Elgin Street then joining with the street wall of Encompass.

The recessed upper levels will align with the recessed levels of Encompass to provide a coordinated response. The Private open space for this building will be located along the linear park and away from the main traffic of Elgin Street benefiting from the natural sun exposure from the North West over the linear park and creating building separation between the new development and the existing 23 Palmerston Street building. This siting strategy will allow a minimum of 9m building separation protecting existing and future views from the surrounding buildings.

- Site
- Proposed Building
- Adjacent Development
- Existing
- Communal

0m 50m

Option C1:

New development to match existing apartment count of Red Brick Towers.

05 Option C1 - Redevelop
02 Ground Plan



Ground Floor:

The proposed massing of the development is recessed from the property line along Palmerston and Nicholson Street to maintain a 2.4m wide green buffer zone along the development. This setback is consistent with the two recessed volumes of the Frasers Property development at 8 Elgin Street. This setback would also allow for some TPZ zone around the two trees to be maintained along Nicholson Street.

The same setback is proposed at the South West corner along Elgin Street to mark the main entry and propose some soft landscaping. The street wall then aligns with the adjacent development to the East.

We propose a porte cochere for a one way traffic service road allowing access to the internal part of the development for deliveries, removalists, maintenance, waste collection and services access. A single substation is proposed for the development along Elgin Street. Communal open spaces are located on Ground: one along the linear park linking Elgin and Palmerston Street and one in the internal courtyard in the elbow of the North East building.

The proposed location allows for natural light penetration and possible internal communal spaces on Ground. These are now located further away from the main road and propose a safe gathering environment.

- Residential
- Communal
- Adjacent
- Site

1:500 @ A1

05 Option C1 - Redevelop

02 Level 04 - 07



Level 04 - 07:

Level 4 to 7 show the extent of the street wall along Nicholson Street matching the street wall height of the adjacent Frasers Property development. The additional levels above the street wall along Elgin Street align with the proposed Encompass Development at the corner of Nicholson Street and Elgin Street providing a coordinated response.

Residential
Adjacent

1:500 @ A1

05 Option C1 - Redevelop
02 Level 08 - 10



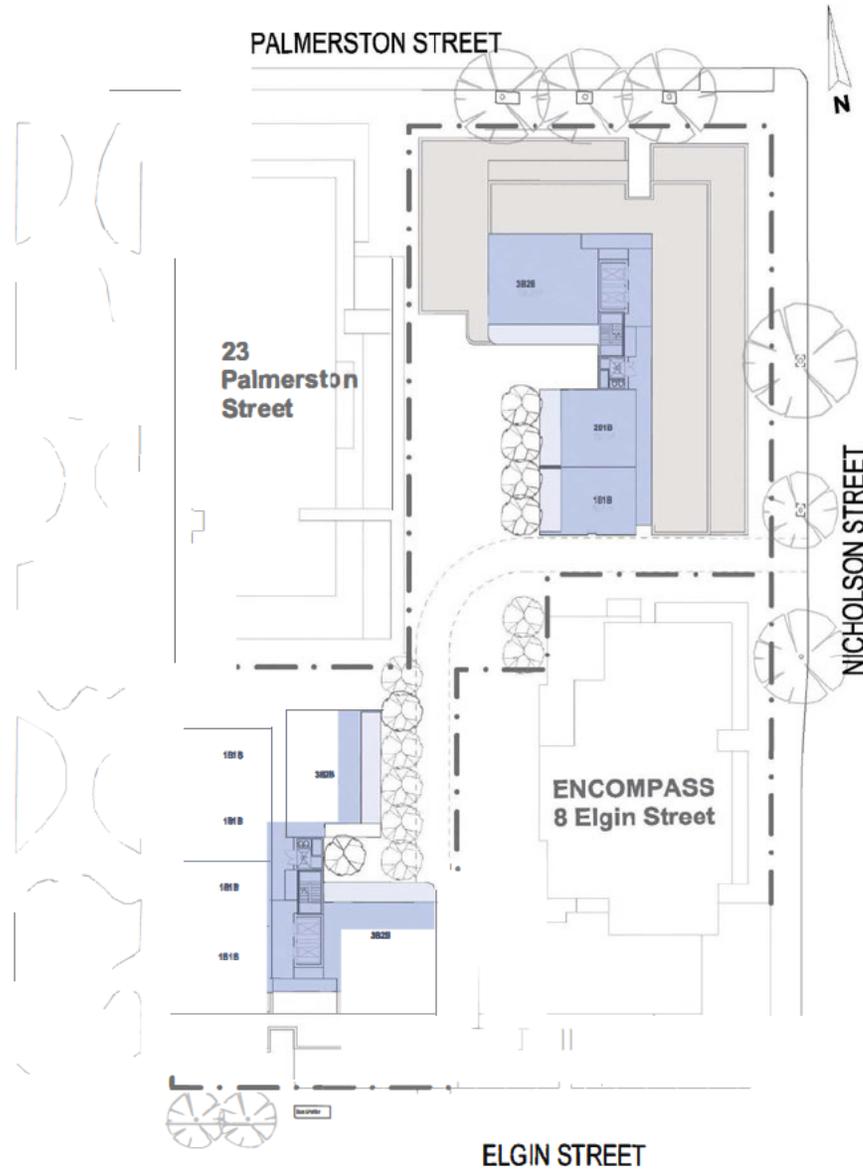
Level 08 - 10:

Level 8 to 10 are the top recessed levels providing the additional yield in order to match the number of apartments in the existing red brick towers. These levels could have a different façade treatment to the rest of the building.

**Residential
Adjacent**

1:500 @ A1

05 Option C1 - Redevelop
02 Level 11



Level 11:

Note that Level 11 roof is still below the current height of the existing red brick towers roof whilst providing a larger yield and bigger NSA overall than the existing red brick towers.

**Residential
Adjacent**

1:500 @ A1

05 Option C1 - Proposed Section

03 East - West Section



Proposed Section:

- This East West section through the site illustrates how the proposed development sits at least two levels below the existing red brick towers.
- The proposal sits about approximately three levels above the future Encompass building but as it is located in the center of the building block, it is in line with the HV urban design guidelines and show an improvement in street activation and passive surveillance.
- The 2.4m setback along Nicholson Street helps creating a green buffer zone and allows for the tree protection zone of the existing mature street trees.

- Adjacent Buildings
- Proposed
- Existing Building
- Site boundary
- Transition in Scale - Perceived Heights

05 Option C1 - Redevelop

03 Development Summary

PROPOSED DEVELOPMENT SCHEDULE NORTH EAST BUILDING												
	APARTMENTS DESIGN					Total	Outdoor Communal	GBA m ² **	Resi GFA m ² *	NSA m ²	P.O.S. m ² ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED sqm							
Basement												0
Ground	7		3		1	11	250 0	1030 7	922 2	729 1	108 5	
Level1	8		3		1	12		1028 2	910 2	778 2	118 0	
Level2	8		3		1	12		1028 2	910 2	778 2	118 0	
Level3	6		3	1		10		879 8	784 8	652 7	95 0	
Level4	4		3	1	1	9		870 1	780 6	648 6	89 5	
Level5	4		3	1	1	9		870 1	780 6	648 6	89 5	
Level6	4		3	1	1	9		870 1	780 6	648 6	89 5	
Level7	4		3	1	1	9		870 1	780 6	648 6	89 5	
Level8	1	1	3	0	2	7		740 0	665 5	566 9	74 5	
Level9	1	1	3	0	2	7		740 0	665 5	566 9	74 5	
Level10	1	1	3	0	2	7		740 0	665 5	566 9	74 5	
Level11	1	0	1		1	3		377 0	344 5	236 5	32 5	
TOTAL	49	3	34	5	14	105	250 0	10044 3	8990 8	7469 8	1053 5	0
MIX%	47	3	32	5	13							

PROPOSED DEVELOPMENT SCHEDULE SOUTH WEST BUILDING												
	APARTMENTS DESIGN					Total	Outdoor Communal	GBA m ² **	Resi GFA m ² *	NSA m ²	P.O.S. m ² ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED sqm							
Basement												0
Ground	4		3			7	210 0	708 9	642 4	464 6	66 5	
Level1	5		3		1	9		841 5	752 0	618 5	89 5	
Level2	5		3		1	9		841 5	752 0	618 5	89 5	
Level3	5		3		1	9		841 5	752 0	618 5	89 5	
Level4	5		1	2		8		760 9	676 9	551 4	84 0	
Level5	5		1	2		8		760 9	676 9	551 4	84 0	
Level6	5		1	2		8		760 9	676 9	551 4	84 0	
Level7	5		1	2		8		760 9	676 9	551 4	84 0	
Level8	4	1	1		1	7		648 2	577 7	472 6	70 5	
Level9	4	1	1		1	7		648 2	577 7	472 6	70 5	
Level10	4	1	1		1	7		648 2	577 7	472 6	70 5	
Level11	4				2	6		399 9	534 9	408 8	65 0	
TOTAL	55	3	19	0	16	93	210 0	8821 5	7874 0	6372 3	947 5	0
MIX%	59	3	20	0	17							

PROPOSED DEVELOPMENT SCHEDULE COMBINED FOR 2 BUILDINGS												
	APARTMENTS DESIGN					Total	Outdoor Communal	GBA m ² **	Resi GFA m ² *	NSA m ²	P.O.S. m ² ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED sqm							
Basement												
Ground	11					18	460 0	1739 6	1564 6	1193 7	175 0	
Level1	13					21		1869 7	1662 2	1396 7	207 5	
Level2	13					21		1869 7	1662 2	1396 7	207 5	
Level3	11					19		1721 3	1536 8	1271 2	184 5	
Level4						17		1631 0	1457 5	1200 0	173 5	
Level5						17		1631 0	1457 5	1200 0	173 5	
Level6						17		1631 0	1457 5	1200 0	173 5	
Level7						17		1631 0	1457 5	1200 0	173 5	
Level8						14		1388 2	1243 2	1039 5	145 0	
Level9						14		1388 2	1243 2	1039 5	145 0	
Level10			4			14		1388 2	1243 2	1039 5	145 0	
Level11			1			9		976 9	879 4	665 3	97 5	
TOTAL	104		53		30	198	460 0	18865 8	16864 8	13842 1	2001 0	
MIX%	52 5%	3 0%	26 8%	2 5%	15 2%							

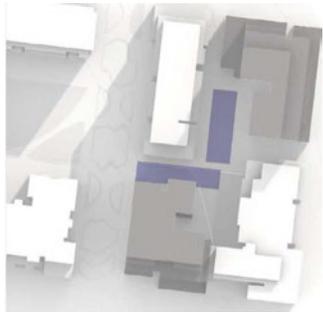
*Two of the Ground floor apartment could be used as Internal Communal Space if required

316 BEDS TOTAL

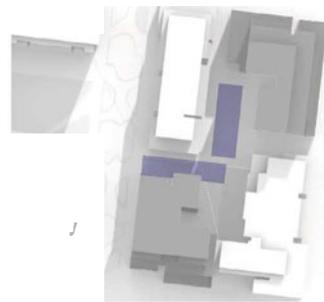
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05 Option C1 - Redevelop

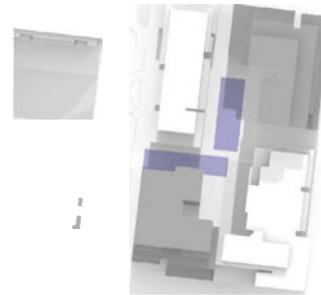
04 Shadow Diagrams - 21st June



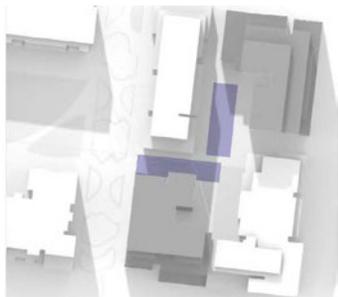
JUNE 21 - 10AM



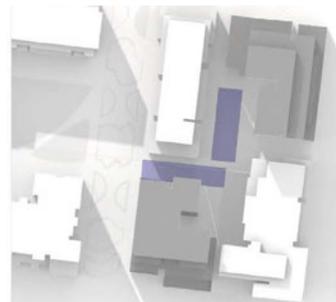
JUNE 21 - 11AM



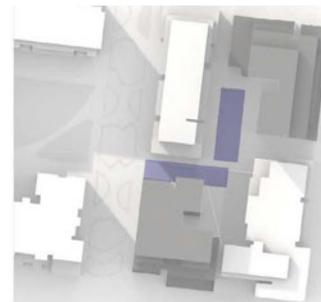
JUNE 21 - 12PM



JUNE 21 - 1PM



JUNE 21 - 2PM



JUNE 21 - 3PM

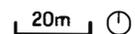
21st of June @ 10AM-3PM

To comply with the B.A.D.S. Natural light exposure requirement, at least 50 percent or 125 square metres, whichever is the lesser, of the primary communal outdoor open space area used by occupants should receive a minimum of two hours of sunlight between 9am and 3pm on 21 June.'

As the North East tower shows compliance with the requirement, the South West tower shows approximately 38sqm in the sun between 1 and 2pm and approximately 65 sqm between 2 and 3pm. These number are lower than the 125sqm requirement but an improvement from the current situation as the current red brick tower at the South West corner doesn't have any communal area or any space on Ground that could comply with the B.A.D.S. natural light exposure requirement.

We believe that further investigation in the building shape could improve this compliance for the natural light exposure of the Communal Open Space on the Ground floor.

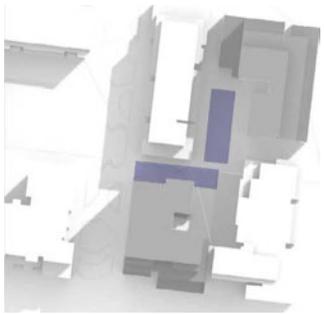
An other option could also be moving the Communal Open Space to the roof area so it benefit from great sun exposure and views to the CBD but this option is outside the scope of the current yield exercise.



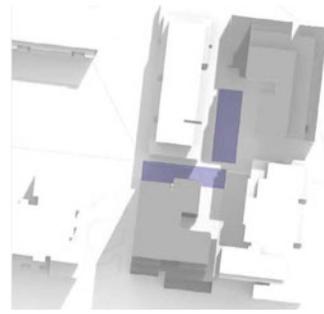
*In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality

05 Option C1 - Redevelop

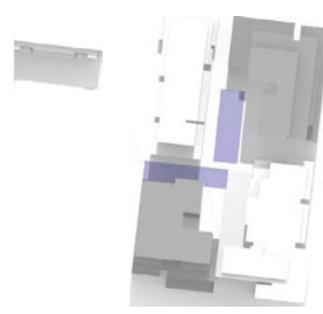
04 Shadow Diagrams - 22nd September



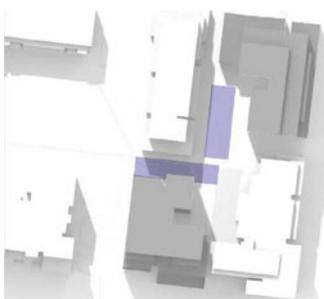
SEPTEMBER 22 - 10AM



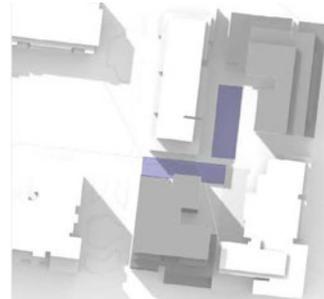
SEPTEMBER 22 - 11AM



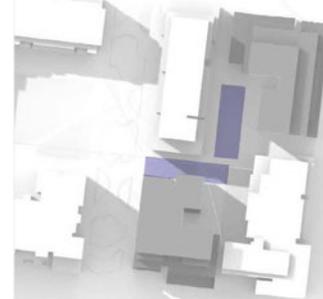
SEPTEMBER 22 - 12PM



SEPTEMBER 22 - 1PM



SEPTEMBER 22 - 2PM



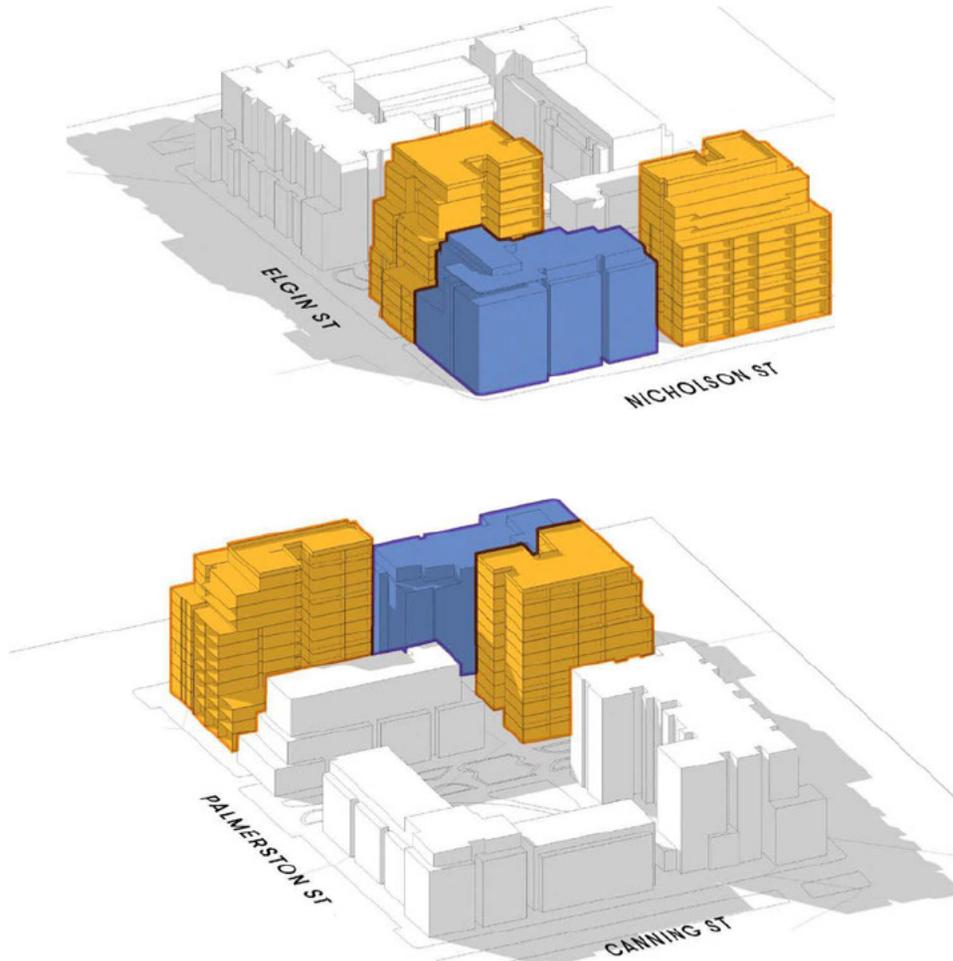
SEPTEMBER 22 - 3PM



**In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality*

05 Option C1 - Remodel

05 Proposed Aerial Views



Remodel:

The street views of the proposed developments show clearly how the proposed siting concept follows the directions of the approved Frasers Property Australia development.

The building along Nicholson Street aligns with the proposed adjacent building and express a 7 to 8 storey street wall with recessed upper levels. The street wall along Palmerston shows a 3 storey street wall with an expressed higher tower at 7 to 8 storey to the corner of Nicholson Street. The lower building height along Palmerston Street allows natural light penetration in the private open space located within the elbow of the proposed development.

The development along Elgin Street aligns with the existing 23 Palmerston Street Development and displays a 4 storey street wall slightly recessed from the property line to express some soft landscaping along Elgin Street then joining with the street wall of Encompass. The recessed upper levels will align with the recessed levels of Encompass provides a coordinated response. This siting strategy will allow a minimum of 9m building separation protecting existing and future views from the surrounding buildings and the same number of apartments as the previous towers.

Note that the two proposed developments are lower than the existing red brick towers.

- Proposed Site
- Existing Surrounding Buildings
- Future Encompass Apartments

Option C2:

New development to match existing height of Red Brick Towers.

05 Option C2 - Redevelop
 02 Level 03



Level 03:

On level 3, the roof deck along the street wall volume along Palmerston could become an alternative location for the Communal Open Space if additional space is required.

- Residential
- Adjacent

1:500 @ A1



05 Option C2 - Redevelop
 02 Level 04 - 07



Level 04 - 07:

Level 4 to 7 show the extent of the street wall along Nicholson Street matching the street wall height of the adjacent Frasers Property development. The additional levels above the street wall along Elgin Street align with the proposed Encompass Development at the corner of Nicholson Street and Elgin Street providing a coordinated response.

Residential
 Adjacent

1:500 @ A1



05 Option C2 - Redevelop

02 Level 08 - 13



Level 08 - 13:

Level 08 to 13 are the top recessed levels providing the maximized yield in order to match the height of the existing red brick towers (subject to Council Approval).

These levels could have a different facade treatment to the rest of the building.

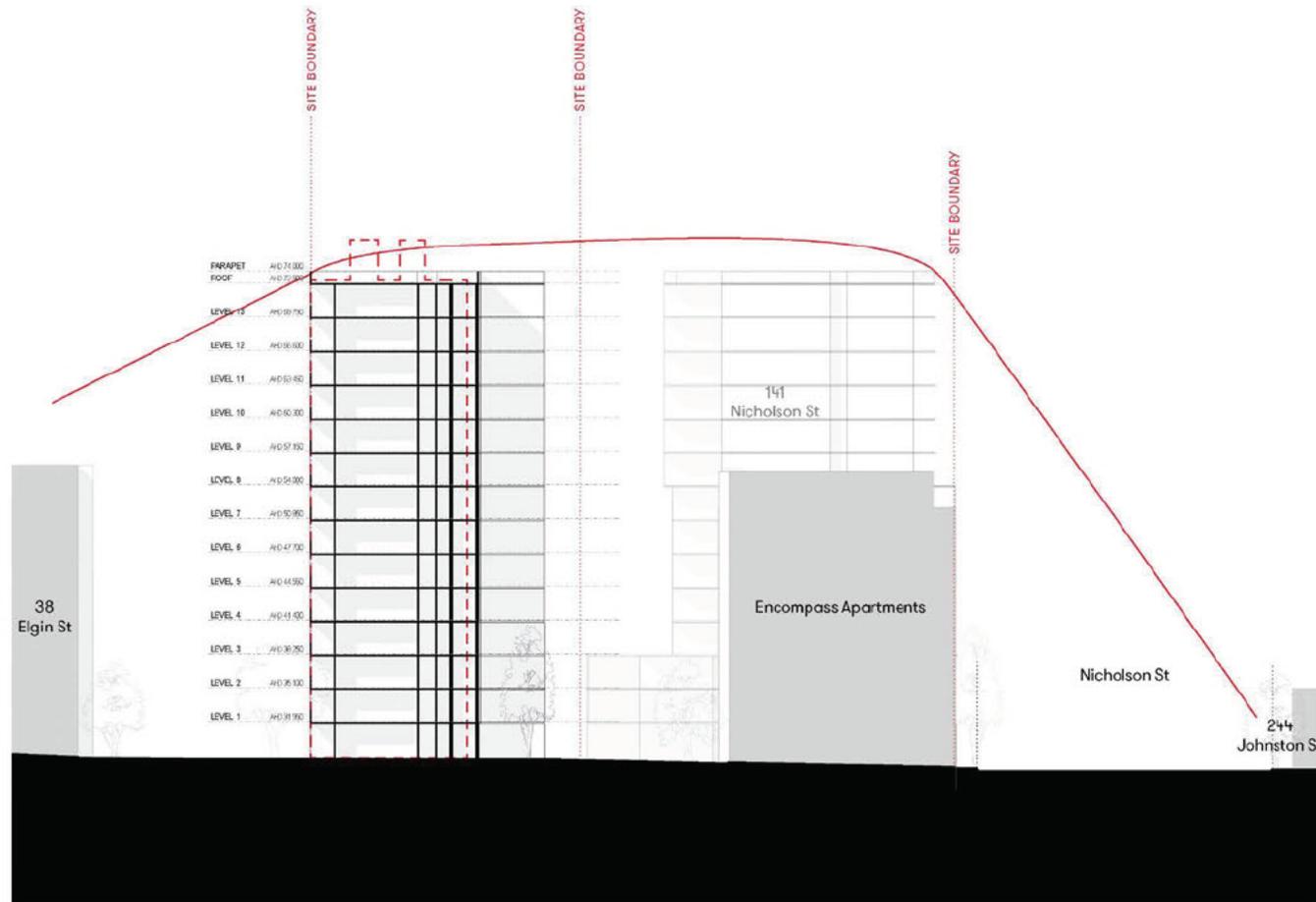
- Residential
- Adjacent

1:500 @ A1



05 Option C2 - Proposed Section

03 East - West Section



Proposed Section:

- This East West section through the site (not side) illustrates how the proposed development sits at the same level as the existing towers.
- The proposal sits about approximately five levels above the future Encompass building but as it is located in the center of the building block, it is following the Homes Victoria Urban Design Guidelines and show an improvement in street activation and passive surveillance.
- The 2.4m setback along Nicholson Street helps creating a green buffer zone and allows for the tree protection zone (TPZ) of the existing mature street trees.

- Adjacent Buildings
- Proposed
- Existing Building
- Site boundary
- Transition in Scale - Perceived Heights

05 Option C2 - Redevelop

03 Development Summary

PROPOSED DEVELOPMENT SCHEDULE NORTH EAST BUILDING

	APARTMENTS DESIGN					Total dwellings	Outdoor Communal	GBA m ³ **	Resi GFA m ² *	NSA m ²	P.O.S. m ³ ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED 100 sqm							
Basement												0
Ground	7		3		1	11	250.0	1030.7	922.2	779.1	108.5	
Level 1	8		3		1	12		1028.2	916.2	778.2	118.0	
Level 2	8		3		1	12		1028.2	916.2	778.2	118.0	
Level 3	6		3	1		10		879.3	784.8	652.7	95.0	
Level 4	4		3	1	1	9		870.1	786.6	648.6	89.5	
Level 5	4		3	1	1	9		870.1	786.6	648.6	89.5	
Level 6	4		3	1	1	9		870.1	786.6	648.6	89.5	
Level 7	4		3	1	1	9		870.1	786.6	648.6	89.5	
Level 8	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
Level 9	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
Level 10	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
Level 11	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
Level 12	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
Level 13	1	1	3	0	2	7		740.6	665.5	566.9	74.5	
TOTAL	51	6	42	5	19	123	250.0	11887.3	10642.8	8934.0	1244.5	0
MIX %	41	5	34	4	15							

PROPOSED DEVELOPMENT SCHEDULE SOUTH WEST BUILDING

	APARTMENTS DESIGN					Total dwellings	Outdoor Communal	GBA m ³ **	Resi GFA m ² *	NSA m ²	P.O.S. m ³ ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED 100 sqm							
Basement												0
Ground	4		3			7	210.0	708.5	642.4	464.6	66.5	
Level 1	5		3		1	9		841.5	752.0	618.5	89.5	
Level 2	5		3		1	9		841.5	752.0	618.5	89.5	
Level 3	5		3		1	9		841.5	752.0	618.5	89.5	
Level 4	5	1		2		8		760.5	676.9	551.4	84.0	
Level 5	5	1		2		8		760.5	676.9	551.4	84.0	
Level 6	5	1		2		8		760.5	676.9	551.4	84.0	
Level 7	5	1		2		8		760.5	676.9	551.4	84.0	
Level 8	4	1	1		1	7		648.2	577.7	472.6	70.5	
Level 9	4	1	1		1	7		648.2	577.7	472.6	70.5	
Level 10	4	1	1		1	7		648.2	577.7	472.6	70.5	
Level 11	4	1	1		1	7		648.2	577.7	472.6	70.5	
Level 12	4	1	1		1	7		648.2	577.7	472.6	70.5	
Level 13	4	1	1		1	7		648.2	577.7	472.6	70.5	
TOTAL	63	6	22	0	17	108	210.0	10166.2	9072.2	7361.3	1094.0	0
MIX %	58	6	20	0	16							

PROPOSED DEVELOPMENT SCHEDULE COMBINED FOR 2 BUILDINGS

	APARTMENTS DESIGN					Total dwellings	Outdoor Communal	GBA m ³ **	Resi GFA m ² *	NSA m ²	P.O.S. m ³ ***	Residential Carspaces
	1 BED 55sqm	1BED DDA 73 sqm	2 BED 75 sqm	2BED DDA 83 sqm	3BED 100 sqm							
Basement												0
Ground	11	0	6	0	1	18	460.0	1739.6	1564.6	1193.7	175.0	
Level 1	13	0	6	0	2	21		1869.7	1662.2	1396.7	207.5	
Level 2	13	0	6	0	2	21		1869.7	1662.2	1396.7	207.5	
Level 3	11	0	6	1	1	19		1721.3	1536.8	1271.2	184.5	
Level 4	9	0	4	1	3	17		1631.0	1457.5	1200.0	173.5	
Level 5	9	0	4	1	3	17		1631.0	1457.5	1200.0	173.5	
Level 6	9	0	4	1	3	17		1631.0	1457.5	1200.0	173.5	
Level 7	9	0	4	1	3	17		1631.0	1457.5	1200.0	173.5	
Level 8	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
Level 9	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
Level 10	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
Level 11	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
Level 12	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
Level 13	5	2	4	0	3	14		1388.2	1243.2	1039.5	145.0	
TOTAL	114	12	64	5	36	231	460.0	22063.5	19715.0	16195.3	2338.5	0
MIX %	49.4	5.2	27.7	2.2	15.6							
Objective:	52.5%	2.5%	17.5%	2.5%	15.0%							

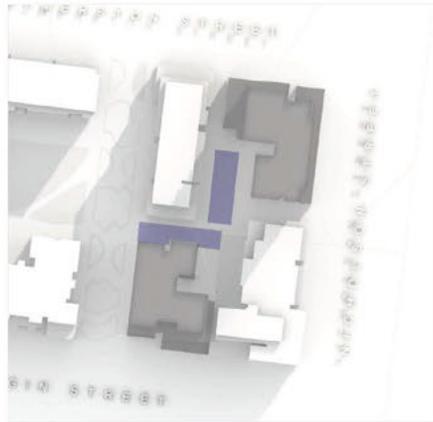
*Two of the Ground floor apartment could be used as Internal Communal Space if required

372 BEDS TOTAL

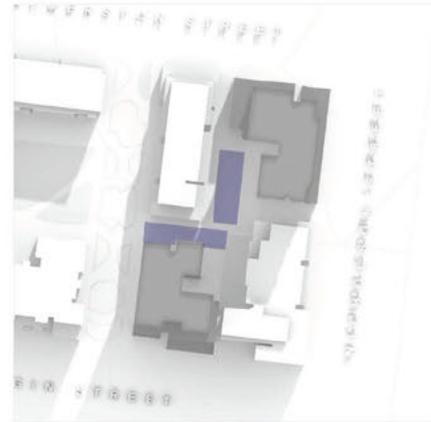
The information presented herein was produced prior to the completion of construction. Floor areas, dimensions, fittings, finishes, tile patterns and setouts, and the fix, and the specifications thereof, are indicative only, are not to scale and are subject to change without notice. Warranty that the information presented herein is a representation of the final product is not given either expressly or implied. Prospective purchasers must rely on their own enquiries.

05 Option C2 - Redevelop

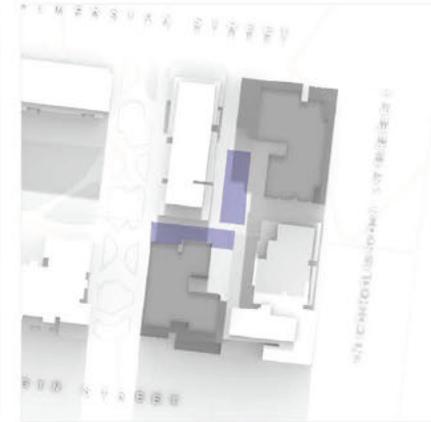
04 Shadow Diagrams - 21st June



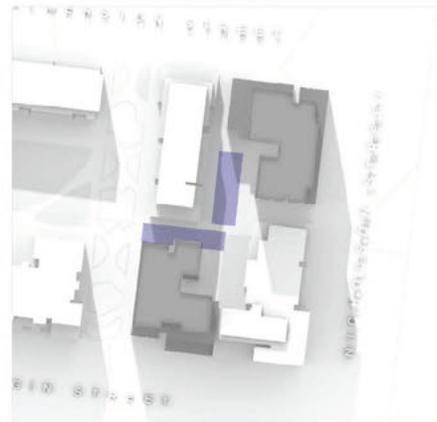
JUNE 21 - 10AM



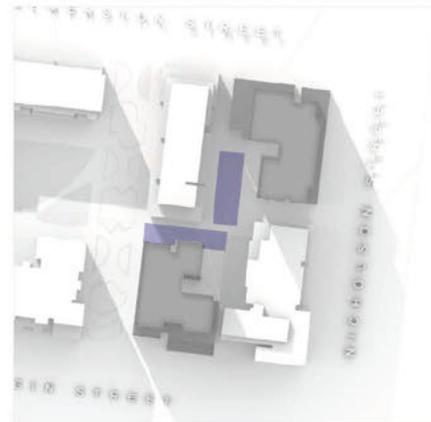
JUNE 21 - 11AM



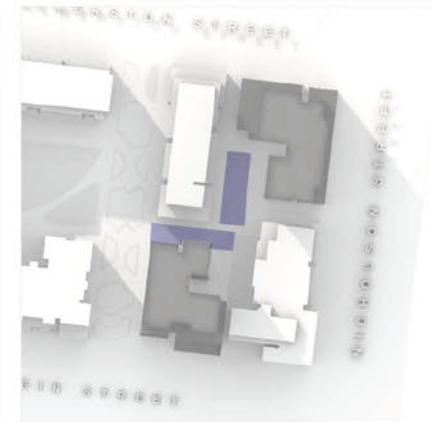
JUNE 21 - 12PM



JUNE 21 - 1PM



JUNE 21 - 2PM



JUNE 21 - 3PM

21st of June @ 10AM-3PM

To comply with the B.A.D.S. Natural light exposure requirement, at least 50 percent or 125 square metres, whichever is the lesser, of the primary communal outdoor open space area used by occupants should receive a minimum of two hours of sunlight between 9am and 3pm on 21 June.*

As the North East tower shows compliance with the requirement, the South West tower shows approximately 38sqm in the sun between 1 and 2pm and approximately 65 sqm between 2 and 3pm. These numbers are lower than the 125sqm requirement but an improvement from the current situation as the current red brick tower at the South West corner doesn't have any communal area or any space on Ground that could comply with the B.A.D.S. natural light exposure requirement.

We believe that further investigation in the building shape could improve this compliance for the natural light exposure of the Communal Open Space on the Ground floor.

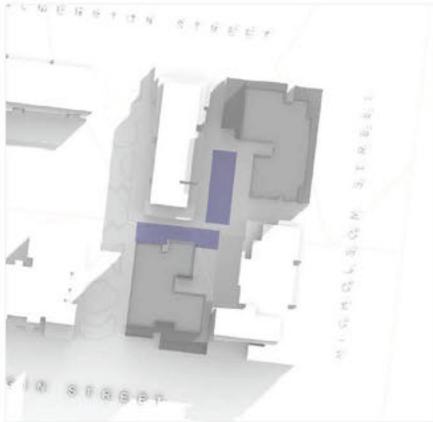
An other option could also be moving the Communal Open Space to the roof area so it benefit from great sun exposure and views to the CBD but this option is outside the scope of the current yield exercise.



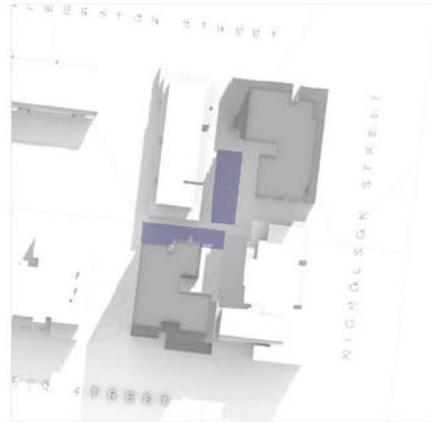
*In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality

05 Option C2 - Redevelop

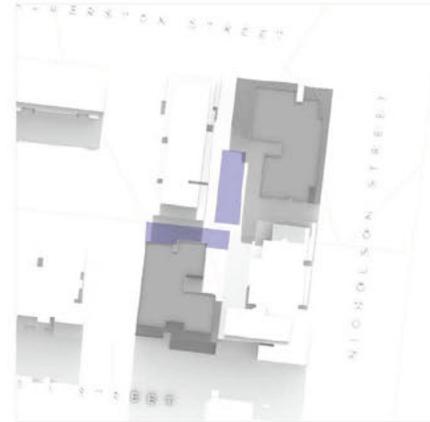
04 Shadow Diagrams - 22nd September



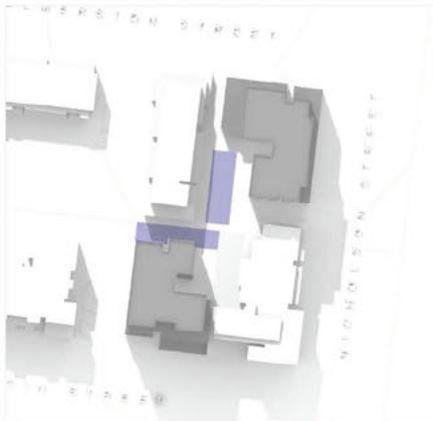
SEPTEMBER 22 - 10AM



SEPTEMBER 22 - 11AM



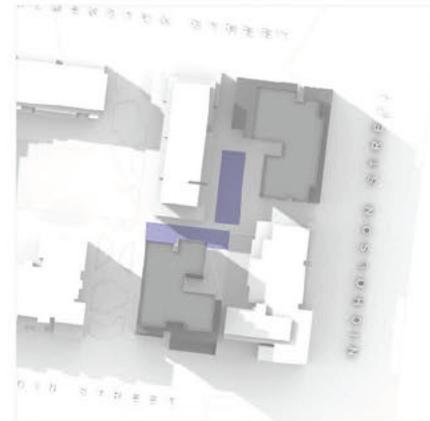
SEPTEMBER 22 - 12PM



SEPTEMBER 22 - 1PM



SEPTEMBER 22 - 2PM

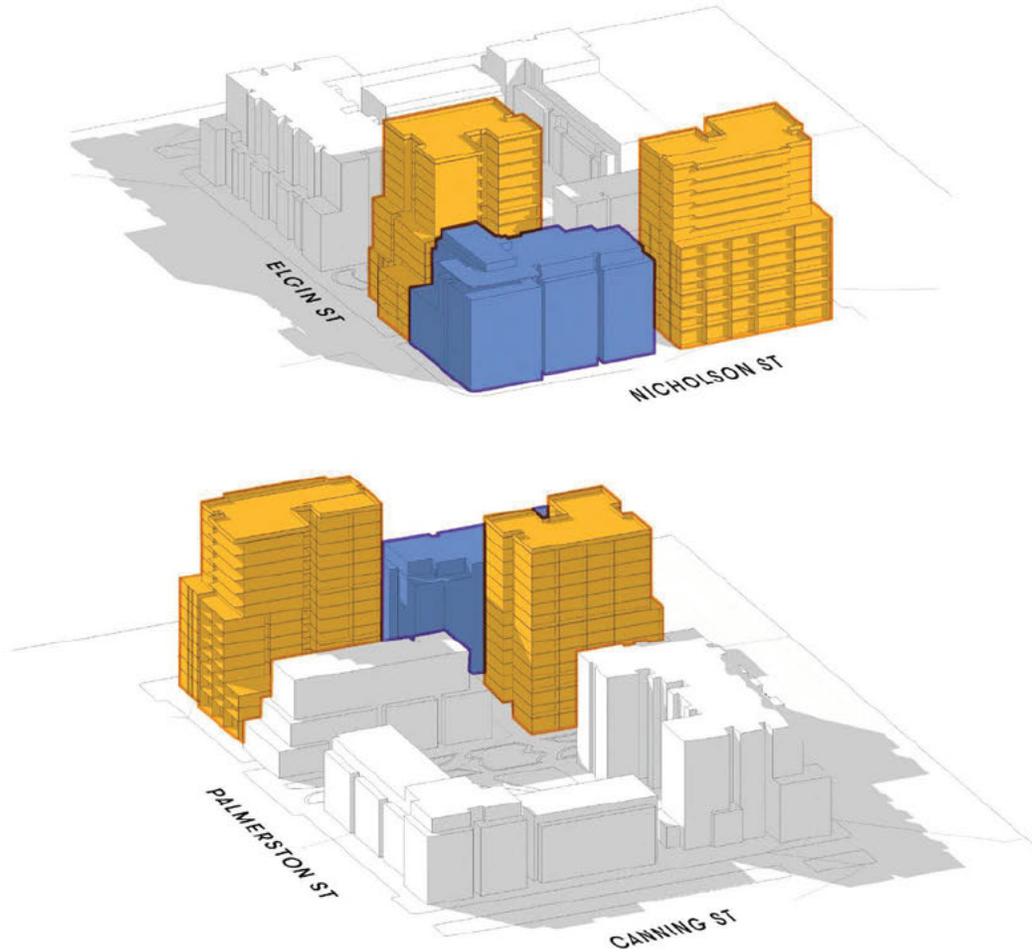


SEPTEMBER 22 - 3PM



**In the absence of an accurate survey, the existing building heights, topography and sun has been estimated and may differ from reality*

05 Option C2 - Remodel
 05 Proposed Aerial Views



Remodel:

The street views of the proposed developments show clearly how the proposed siting concept responds to the street wall scale of the proposed Frasers development. However, the overall height of the proposal matches the existing height of the Red Brick Towers. The building along Nicholson Street aligns with the proposed adjacent building and express a 7 to 8 storey street wall with recessed upper levels. The street wall along Palmerston Street shows a 3 storey street wall with an expressed higher tower at 7 to 8 storey to the corner of Nicholson Street. The lower building height along Palmerston Street allows natural light penetration in the private open space located within the elbow of the proposed development.

The development along Elgin Street aligns with the existing 23 Palmerston Street Development and displays a 4 storey street wall slightly recessed from the property line to express some soft landscaping along Elgin Street then joining with the street wall of Encompass. The recessed upper levels will align with the recessed levels of Encompass provides a coordinated response. This siting strategy will allow a minimum of 9m building separation protecting existing and future views from the surrounding buildings and the same number of apartments as the previous towers.

Note that the proposed building height while matching the existing towers, is reconfigured within the site and it is recommended that the proposed envelope is subject to planning advice and review.

- Proposed Site
- Existing Surrounding Buildings
- Future Encompass Apartments

06 Conclusions

This report covers the requirements and possible yield generated from three different upgrades of the existing red brick towers located at 20 Elgin Street and 141 Nicholson Street in Carlton. The first two options considered keeping the existing towers and proposing a mix upgrade more in line with the current needs as well as a Building Code upgrade to keep the building secure and in line with the current standards. As the first option includes only the upgrade of the existing towers, Option 2 also includes possible additional areas to be built along Nicholson Street. The third option considers demolition of the existing towers and redevelopment of the land with a solution compliant to the desired mix, codes and B.A.D.S. requirements.

Option A : Floor Plate Reconfiguration

Standard Upgrade, we identified the extensive upgrades that would be required to bring the existing towers to compliance with the current codes of practice. The issues have been classified in tow categories:

1. Building regulation non-compliances (compulsory upgrades)
2. B.A.D.S. non-compliances (recommended upgrades)

BUILDING REGULATION NON-COMPLIANCES

FIRE SERVICES

1. The fire stair widths are below the required 1000mm clear & handrail profile is not compliant
2. The concrete floor slab is less than 200mm thick. A 200mm thick slab is needed to provide the required fire-rating between floors
3. The balconies are not provided with sprinklers.

MECHANICAL & HYDRAULIC SERVICES

4. The service risers currently house the hot & cold water, sewer and acts as the exhaust duct for the kitchen, bathroom, WC & laundry. The risers are inaccessible from the lift lobby. This arrangement is non-compliant. Each service needs to be in a dedicated riser with the appropriate acoustic and fire-rating. The hydraulic risers need to be accessible from the lift lobby.

ACOUSTICS

5. The concrete floor slab is less than 200mm thick. Generally a 200mm thick slab, acoustic underlay to floor finishes and/or acoustic insulation within the ceiling space are needed to provide the required acoustic rating between floors.

STRUCTURE

6. The structure needs to comply with the current earthquake code. Further analysis is needed by a qualified structural engineer to determine compliance

OTHER

7. All apartment doors are 780mm in width. Doors need to be 850mm clear to be DDA compliant
8. There is no hob or slab set-down between the balcony and living room. A hob or a set-down is required for waterproofing

9. Small single bin chute. No allowance for separation of recyclable & general waste. The council requires waste to be separated

10. The dryer fitted in the bin room on each floor could present a fire hazard

11. It is assumed that all kitchens, bathrooms & laundry will be exhausted to the facade. The ceiling heights where the ducts will run will be approximately 2100mm. Please note that any space below 2200mm is not considered as a habitable space with the Building Codes of Australia.

B.A.D.S. NON-COMPLIANCES

12. The typical floor to floor is approximately 2610mm. The height to the underside of the slab is approximately 2400mm.
13. The area of the 1beds are approximately 39m². A B.A.D.S. compliant 1bed apartment is typically 50+m²
14. The balconies area are approx. 7.5m². B.A.D.S. compliant balconies ranges from 8m² for 1bed to 12m² for 3beds + 1.5m² for the condenser
15. Although the laundry in the apartments are big enough to accommodate a washing machine and dryer, a dryer can not be fitted because of inadequate ventilation. A communal dryer has been fitted in the bin room on each floor to compensate.

The mix and apartment size testing shows that the number of units could be maintained but the overall number of beds will reduce.

DISCLAIMER

To further determine the viability of option A, we recommend that Homes Victoria consider the following to be undertaken:

- A full review of the buildings by a qualified building surveyor, services engineer, and structural engineer to identify any non-compliance to the Building Code that might have been omitted in this review
- The buildings needs to be tested for asbestos. Please note that asbestos removal must be undertaken by qualified contractors and its removal will add significant cost to the towers upgrade option.

In conclusion, in order to assess if Option A is viable, a full cost plan of the changes required will need to be undertaken. Note that even after the full compliance upgrade, the result will be sub-optimal because of the compressed existing floor to floor height at 2610mm instead of 3150mm for a new construction.

Option B : Remodel

Option B was declared non-viable following the result of Option A analysis. The low floor to floor of the existing towers could not be replicated in the new street wall development resulting in doubling up of circulations and lifts as well as blocking the natural light and outlook of the first 3-4 levels of the existing development.

This option would require a significant investment but resulting in a substandard result.

Option C : Redevelop

Option C1

Option C proposes a redevelopment of the property following the planning guidelines set by the corner development by Frasers Property Australia. With street wall consistent with the Frasers Property Australia development and recessed additional levels that would reduce the bulk of the overall development, the proposed developments would comply with building codes, propose the desired mix and apartment size and comply with the B.A.D.S. requirements.

This Option presents the opportunity for improved residential amenity and Urban Design project siting, consistent with current Homes Victoria Project Requirements and Urban Design Guidelines.

Note that this proposal is Subject to Council approval and no professional planning advice was provided.

Option C2

This Option, whilst similar to option C1 it presents the opportunity for banking on the existing tower height and providing a maximized yield whilst providing improved residential amenity and Urban Design project siting, consistent with current Homes Victoria Project Requirements and Urban Design Guidelines.

Note that this proposal is Subject to Council approval and no professional planning advice was provided.

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