

Flagship (Penny Place) Pty Ltd C/- Intro Design Pty Ltd

Demolition of existing building and construction of a 21 storey mixed-use development and a 3 story residential flat building, ancillary car parking, landscaping, public circulation areas and landscaped square

Portion of 27 Angas Street (11-19 Penny Place), Adelaide

020/A068/17

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OVERVIEW

Application No	020/A068/17
KNET ID	2017/23886/01
Applicant	Flagship (Penny Place) Pty Ltd C/- Intro Design Pty Ltd
Proposal	Demolition of existing building and construction of a 21 storey mixed-use development and a 3 story residential flat building, ancillary car parking, landscaping, public circulation areas and landscaped square
Subject Land	Portion of 27 Angas Street (11-19 Penny Place) Adelaide
Zone/Policy Area	Capital City Zone, Central Business Policy Area 13
Relevant Authority	State Commission Assessment Panel
Lodgement Date	3 November 2017
Council	City of Adelaide
Development Plan	Adelaide (City) Development Plan consolidated 20 June 2017
Type of Development	Merit
Public Notification	Category 1
Referral Agencies	Government Architect, Minister for Sustainability, Environment and Conservation (State Heritage Unit, DEWNR), Minister for Housing and Urban Development (Renewal SA), Secretary of the Commonwealth Department of Transport and Regional Services (Adelaide Airport Limited)
Report Author	Ben Scholes, Project Officer
RECOMMENDATION	Development Plan Consent subject to conditions

EXECUTIVE SUMMARY

The application is for demolition of an existing building and construction of a multi-level mixed-use building comprising residential apartments, ground floor commercial tenancy, landscaping and associated parking, and construction of a separate residential flat building comprising 4 dwellings adjacent a landscaped square intended for public use.

The application is a merit, Category 1 form of development subject to mandatory referrals to the Government Architect, the Minister for Sustainability, Environment and Conservation (State Heritage Unit), the Minister for Housing and Urban Development (Renewal SA) and the Commonwealth Secretary for the Department of Transport and Regional Services via Adelaide Airport Limited.

Referral agencies and the City of Adelaide (Council) are generally supportive of the proposed land use, building height and the design and configuration of the development with concerns primarily focused on the potential for compromised public safety arising through the operation and use of the proposed landscaped square which the applicant proposes be vested to the care, control and management of the Council.

As the State Commission Assessment Panel has no authority to compel either party to secure a collectively favourable outcome with respect to the proposed vesting of the land, a series of conditions are recommended to be assigned to any consent granted to confirm final details of public realm strategies and provide assurances regarding community wellbeing should the transfer of the land not eventuate.

The applicant has responded positively to agency feedback provided in the assessment phase, such that the final proposal is considered to respond appropriately to Development Plan policy guiding design and appearance of medium to high scale development in Adelaide's CBD. Overall the applicant has adequately addressed key planning, design and technical issues and accordingly the application is considered to warrant conditional Development Plan Consent.

ASSESSMENT REPORT

1. BACKGROUND

1.1 Strategic Context

On 30 May 2017 the Minister for Planning approved the Capital City Policy Review (Design Quality) Development Plan Amendment introducing new policy intended to:

- reinforce the importance of design quality for new development;
- establish additional requirements for over-height development including zone interface treatments and triggers for over-height allowances; and
- provide guidance regarding built form responses to context and streetscape character.

1.2 Kodo Development – Stage 1

The application is the second and final stage of a mixed-use precinct development, the first stage of which is known as the 'Kodo' apartments approved in Development Application 020/A055/15 in September 2015. Construction of that stage is underway at the north portion of the subject land adjacent the Roma Mitchell Commonwealth Law Courts Building to develop a 31 storey mixed-use tower with commercial and residential land uses, car parking and landscaping.

Discussions between the applicant and the City of Adelaide (Council) regarding the proposed vesting of a substantial portion of the subject land, which the applicant intends to develop as publicly accessible landscaped space and circulation pathways, to Council's care, control and management are currently unresolved.

1.3 Pre-lodgement Process

The applicant engaged in the Department of Planning, Transport and Infrastructure's pre-lodgement service in October 2017, participating in 1 pre-lodgement panel meeting and 1 design review panel session. The concept did not change significantly over this period.

2. DESCRIPTION OF PROPOSAL

The development would involve demolition of an existing 4 storey building and transformer adjacent a portion of the subject land's southern boundary and construction of a 21 storey mixed-use building comprising residential apartments, ground floor commercial / retail tenancy, landscaping and associated car parking at ground floor to level 3, and construction of a separate 3 storey residential flat building comprising 4 dwellings (townhouses) with associated ground floor car parking.

A landscaped civic space encompassing approximately 450m² featuring paved circulation areas and community facilities proposed to the north of the townhouses adjacent Penny Place would integrate with landscaped public realm approved in the development's first stage. Application details are contained in **Attachment 1**, and a summary of the proposal is provided in the following table:

Land Use Description	Mixed-use development comprising ground floor retail and upper level residential land uses (136 dwellings) with associated car parking, and a residential flat building (containing 4 dwellings) with associated car parking
Building Height	21 storeys (20 levels above ground), 71.55 metres above ground
Description of levels	Ground – 14 car parking spaces, 14 storage cages, commercial

	<p>tenancy, apartment entry lobby and mail room, residential lounge, kitchen and amenities, circulation space, bicycle storage room (140 parking spaces), waste storage room, plant rooms / services areas, landscaping and ground floor of residential flat building (4 x 3 storey townhouses)</p> <p><u>Level 1</u> – 40 car parking spaces, 4 storage cages</p> <p><u>Level 2</u> – 40 car parking spaces, 4 storage cages</p> <p><u>Level 3</u> – 42 car parking spaces, 4 storage cages</p> <p><u>Levels 4-20</u> – 1 single bedroom apartment and 7 x 2-bedroom apartments</p> <p><u>Rooftop</u> – lift overrun, roof-mounted plant and equipment</p>
Apartment floor area (excluding balconies)	<p>1 bedroom apartments – 63.2m²</p> <p>2 bedroom apartments – 64.7m² to 74.7m²</p>
Site Access	<ul style="list-style-type: none"> • Vehicle access to mixed-use building via 2 new crossovers of Nelson Street to at-grade and podium-level car parking (existing right of way adjacent southwest corner to be retained) • Vehicle access to townhouses via a new crossover of Penny Place • Pedestrian access via Penny Street and public realm connections to Nelson and Angas Street approved in the Stage 1 (Kodo) development
Car and Bicycle Parking	<ul style="list-style-type: none"> • 140 car parking spaces (136 car parking spaces within mixed-use building, 4 spaces within residential flat building) • 140 bicycle parks for residents, unspecified number for visitors within proposed public realm

3. SITE AND LOCALITY

3.1 Site Description

The subject land for Stages 1 and 2 of the development incorporates 2 allotments described legally in the table below. The development site for this application, generally referred to as 11-19 Penny Place, Adelaide encompasses the southern portion of the allotment 5 which is irregularly shaped and has partial frontages to Angas Street, Nelson Street and Penny Place.

Lot No	Plan No	Street	Suburb	Hundred	Title
A5	D58661	Angas	Adelaide	Adelaide	6160/300
A2	F1918	Angas	Adelaide	Adelaide	6160/301

Of relevance to this application are frontages to Nelson Street of approximately 55 metres and Penny Place of approximately 30 metres. The topography of the site is generally flat, and several easements are established over the land providing rights of way to the benefit of adjoining land owners.

The land is located at the southern edge of the primary pedestrian area delineated by Development Plan Map Adel/1 (Overlay 2A). The site currently contains a 4 storey office building and associated car parking area at the southern portion of the land with frontage to Penny Place, currently tenanted by the SA Police (Adelaide Exhibit Property Section).

The western portion of the land is occupied by a public paid parking lot accessible from Nelson Street via secure entry gate, accommodating 58 car parks and encompassing approximately 1,675m² containing several established trees, none of which are protected under Significant or Regulated Tree legislation.

The approved development will be serviced via one-way vehicle movements through Penny and Seymour Places as endorsed by Council within Development Authorisation 020/A055/15.

3.2 Locality

The locality is characterised by development varying in size, scale and provenance including contemporary, multi-storey government and institutional buildings to the north and west and lower scale commercial premises and residential buildings to the south and east.

The immediate area is dominated by the Roma Mitchell Commonwealth Law Courts facility, a contemporary 10 storey building constructed in 2006 accommodating the Federal, Family and Federal Magistrates Courts and occasionally the High Court. South of the Courts facility are single storey cream brick buildings accommodating SA Police's Adelaide City Watch House and a 4 storey facility at the Carrington Street frontage used as SA Police's Communications and Command Centre.



Figure 1 – Location Map

The 2 storey Bar Chambers building (former dwelling), a State Heritage Place located adjacent the subject land's southwest corner at 34 Carrington Street is a Victorian-style building constructed of red brick and bluestone. Small scale commercial premises accommodating legal and business service providers and a 4 storey mixed-use apartment building are situated further east along Carrington Street, with 2 storey residential development along Penny Place to the subject land's immediate east.

The broader locality contains predominantly commercial and institutional land uses including St Aloysius College to the north opposite the subject land, the 10 storey SA Water building at the southeast corner of Victoria Square, the Adelaide Magistrates Court facility at the corner of Angas and King William Streets and a collection of Heritage Places along King William Street including the Crown and Sceptre Hotel.

4. STATUTORY REFERRAL AGENCY COMMENTS

Referral responses are contained in the **Attachment 4**.

4.1 Minister for Sustainability, Environment and Conservation

The Minister for Sustainability, Environment and Conservation is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008*. The State Commission Assessment Panel (SCAP) must have regard to this advice.

In its capacity as the Minister's delegate the Department of Environment, Water and Natural Resources (State Heritage Unit) considers the proposed development is acceptable in relation to the State Heritage Place at 34 Carrington Street (Bar Chambers building) on the basis of there being no direct affect on the Place's physical fabric. The mixed-use building is not expected to overly dominate the Place's visual presence within the streetscape context of Carrington Street, and the townhouse portion of the proposal building will not interrupt views of the Place, maintaining its visual context.

The mixed-use building's brick-face podium would establish a sympathetic scale relationship and its material expression is considered an appropriate response to the Bar Chambers' visual character. The in-situ concrete of the southern service core is also expected to produce an acceptably neutral backdrop to views of the Place from Carrington Street.

The flexibility in the design of the mixed-use building introduces potential for responses to future land uses in Nelson Street by delivering greater activation of the ground floor frontage, with consequential benefit to the context of the Heritage Place. The State Heritage Unit recommends 3 conditions be assigned to any consent granted, in the interest of resolving material details through design development, to the SCAP's satisfaction.

4.2 Government Architect

The Government Architect is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008*. The SCAP must have regard to this advice. The Associate Government Architect (AGA) has indicated in-principle support for the application in recognition of the following:

- provision of substantial open space at ground floor with access provided between the open space and Nelson Street through the lobby of the mixed-use building;
- provision for future commercial tenancies at the Nelson Street frontage;
- acceptable building height within the Capital City Zone;
- proposed podium height and material response to the scale of the adjoining State Heritage Place;
- rational architectural expression of the residential tower, distinct from the approved first stage of the precinct development reflecting different conceptual approaches;

- horizontal articulation by apartment balconies and secondary articulation by party walls over east and west elevations with vertically expressed windows to the south and north elevations;
- residential expression of townhouse component, responding appropriately to the scale of nearby development;
- efficient apartment configurations offering outlook, access to natural light and ventilation in all habitable rooms and circulation spaces, and functional private open space; and
- provision of sufficient ceiling heights within podium car parking to allow for future adaptability.

Although the AGA considers the reorientation of the apartment tower (north-south instead of east-west) could improve residential amenity and sustainability performance, balanced support for the proposed orientation is offered in recognition of the site's adjacency challenges related to overlooking of the Courts facility.

The AGA also considers an opportunity exists to enlarge balcony dimensions at the podium rooftop (Level 4) to vary apartment offerings and assist in surveillance of public spaces. Further to the offer of measured support, the AGA has indicated the following concerns and recommendations for improvement:

- insufficient passive surveillance to proposed public spaces after daytime hours;
- inactive frontage provided to Nelson Street limiting future development opportunities of adjacent sites;
- adjacency of apartment entrances introducing potential for privacy impacts;
- further design development to provide a clear and intuitive connection between the proposed public square and Nelson Street and provision of a high quality lobby area informed by urban design and wayfinding principles;
- ongoing discussion with the Council to achieve mutually appropriate, generous public space informed by building management, solar access, lighting and landscaping strategies intended for daytime and night-time uses;
- further information to demonstrate proposed air-conditioning enclosures on balconies would mitigate amenity impacts; and
- further information to demonstrate soft landscaping can be successfully maintained and incorporates urban design and CPTED principles.

4.3 Minister for Housing and Urban Development

The Minister for Housing and Urban Development is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008*. The SCAP must have regard to this advice. In its capacity as the Minister's intermediary, Renewal SA (Affordable Housing Unit) made no comment on the proposal.

4.4 Secretary of the Commonwealth Department of Transport and Regional Services

The Secretary is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008* and has power of direction for assessment purposes. In its capacity as the Commonwealth Department's intermediary, Adelaide Airport Limited (AAL) advises the proposal would penetrate the Obstacle Limitation Surface (OLS) at 111 metres Australian Height Datum (AHD) and that an Airspace Approval is required in accordance with the Commonwealth *Airports Act 1996*.

The first stage of the development was approved at 148.65 metres AHD, and provided this application remains below the first stage's approved height, an airspace study would not be required for assessment purposes. The Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) surface is located at 182 metres AHD providing sufficient separation distance to accommodate crane operations during construction.

5. COUNCIL ADVICE

5.1 City of Adelaide

Application details were referred to the City of Adelaide (Council) administration for review and comment. Council has indicated discussions with the applicant regarding its intent to vest a portion of the subject land (the proposed public square) to the Council are ongoing, and that the Council has not made a formal resolution on the matter.

Council advised it does not object to the development subject to the following matters being addressed:

- resolution of the number of on-street permit parking spaces in consultation with permit holders including review of kerbside space conducted in liaison with Council;
- rationalisation of townhouse entry points and service infrastructure to prevent vehicle conflict and ensure adequate pedestrian sight splays adjacent the vehicle entry to townhouse 4;
- provision of casual surveillance opportunities for new public spaces outside of retail use / daylight hours;
- application of CPTED measures within east-west pedestrian link from Nelson Street adjacent the ground floor waste storage room;
- provision of a legible lobby space through a combination of architectural devices and wayfinding; and
- significant refinement of the proposed public square accessed from Penny Place to address pedestrian desire lines and transition spaces between semi-private and public open space consistent with Council requirements and standards.

Technical matters raised by Council in relation to lighting, stormwater management, design and configuration of access points and reinstatement of any damaged Council infrastructure are proposed to be dealt with by assignment of appropriate conditions of any consent granted.

6. PUBLIC NOTIFICATION

The application is a Category 1 development pursuant to Capital City Zone (Public Notification) PDC 40 and in recognition of the subject land's location, isolated from any adjacent Residential Zone. No public notification is required.

7. POLICY OVERVIEW

The subject site is within the Capital City Zone, Central Business Policy Area 13 as described within the Adelaide (City) Development Plan Consolidated 30 May 2017. Relevant planning policies are contained in **Attachment 7** and are summarised overleaf.

7.1 Central Business Policy Area 13

- The Policy Area is the State's pre-eminent economic, governance and cultural hub and will be supported by educational, hospitality and entertainment activities and increased opportunities for residential, student and tourist accommodation.
- Buildings will exhibit innovative design approaches and produce stylish and evocative architecture, including tall and imposing buildings that provide a hard edge to the street and are of the highest design quality.
- Complementary and harmonious buildings in individual streets will create localised character and legible differences between streets, founded on the existing activity focus, building and settlement patterns and street widths.
- Development of a high standard of design and external appearance is anticipated in a way that successfully integrates with the public realm. To enable an activated street level, residential uses (or similar) should be located above ground level.

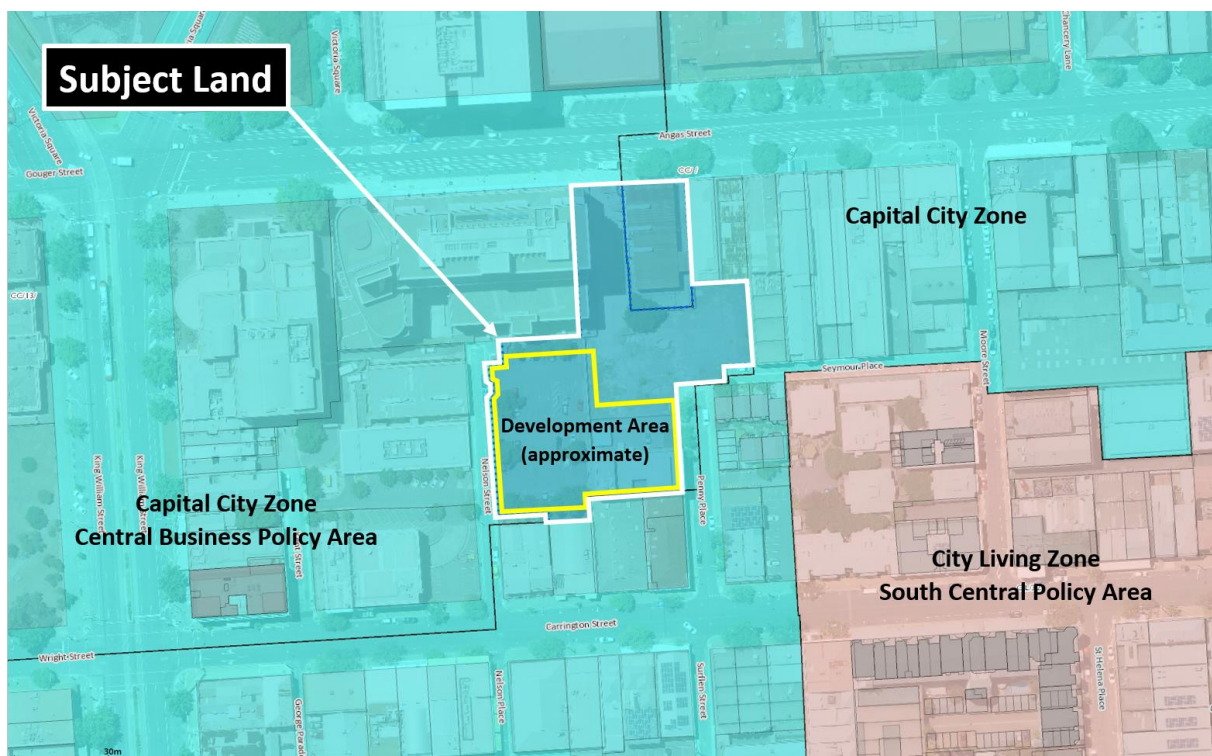


Figure 2 – Zoning Map

7.2 Capital City Zone

- High-scale development is envisaged in the Capital City Zone with high street walls that frame the streets and an interesting pedestrian environment and human scale created at ground level.
- In important pedestrian areas, buildings will be set back at higher levels above the street wall to provide views to the sky and create a comfortable pedestrian environment.
- Minor streets and laneways will have a sense of enclosure (a tall street wall compared to street width) and an intimate, welcoming and comfortable pedestrian environment with buildings sited and composed in a way that responds to the buildings' context.
- A comprehensive, safe and convenient movement network throughout the City will develop, focusing on the provision of linkages on both public and private land between important destinations and public transport.

7.3 Council Wide

Council Wide provisions provide guidance on the desire for increased levels of activity and interest at ground level; a high standard of design; appropriate bulk and scale of buildings and positive contribution to streetscapes including interfaces with places of heritage significance. Multi-level car parks and short stay public use of ancillary car parking spaces are discouraged at ground floor street frontages within the Primary Pedestrian Area.

7.4 Overlays

7.4.1 Airport Building Heights

Prescribed height limits are specified for the subject land under the Adelaide (City) Airport Building Heights Map Adel/1 (Overlay 5).

Referral to the Department of Transport and Regional Services through AAL is required where a development would exceed the Obstacle Limitation Surface contours shown on Overlay 5. Approval is required under the Commonwealth *Airports Act 1996* for structures that penetrate prescribed air space as defined in the Act.

7.4.2 Affordable Housing

The subject land is located within the Affordable Housing Designated Area in Development Plan Map Adel/1 (Overlay 5a).

The Overlay recommends integration of affordable housing with residential and mixed-use development, and development comprising 20 or more dwellings to include a minimum of 15 percent affordable housing.

8. PLANNING ASSESSMENT

The SCAP is the relevant authority pursuant to Schedule 10(4) of the *Development Regulations 2008*:

4B (1) Development in the area of the Corporation of the City of Adelaide where the total amount to be applied to any work, when all stages of the development are completed, exceeds \$10 000 000

The application has been assessed against the relevant provisions of the Adelaide (City) Development Plan, contained in **Attachment 7**.

8.1 Quantitative Provisions

	Development Plan Guideline	Proposed	Guideline Achieved	Comment
Land Use	The highest concentration of office, retail, mixed business, cultural, public administration, hospitality, educational and tourist activities	Residential dwellings – 136 apartments, 4 townhouses, commercial tenancy and associated car parking	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Building Height	No prescribed height limit	21 storeys, 71.55 metres above ground	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	

Car Parking	No specific requirement for provision of on-site car parking for development within the Capital City Zone	140 car parking spaces (136 car parking spaces within mixed-use building, 4 spaces within residential flat building)	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Bicycle Parking	1 for every dwelling <150m ² 1 for every 10 dwellings for visitors	140 bicycle parks for residents Unspecified number for visitors	YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input checked="" type="checkbox"/>	Refer to section 8.6
Boundary Setbacks	Buildings should be positioned regularly on the site and built to the street frontage, except where a setback is required to accommodate outdoor dining or provide a contextual response to a heritage place	1.59 metres from Nelson Street, 6.35 metres above Level 4 2.68 metres from northern boundary 2.7 metres from Penny Place	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Apartment Floor Area (excluding balconies)	1 b/r dwellings – 50m ² 2 b/r dwellings – 65m ²	1 b/r dwellings – 63.2m ² 2 b/r dwellings – 64.7m ² to 74.7m ²	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	Minor shortfalls considered acceptable
Private Open Space	1 b/r dwellings – 8m ² 2 b/r dwellings – 11m ² Minimum depth of 2 metres	1 b/r dwellings – 18m ² 2 b/r dwellings – 20m ² to 44m ² Balcony depths vary between of 1.3 (for townhouses) and 1.8 metres (apartments)	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	Shortfalls in minimum balcony depths considered acceptable
Storage	1 b/r dwellings – 8m ³ 2 b/r dwellings – 10m ³	1 b/r dwellings – 9.15m ³ 2 b/r dwellings – 12.2m ³	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	

8.2 Land Use and Character

Development in the Policy Area should contribute to its role and function as the State's premier business district, having the highest concentration of office, retail, business, educational, hospitality and tourist activities with increased opportunities for residential accommodation.

The proposed residential and commercial land uses would contribute to the area's Desired Character by introducing envisaged forms of development and an increased residential population with a corresponding increase in activity. Residential development including a contribution of affordable housing is generally proposed above ground level as encouraged by Policy Area PDC 3 and is supported, as is the intended civic square adjacent Penny Place.

The townhouse portion of the application would introduce an appropriate connection between existing 2 storey residences on the east side of Penny Place and more substantial high-density development proposed and approved on the balance of the subject land, providing a suitable residential setting and domestic scale at the fringes of the City Living Zone.

8.3 Building Height

The subject land is located within a portion of the Capital City Zone where no building height limit is prescribed, although Zone PDC 22(c) envisages diminished building height where development would be located adjacent a Heritage Place. The Central Business Policy Area also advocates buildings of a height that ensures airport operational safety is not adversely affected.

At 21 storeys or 71.55 metres to the upper parapet, the proposed building height is considered appropriate in recognition of the desire for a tall street wall and sense of enclosure in minor streets and laneways in this location. The applicant's intent to introduce a smaller scale of built form compared to the Kodo apartment tower is supported and as indicated by AAL, is expected to be considered favourably by the Department of Transport and Regional Services assessment against the Commonwealth *Airports Act 1996*.

Although the apartment tower would introduce considerable bulk and mass in reasonably close proximity to the Capital City Zone's boundary with the City Living Zone, this scale is expected to be moderated by the 3 storey townhouse portion of the application and existing built form along Carrington Street. No objections to proposed building height have been raised by referral agencies or the Council, and accordingly the proponent's aspirations for building height are acceptable.

8.4 Design and Appearance

Buildings in the Central Business Policy Area will exhibit innovative design approaches and produce stylish and evocative architecture of the highest design quality including tall and imposing buildings that provide a hard edge to the street. Development should be of a high standard of architectural design and finish to produce a variety of design outcomes of enduring appeal and contemporary juxtapositions providing new settings for heritage places.

The proposed development is the culmination of the applicant's precinct masterplan in which the primary buildings are sited and composed to respond suitably to the subject land's context, particularly the Federal Courts building, orientation to the City grid and landscaped space opportunities.

The mixed-use building configures separate lift, fire stair and service cores at the building's northern and southern extents intended to increase floorplate efficiency, with a 4 storey podium structure providing the tower's base accommodating car parking. Extensive glazing, balconies, party walls and floor to ceiling air-conditioning enclosures provide horizontal and vertical articulation with service cores composed of in-situ concrete with vertically expressed obscure glazing.

A brick screen façade over the podium base would differentiate it from the tower and appropriately reference the historic character of the Bar Chambers building, whereas the southern stair core is expected to produce an acceptably neutral backdrop to views of the State Heritage Place from Carrington Street.

The AGA has confirmed strong support for the residential tower's architectural expression which is considered to reflect the applicant's design intent to deliver a rational development outcome and differentiate conceptual design approaches within the precinct. The townhouse portion is also supported as an appropriate response to adjacent residences.

The proposal is expected to result in commendable additions to the Zone and Policy Area, providing contemporary built forms addressing the Development Plan's desire for high quality architectural design and hard streetscape edges. Provision of a final

schedule of external materials is recommended as a condition of any consent granted to ensure the quality of material finishes suits this significant location.

Concerns raised by the AGA and Council related to streetscape activation, occupant amenity and the public realm are discussed in the following sections.

8.4.1 Interface

The Capital City Zone's interface provisions recommend measures to adequately manage amenity impacts on development in the City Living Zone caused by overshadowing, massing, building proportions and traffic.

Shadow diagrams included in application details predict the extent of shade cast by the apartment tower over adjacent residences and the City Living Zone to the south and east, which would be notable during the winter solstice but not significantly greater than that expected by the approved Kodo tower, neither of which would be contrary to Council Wide overshadowing policy regarding minimum solar access allowances at 22 June.

Above level 4, the tower's west and east façades would be setback approximately 4.8 metres and 10.3 metres respectively from the podium's building line which would provide relief to the tower's mass, reference the lower scale of nearby buildings and contribute to appealing pedestrian conditions desired in the Capital City Zone.

Although the AGA considers reorientation of the apartment tower to align with the site's southern boundary could improve occupant amenity and sustainability performance, the tower's proposed configuration is supported in recognition of proximity to the Courts facility and potential overlooking impact, identified as a concern of occupants of the Courts building following approval of the Kodo development. Obscured glazing over the northern stair core is proposed to mitigate this privacy risk.

Some overlooking from apartment balconies into adjacent land and buildings through oblique and long views are expected, however this would not be unreasonable in this central CBD setting. Interface conditions expected to arise from the proposal are therefore considered acceptable.

8.4.2 Public Realm

Non-residential land uses are encouraged at ground floor throughout the Zone including shops, cafés and restaurants to generate high levels of pedestrian interest and activity complemented by an appealing urban environment through the use of building articulation and fenestration, façade openings, verandahs, balconies and other forms of weather protection.

Safe and convenient pedestrian movement should be facilitated by a clearly designated, well-lit network of east-west and north-south links connected to public transport and areas of public activity.

The proposal has the potential to provide strategic thoroughfares for pedestrians and cyclists and consolidate a mid-block connection between Angas and Carrington Streets in close proximity to Victoria Square which, if executed effectively, would be of significant benefit to the precinct and broader locality.

In tandem with the applicant's intent to provide a central landscaped area adjacent Penny Place, the use of glazing over east-facing ground floor façades would delineate the apartment lobby, resident lounge / kitchen and commercial

tenancy introducing an active edge sheltered by a colonnade structure providing quality transitional space between internal and external areas.

Although the applicant admits further resolution of the apartment lobby will occur during design development, it has reconfigured the northern stair core and lobby layout to respond to agency and Council concerns by relocating the fire control room and mail room and adding a glazed airlock, joinery seat an additional section of glazing at the northern façade to improve legibility and remove a potential concealment space adjacent the Courts building.

The applicant asserts active surveillance would be provided in the form of security cameras with all public areas to be well-lit through the use of wall-mounted LED fittings, pole mounted lighting and in-ground lighting in key areas to assist in wayfinding and promote public safety during night time periods. Tract Consultants also amended landscaping details to improve visual legibility and physical access to the lobby, and provide clear sightlines beneath tree canopies across the landscaped space as shown below in Figure 3.

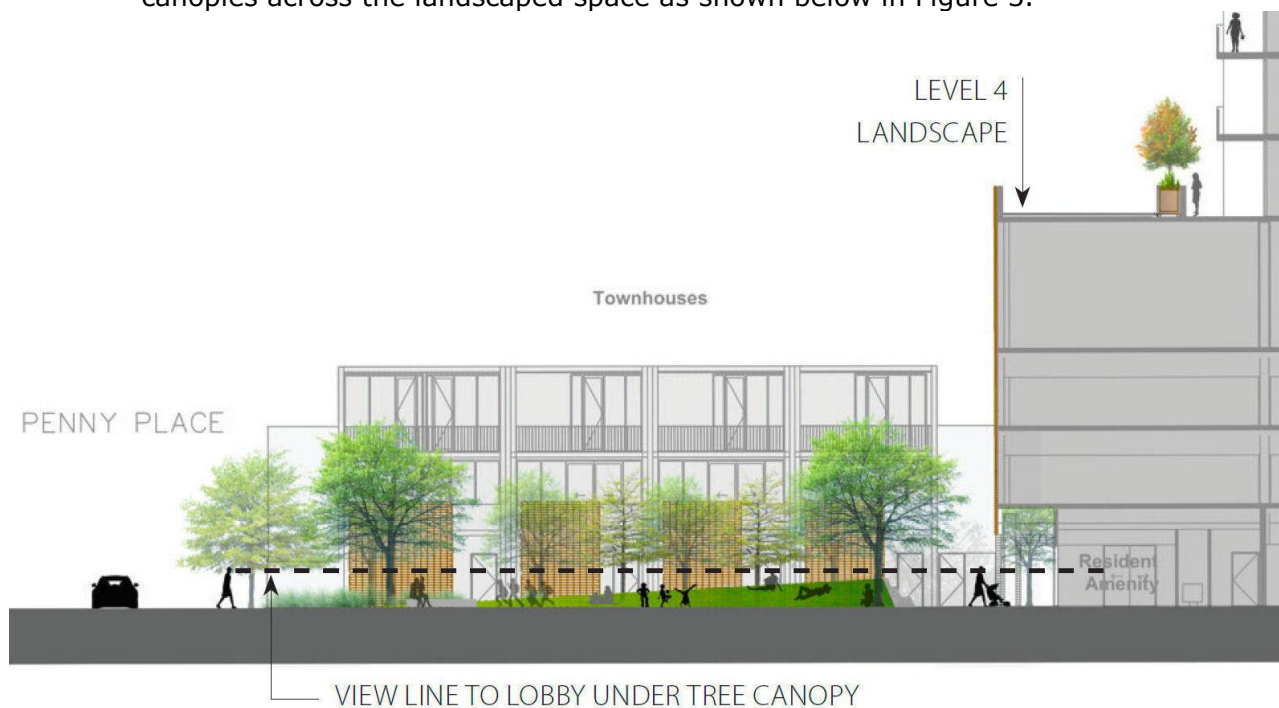


Figure 3 – Section of proposed landscaped space

Council recommends significant refinement of the proposed public square to address pedestrian desire lines and transition spaces between semi-private and public space consistent with Council requirements. The AGA encourages the applicant to continue discussions with Council to achieve mutually appropriate public space informed by building management, solar access, lighting and landscaping strategies to service daytime and night-time uses.

Both the Council and applicant have indicated joint discussions regarding the potential vesting of the proposed public square to the Council's care, control and management are unresolved and remain subject to further detailed design, deliberation and official agreement. The SCAP is not considered to have formal authority to compel either party to secure a collectively favourable outcome with respect to the vesting of the land to Council, which would ultimately be at the Council's absolute discretion.

Accordingly a series of conditions are recommended to be assigned to any consent granted to confirm the final configuration and functionality of public realm strategies including landscaping, lighting, communal facilities, wayfinding, surveillance and security to be applied in the design, operation and maintenance of the proposed public square.

Should arrangements for vesting of the land not be resolved to the agreement of Council these conditions should offer some confidence that high priority details of this element of the proposal would be rigorously considered, to the reasonable satisfaction of the SCAP, and that ongoing responsibility for the land in question would remain with the property owner and / or body corporate.

The AGA also advocates further design development to provide a clearer and more intuitive east-west connection between Nelson Street and the proposed public square to maximise engagement with the public realm.

Application details include a concept shown below in Figure 4 demonstrating a means of enabling future adaptation of the ground floor car park to strengthen the desired connection through deletion of car parking, increasing commercial tenancy area and modifying the apartment lobby.

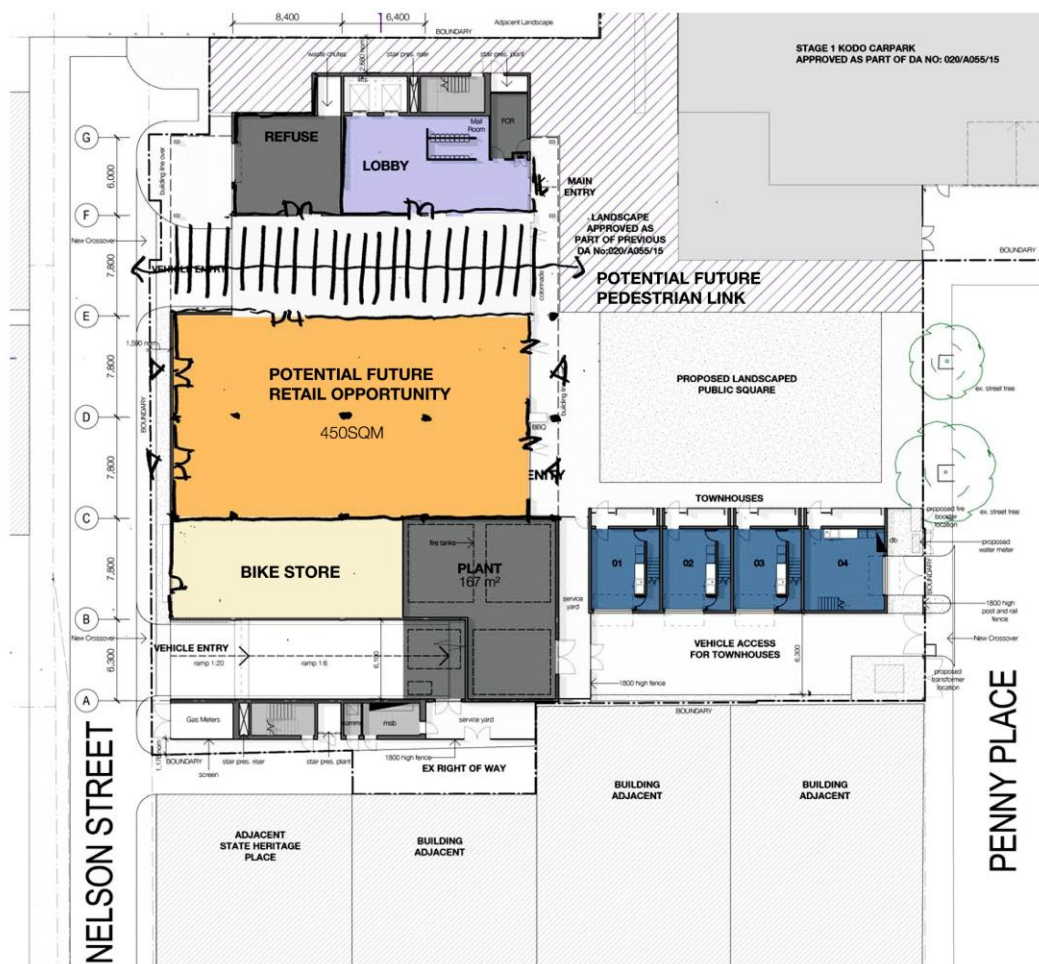


Figure 4 – Future Retail & Pedestrian Link Opportunity

The AGA and State Heritage Unit acknowledge the conceptual potential for this adaptation noting ground floor ceiling heights available for an expanded commercial tenancy of roughly between 4.3 and 5.3 metres, sufficient for alternative uses better suited to streetscape activation, should viable opportunities for compatible uses emerge in Nelson Street in the future.

Overall, the applicant has made some concessions to respond to agency and Council concerns and recommendations for further development of public realm conditions at ground level, and improvements to anticipated pedestrian experiences over the subject land.

These responses are generally expected to enhance outcomes for the community in terms of pedestrian movement, recreation and opportunities for social interaction in the precinct and make fundamentally positive contributions to the urban environment in this setting, consistent with relevant Development Plan objectives.

In combination with commitments to ongoing collaboration and effort by both the applicant and the Council, the proposed conditions referred to earlier are considered to provide a means of assuring an acceptable level of amenity and integrity of the proposed public realm, in support of the shared aspiration to deliver a high quality public place and community asset.

8.4.3 Occupant Amenity

Council Wide (Medium to High Scale Residential) policy advocates development designed to provide a high standard of amenity and environmental performance through access to natural light and ventilation, outlook, storage area, functional layouts and adaptability to meet changing living needs.

The apartment tower would offer single and 2 bedroom dwellings within rectangular modules of 6 metres in depth, with substantial balconies separated by party walls and air-conditioning enclosures as shown below in Figure 5. The proposed townhouses would provide alternative 3 storey living options with modest north-facing outdoor spaces at levels 1 and 2 overlooking the proposed landscaped square.

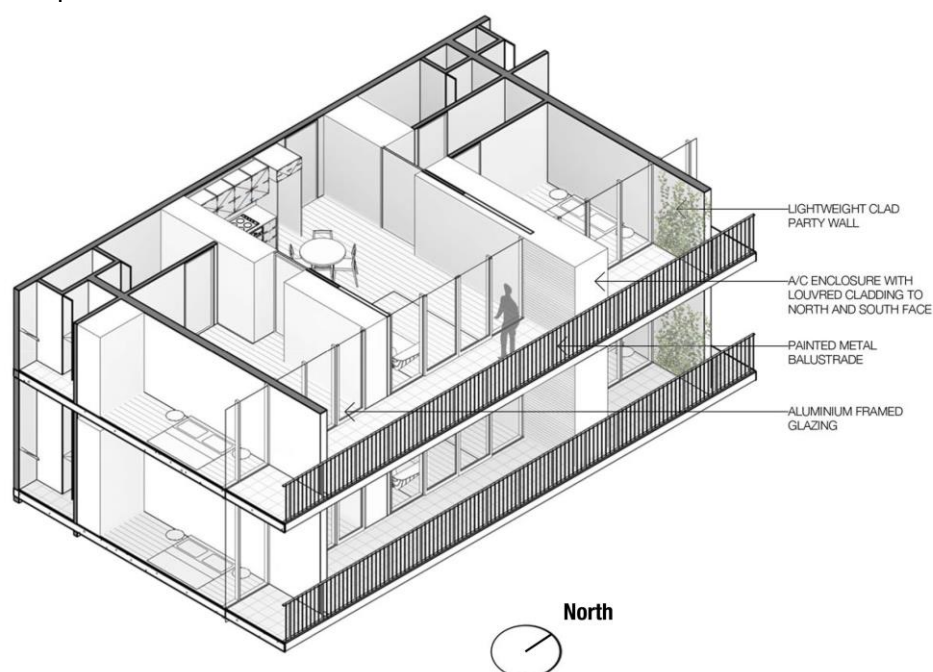


Figure 5 – Typical Apartment Layout (north facing)

Although relatively few apartment types are proposed, they would generally feature sufficient interior dimensions including storage areas. Balcony depths for apartments and the townhouses would be less than the recommended 2-

metre minimum, however any functional shortfall would be offset by the generous quantity of private open space provided throughout.

The AGA supports the proposed mix of dwelling types including affordable housing and highly efficient residential layouts offering quality outlook and access to natural light and ventilation to all habitable rooms. The reconfigured apartment lobby would contribute to an improved sense of address and identifiable building entry, and the introduction of glazing over the north and south service cores will provide natural light to the central corridor.

In response to the AGA's recommendation for larger balconies at Level 4 to vary apartment offerings and assist in surveillance of public spaces, the applicant has increased balcony dimensions by an average of over 55 percent of their original size including extensions of west-facing balconies to the podium edge to directly overlook Nelson Street. The applicant has chosen not to review the adjacency of apartment entrances identified by the AGA as a deficiency, citing a priority set on achieving a highly rationalised floorplan layout.

Overall, the proposal would provide for a suitably high standard of residential amenity as envisaged by Development Plan policy and is supported.

8.5 Heritage

Council Wide (Heritage and Conservation) policy encourages development that retains the heritage value and setting of a heritage place and its built form contribution to the locality. The Department of Environment, Water and Natural Resources (State Heritage Unit) considers the proposed development to be acceptable and demonstrates a reasonable design response to the State Heritage Place at 34 Carrington Street, for the following reasons:

- no direct affect on the physical fabric or material heritage values of the Place;
- no expectation of dominance or interruption of the Place's visual presence within the context of Carrington Street;
- a sympathetic scale relationship between the brick-face podium and the Place, assisted by:
 - spatial separation provided by the laneway between each site;
 - singular expression of form arising from building setbacks above podium level; and
 - materiality and architectural differentiation between the podium and tower.

The in-situ concrete southern service core is expected to produce an acceptably neutral backdrop to the Place, subject to endorsement of the final resolution of off-form concrete finish in consultation with referral agencies. The State Heritage Unit recommends 3 conditions be assigned to any consent granted in the interest of resolving material details through design development to the SCAP's satisfaction.

8.6 Traffic Impact, Access and Parking

Development should provide safe, convenient and comfortable movement and means of access to land by increasing the permeability of the pedestrian network and providing an adequate supply of on-site vehicle parking. The applicant commissioned GTA consultants to undertake a transport impact assessment of the proposal as discussed in the following sections.

8.6.1 Site Access

Vehicle access to the proposed apartment tower would occur via 2 crossovers of Nelson Street, providing access to the ground floor parking area and waste storage room to the north, and to the upper level car parking via ramp constructed at the south crossover. The proposed townhouses will be accessible by 2 crossovers of Penny Place.

6 permit parking spaces and 2 time-restricted (2 hour) parking spaces exist on the east side of Nelson Street. To accommodate the development, including removal of existing access points, the applicant considers up to 5 on-street parking spaces are feasible.

The proposed Nelson Street access arrangement will require resolution of on-street permit parking spaces in consultation with permit holders including review of kerbside space conducted in liaison with Council. An advisory note is proposed to establish the applicant's responsibility in this regard.

8.6.2 Vehicle Parking

No specific requirement for provision of on-site car parking arises for residential development within the Capital City Zone.

Although multi-level car parks and short stay public use of ancillary car parking spaces are discouraged at ground floor street frontages in the Primary Pedestrian Area, the proposed treatment of the podium car parking facility is considered to be compatible with the setting of the subject land, as discussed earlier.

A total of 140 car parks would be provided for resident and visitor use. No parking spaces would be allocated for the ground floor commercial use, which GTA considers to be associated with the development and surrounding buildings, and is unlikely to generate substantial parking demand.

140 secure bicycle parking spaces and a bicycle workshop will be provided at ground floor, fully satisfying residential and employee demand. Visitor bicycle parking is contemplated in the public realm area included in the Kodo development to accommodate visitor parking demand, although the applicant does not specify the proposed number of parking spaces to be provided.

A condition requiring documented evidence of 14 additional bicycle parks being included within the development is proposed to be assigned to any consent granted, to ensure parking demand of visiting cyclists would be fully catered for.

8.6.3 Traffic Impact

GTA's assessment of traffic generation using the New South Wales Roads and Maritime Service "*Guide to Traffic Generating Developments – Updated August 2013*" concluded the development will generate up to 20 vehicle movements during peak hours, with a total of 182 vehicle movements daily.

GTA considers the low volume of additional traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

8.7 Environmental Factors

Development in the Council area should be designed to ensure public safety and security are maintained, essential services are provided without unreasonable disruption or disturbance to the community, micro-climatic impacts are minimised and that new built form is compatible with the long term sustainability of the environment.

8.7.1 Crime Prevention

Development should promote community safety and security in the public realm and within development, through the promotion of natural surveillance and other design measures. As discussed earlier, concerns have been raised by Council and the AGA regarding potential risks to public safety associated with the proposed public square adjacent Penny Place.

The applicant asserts its crime prevention through environmental design (CPTED) strategy for the public realm has been adapted from the "*Crime prevention and the assessment of development applications*" guidelines under section 79C of the New South Wales *Environmental Planning and Assessment Act 1979* with reliance placed on lighting, landscape design and delineation of open space to ensure passive surveillance, deterrence of anti-social behaviour and prevention of overt criminal activity.

Tract consultants specification of landscaping including small shrubs and low groundcovers will ensure clear fields of view across the square and adjacent laneways to contribute towards a general perception of safety and security in the area.

Retail uses in each component of the precinct development will promote activity with potential to extend into evening hours, and the residential population within each tower could be expected to provide a reasonable level of surveillance over the public realm and communal spaces after dark.

Conditions requiring further details of public realm strategies are considered to provide adequate confidence in the effectiveness of intended CPTED measures. The applicant's intent to develop the design of the proposed landscaped space in collaboration with Council will also ensure appropriate regard for public safety is applied in the detailed design of this element of the development.

8.7.2 Noise Emissions

The applicant engaged WSP to undertake an acoustic assessment which involved an environmental noise survey conducted at the subject land and nearby streets.

The assessment concluded the development would be capable of complying with the acoustic requirements outlined in the Development Plan through the use of single and double glazed insulated glass-unit windows and doors, and concrete floor slabs of minimum 150mm thickness.

WSP also indicate that noise emissions from balcony-mounted air-conditioning condenser unit enclosures would meet the EPA environmental noise criteria set out in the Environment Protection (Noise) Policy 2007, adequately addressing concerns raised by the AGA in relation to potential for diminished resident amenity.

A standard condition requiring acoustic attenuation is proposed to be assigned to any consent granted to ensure building occupants and adjacent noise-sensitive uses are not unreasonably disturbed by noise generated through the operation of the development.

8.7.3 Waste Management

Development Plan policy recommends provision of a dedicated area for on-site collection and sorting of recyclable materials and refuse to be provided within all new development. Development greater than 2,000 square metres in floor area should manage waste through the use of a dedicated area for collection and sorting of general waste, recyclables and organic waste.

Colby Industries was commissioned to prepare a waste management plan for the development aligned with the South Australian Better Practice Guide – Waste Management in Residential or Mixed-Use Developments (Zero Waste SA, 2014).

Residents would transfer waste and recyclables to the ground floor refuse storage room via waste chutes accessible at the northern end of the central corridor adjacent the lift core over all floor levels within the apartment tower.

Refuse collection would occur adjacent to the waste storage room adjacent the stair core at the northern end of the site. A rear-lift refuse collection truck (and other service vehicles) would enter Nelson Street in a forward direction and reverse into the loading area. Bins would be wheeled from the bin storage room to the loading area for collection. The refuse vehicle would exit to Nelson Street in a forward direction.

Council administration has reviewed the proposed waste management layout and confirmed the design can be accommodated within the Council's waste collection service and accordingly, waste management arrangements are considered appropriate.

8.7.4 Energy Efficiency

Buildings within the Council area should provide adequate thermal comfort and minimise the need for energy use for heating, cooling and lighting through design measures specified in the Development Plan's Council Wide (Environmental) policy.

Analysis of the predicted performance of the east and west façades has been undertaken by Woods Bagot supporting the proposed orientation of the building with regards to quality of outlook and management of solar loading. All apartment types are modelled to meet the required minimum NatHERS rating of 5 stars and an average rating of greater than 6 stars using a mid-level double glazed solution.

Katnich Dodd reviewed application details and provided a statement indicating the proposal would be able to satisfy the minimum requirements of the National Construction Code and Building Code of Australia energy efficiency requirements (Parts A-J) subject to performance based alternative solutions to be further developed during detailed design.

Provided the development is undertaken as planned, the proposed dwelling designs will align appropriately with the Development Plan's energy efficiency policy.

8.7.5 Wind Analysis

Development should be designed and sited to minimise micro-climactic impact on adjacent land or buildings, including detrimental effects of wind patterns. The applicant engaged Vipac Engineers and Scientists to prepare a statement of wind effects anticipated for the ground floor areas adjacent to the proposed development, which concluded that:

- the proposed development would not generate wind conditions in excess of the criterion for safety;
- most ground level footpaths and building entrances would be expected to have wind conditions within the recommended criteria; and
- 2 corners on Nelson St are likely to experience elevated wind conditions due to corner acceleration. However, the proposed porous car park walls will reduce wind levels on the ground floor to within the recommended comfort criteria.

As such, Vipac makes no recommendations to alter the building form design for the pedestrian-level comfort within the anticipated wind environment.

8.7.6 Stormwater Management

Development Plan policy encourages stormwater management systems designed and located to improve the quality of stormwater, minimise pollutant transfer to receiving waters and protect downstream receiving waters from high levels of flow.

The applicant engaged the Robert Bird Group to prepare a stormwater management plan for the proposed development.

The submitted stormwater management plan concludes that stormwater discharge rates predicted from the proposed development would be less than the pre-development flows, and that water quality would be improved from the existing pre-development discharge from the car parking area.

The discharge to the kerb and gutter would be facilitated by standard City of Adelaide steel channels as no stormwater infrastructure exists in Nelson Street and Penny Place.

8.7.7 Site Contamination

Council Wide (Environmental – Contaminated Sites) policy recommends that where there is evidence or reasonable suspicion that land may have been contaminated, development should only occur where it is demonstrated that the land can be made suitable for its intended use prior to commencement of that use.

Application details provide no evidence that any measures have been taken to ascertain whether any potential exists for site contamination caused by previous use of the site. A condition is proposed to be assigned to any consent granted that a statement from a suitably qualified environmental engineer demonstrating suitability of the site for its intended use be provided prior to the commencement of construction.

9. CONCLUSION

The applicant proposes a mixed-use development in a central CBD location as the final stage of a precinct redevelopment project incorporating commercial and residential uses

and public realm improvements with potential to provide significant benefits for the subject land and broader locality.

Referral agencies and Council are generally supportive of the proposed land use, building height, design and configuration of the development with concerns primarily focused on the potential for diminished public safety through the operation and use of the proposed landscaped square which the applicant proposes be vested to the care, control and management of the Council.

As the State Commission Assessment Panel has no authority to compel either party to secure a collectively favourable outcome with respect to the vesting of the land, a series of conditions are recommended to be assigned to any consent granted to confirm final details of public realm strategies and provide assurances regarding community wellbeing should the transfer of the land not eventuate.

The applicant has responded positively to advice provided during the pre-lodgement service and to agency feedback in the assessment phase, such that the final proposal is considered to respond appropriately to Development Plan policy guiding design and appearance of medium to high scale development in Adelaide's CBD.

Overall the applicant has adequately addressed key planning, design and technical issues and accordingly the application is considered to warrant Development Plan Consent, subject to conditions.

10. RECOMMENDATION

It is recommended that the State Commission Assessment Panel:

- 1) RESOLVE that the proposed development is NOT seriously at variance with the policies in the Development Plan.
- 2) RESOLVE that the State Commission Assessment Panel is satisfied that the proposal generally accords with the related Objectives and Principles of Development Control of the Adelaide (City) Council Development Plan.
- 3) RESOLVE to grant Development Plan Consent to the proposal by Flagship (Penny Place) Pty Ltd C/- Intro Design Pty Ltd for demolition of existing building and construction of a 21 storey mixed use development and a 3 story residential flat building, ancillary car parking, landscaping, public circulation areas and landscaped square at 11-19 Penny Place, Adelaide subject to the following conditions of consent.

PLANNING CONDITIONS

1. That except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in strict accordance with the details and following plans submitted in Development Application No 020/A068/17.

Plans by Woods Bagot

Sheet Title	Sheet Number	Revision	Date
Demolition Plan	SK-01	B	27/10/2017
Ground Plan	SK-02	G	15/01/2018
Level 1 Carpark	SK-03	G	21/12/2017
Typical Level 2-3 Carpark	SK-04	G	21/12/2017
Level 4 Apartments	SK-05	G	15/01/2018
Typical Level 5-20 Apartments	SK-06	G	15/01/2018

Roof Plan	SK-07	E	15/01/2018
Overall Elevation North	A SK-08	B	15/01/2018
Overall Elevation East	A SK-09	B	15/01/2018
Overall Elevation South	A SK-10	D	15/01/2018
Overall Elevation West	A SK-11	D	15/01/2018
Section A	A SK-12	D	21/12/2017
Section B	A SK-13	D	21/12/2017

Plans by Tract Consultants

Sheet Title
Ground Level Landscape Plan
Level 4 Landscape Plan
Overall Landscape Section

Vehicle Parking

2. All vehicle car parks, driveways and vehicle entry and manoeuvring areas shall be designed and constructed in accordance with Australian Standards (AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009) and be constructed, drained and paved with bitumen, concrete or paving bricks in accordance with sound engineering practice and appropriately line marked to the reasonable satisfaction of the State Commission Assessment Panel prior to the occupation or use of the development.
3. Prior to Development Approval for superstructure works the applicant shall submit, to the reasonable satisfaction of the State Commission Assessment Panel, a final site (ground floor) plan documenting a total of 14 additional bicycle parking spaces on the subject land in appropriate locations ensuring ease of access and convenience to users.
4. All bicycle parks shall be designed and constructed in accordance with Australian Standard 2890.3-2015.

Acoustics

5. Air conditioning or air extraction plant or ducting shall be screened such that no unreasonable nuisance or loss of amenity is caused to residents and users of properties in the locality to the reasonable satisfaction of the State Commission Assessment Panel.

Environment

6. Prior to Development Approval for superstructure works the applicant shall submit, to the reasonable satisfaction of the State Commission Assessment Panel, a final site (ground floor) plan documenting specific Crime Prevention Through Environmental Design principles intended for public circulation areas including lighting, access control mechanisms, communal facilities, wayfinding and active surveillance strategies including (but not limited to) proposed locations of closed-circuit television camera units.
7. A detailed landscaping plan shall be submitted to the reasonable satisfaction of the State Commission Assessment Panel prior to Building Rules Consent being granted for superstructure works. This shall identify planting medium depths, irrigation methods and other features of the landscaping scheme to demonstrate viability of all plantings and lawn. The updated detailed landscaping plan shall be reflected, as necessary, in all other relevant plans and drawings (including, for example, sectional drawings).

8. All stormwater design and construction shall be in accordance with Australian Standard AS/NZS 3500.3:2015 (Part 3) to ensure that stormwater does not adversely affect any adjoining property or public road.
9. All external lighting on the site shall be designed and constructed to conform to Australian Standard (AS 4282-1997).
10. A Construction Environment Management Plan (CEMP) shall be prepared and implemented in accordance with current industry standards – including the EPA publications “Handbook for Pollution Avoidance on Commercial and Residential Building Sites – Second Edition” and, where applicable, “Environmental Management of On-site Remediation” – to minimise environmental harm and disturbance during construction. A copy of the CEMP shall be provided to the State Commission Assessment Panel prior to commencement of site works.
11. All Council, utility or state-agency maintained infrastructure (i.e. roads, kerbs, drains, crossovers, footpaths etc.) that is demolished, altered, removed or damaged during the construction of the development shall be reinstated to Council, utility or state agency specifications. All costs associated with these works shall be met by the proponent.

State Heritage

12. Prior to Development Approval for superstructure works, the applicant shall submit final details confirming the following, to the reasonable satisfaction of the State Commission Assessment Panel in consultation with the Department of Environment, Water and Natural Resources:
 - a) the cladding system to be used;
 - b) the selection of masonry units including colour and texture;
 - c) the location and detail of perforated zones including their solid/void ratio;
 - d) detailing of corners and junctions; and
 - e) detailing of the framing and glazing of apertures.
13. Prior to Development Approval for superstructure works, the applicant shall submit final details confirming the following details, to the reasonable satisfaction of the State Commission Assessment Panel in consultation with the Department of Environment, Water and Natural Resources:
 - a) how junctions between floor-by-floor concrete pours are to be managed;
 - b) whether the faces are expressed as monolithic surfaces or articulated into smaller visual divisions;
 - c) the surface texture (eg smooth off-form finish using steel forms, textured off-form finish, 3D off-form finish); and
 - d) whether the surfaces are to remain in their off-form finish or have an applied finish, and suitable quality control measures to achieve consistency of finish to an acceptable standard.

External Materials

14. Prior to Development Approval for superstructure works, the applicant shall submit a final detailed schedule of external materials and finishes to the reasonable satisfaction of the State Commission Assessment Panel in consultation with the Associate Government Architect.

Site Contamination

15. A statement by a suitably qualified environmental engineer that demonstrates that the land is suitable for its intended use (or can reasonably be made suitable for its intended use) shall be submitted to the State Commission Assessment Panel prior to Development Approval being granted for substructure works.

ADVISORY NOTES

- a. The proposed access arrangement at the subject land's frontage of Nelson Street will require resolution of on-street permit parking spaces in consultation with permit holders including review of kerbside space conducted in liaison with the City of Adelaide.
- b. Any changes to the proposal for which planning consent is sought or granted may give rise to heritage impacts requiring further consultation with the Department of Environment, Water and Natural Resources, or an additional referral to the Minister for Sustainability, Environment and Conservation. Such changes would include for example (1) an application to vary the planning consent, or (2) Building Rules documentation that incorporates differences from the proposal as documented in the planning application.
- c. If an archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the SA Heritage Council shall be notified.
- d. Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.
- e. If Aboriginal sites, objects or remains are discovered during excavation works, the Aboriginal Heritage Branch of the Aboriginal Affairs and Reconciliation Division of the Department of the Premier and Cabinet (as delegate of the Minister) should be notified under Section 20 of the *Aboriginal Heritage Act 1988*.
- f. This Development Plan Consent will expire after 12 months from the date of this Notification, unless final Development Approval from Council has been received within that period or this Consent has been extended by the State Commission Assessment Panel.
- g. The applicant is also advised that any act or work authorised or required by this Notification must be substantially commenced within 1 year of the final Development Approval issued by Council and substantially completed within 3 years of the date of final Development Approval issued by Council, unless that Development Approval is extended by the Council.
- h. The applicant has a right of appeal against the conditions which have been imposed on this Development Plan Consent. Such an appeal must be lodged at the Environment, Resources and Development Court within two months from the day of receiving this notice or such longer time as the Court may allow. The applicant is asked to contact the Court if wishing to appeal. The Court is located in the Sir Samuel Way Building, Victoria Square, Adelaide (telephone number 8204 0289).

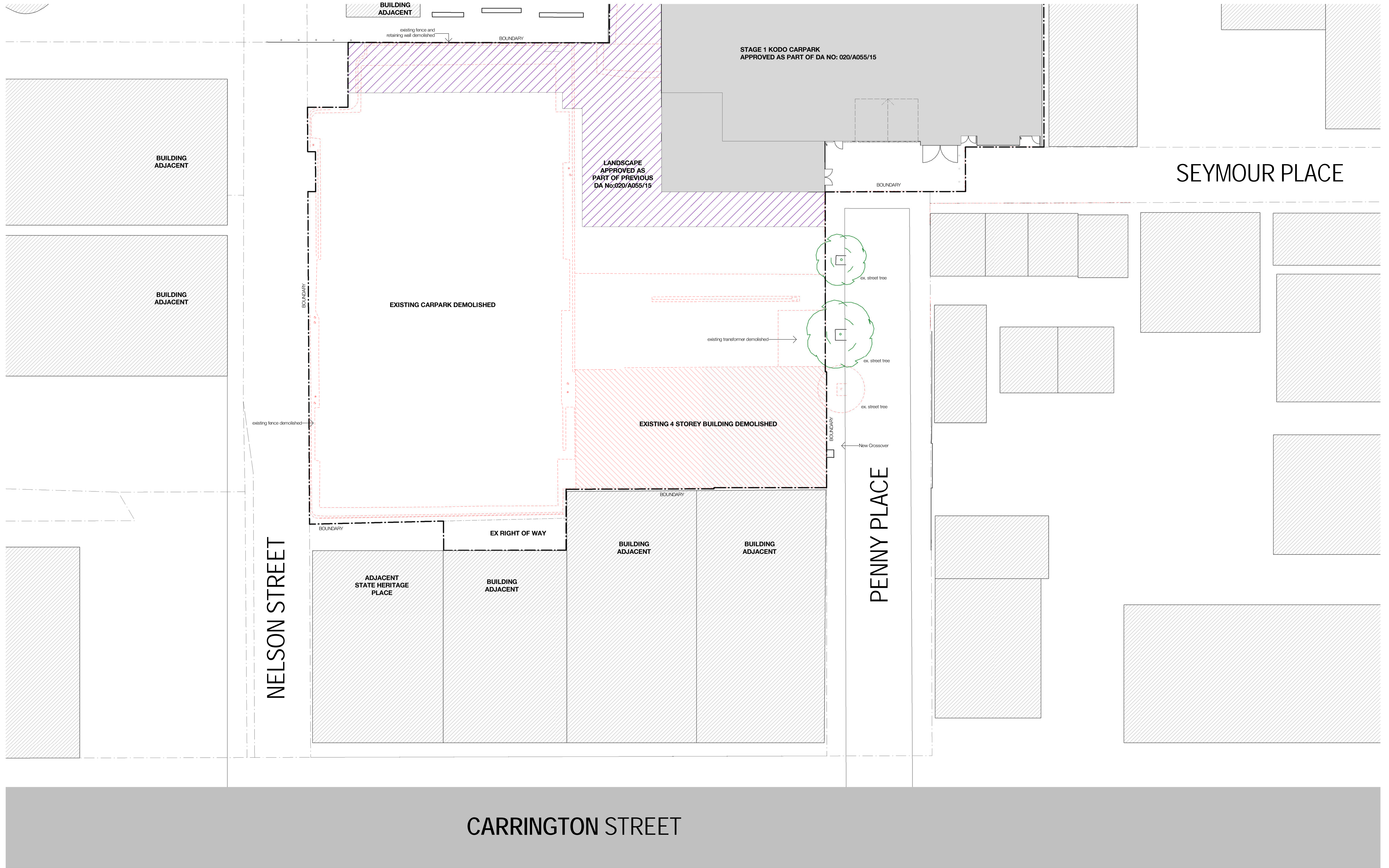


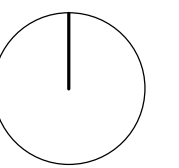
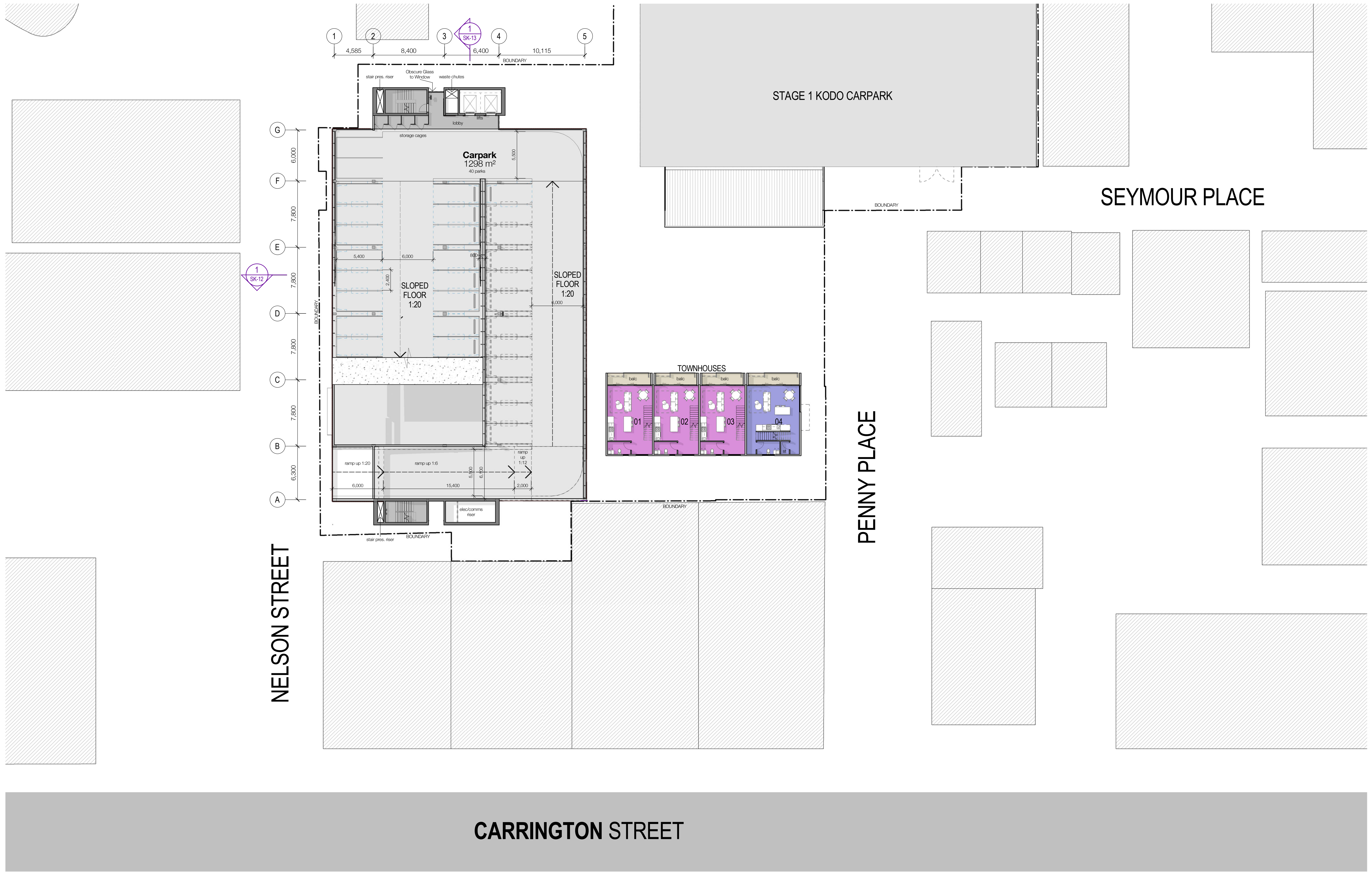
Ben Scholes

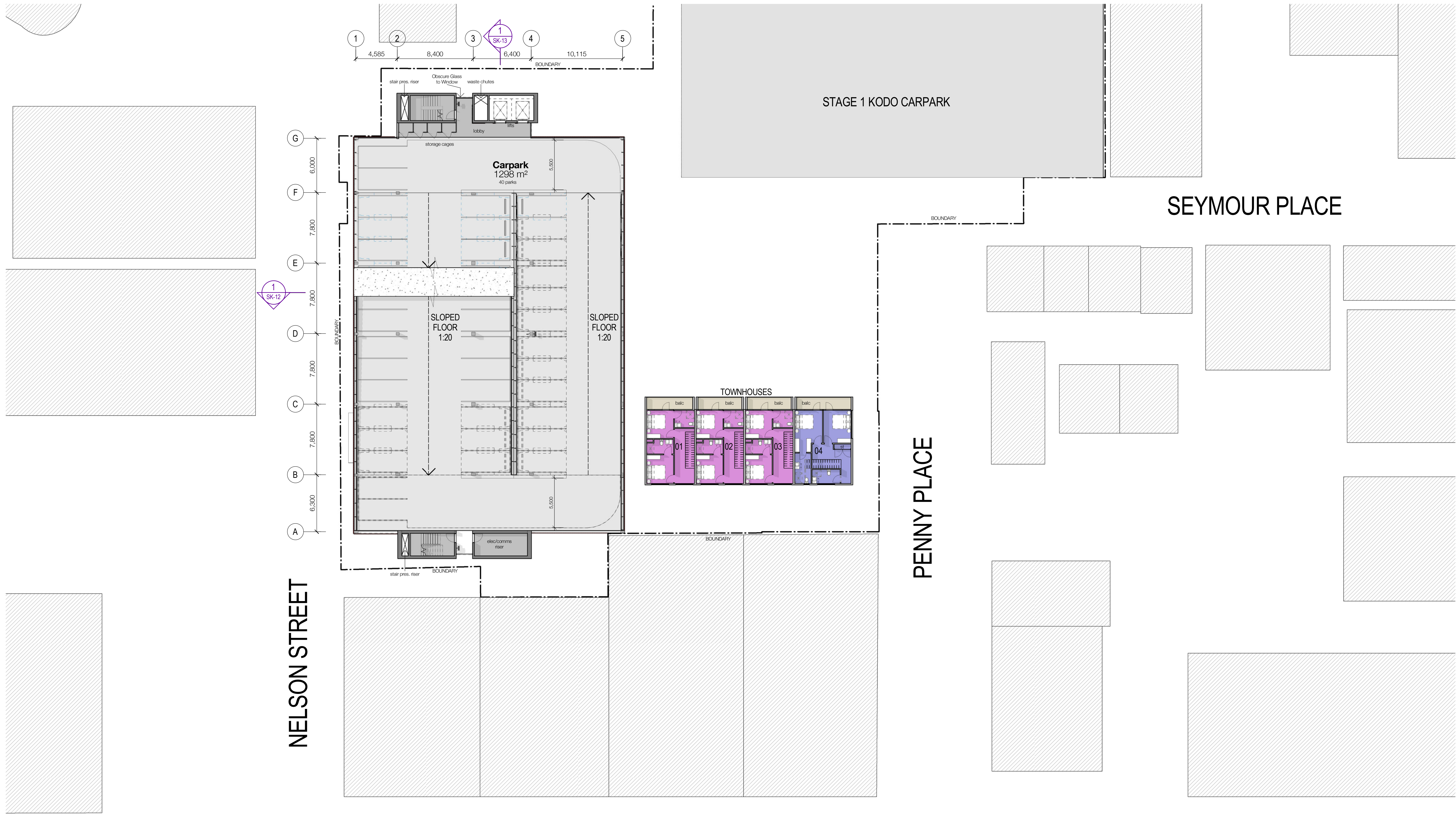
Project Officer

PLANNING AND DEVELOPMENT DIVISION

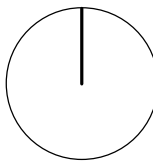
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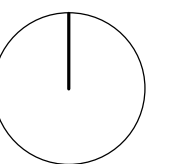
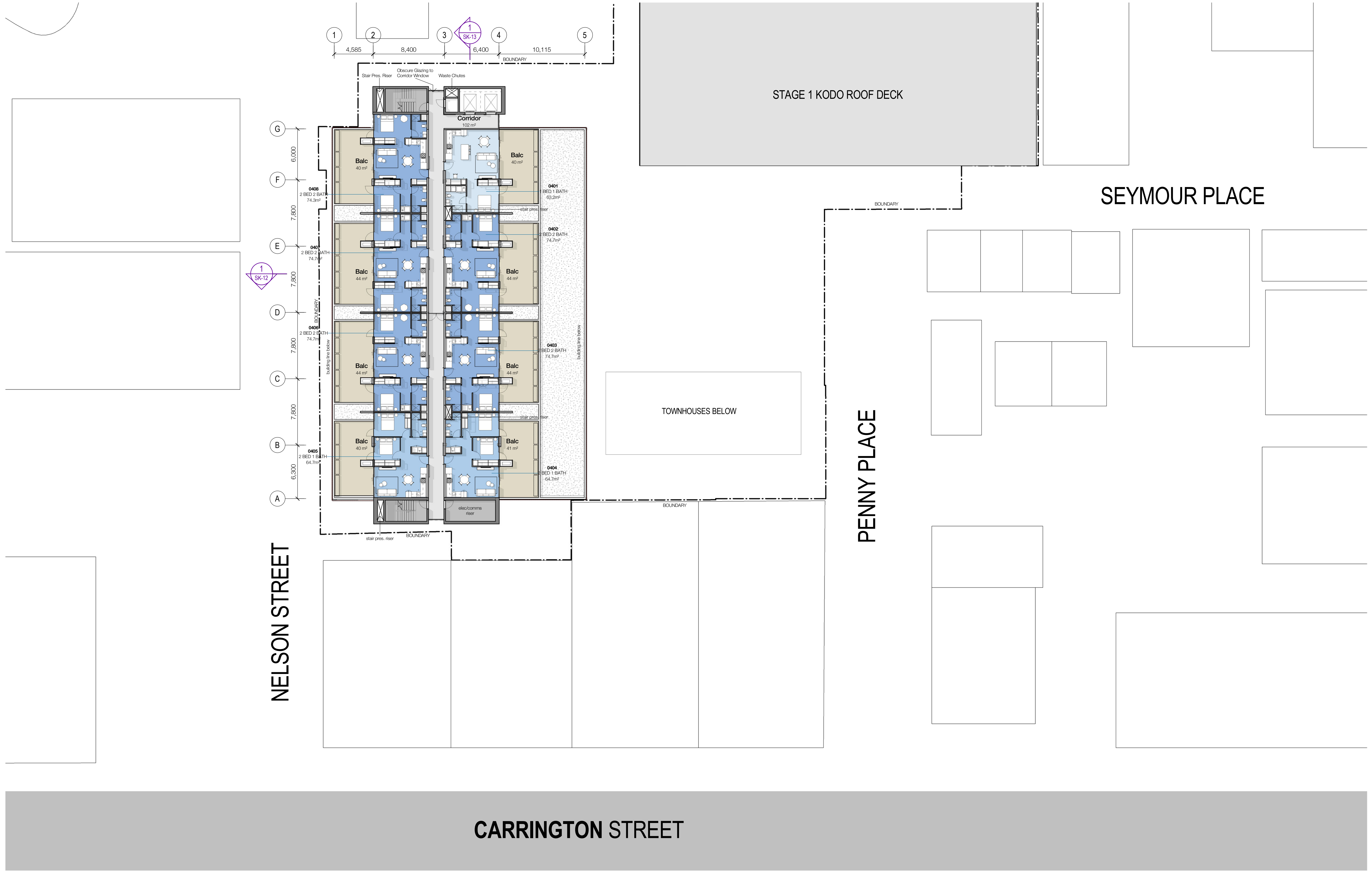


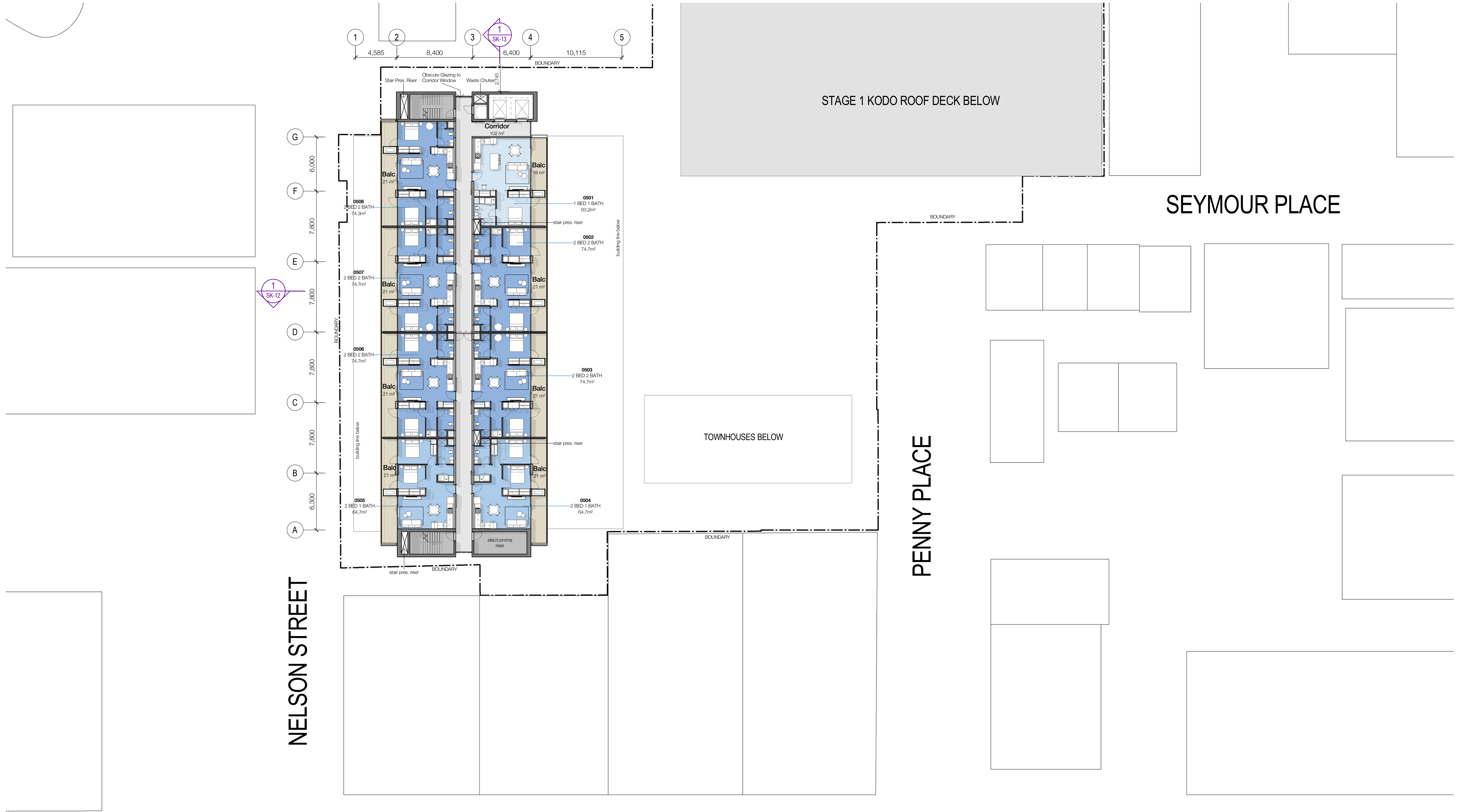


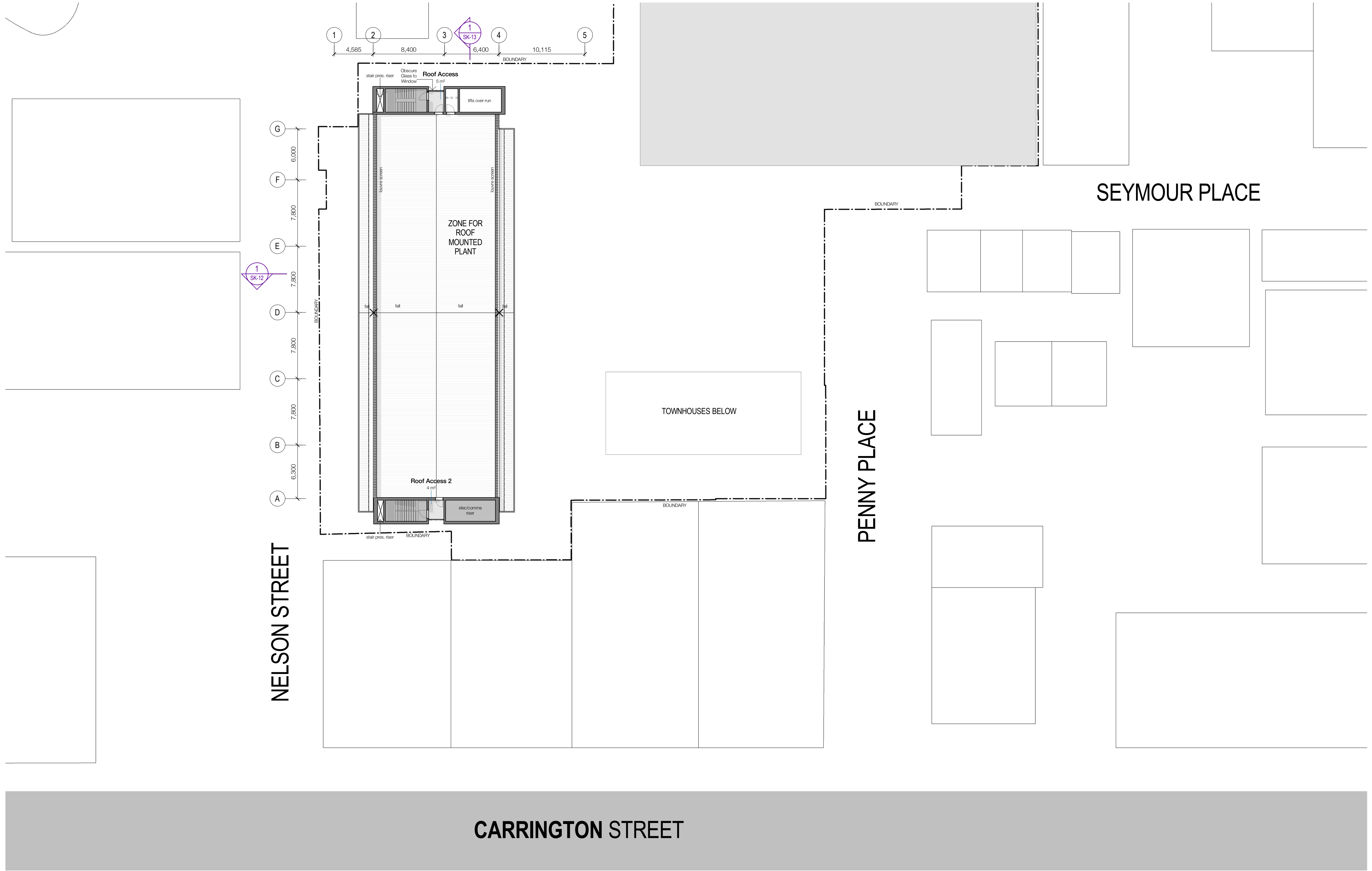


CARRINGTON STREET





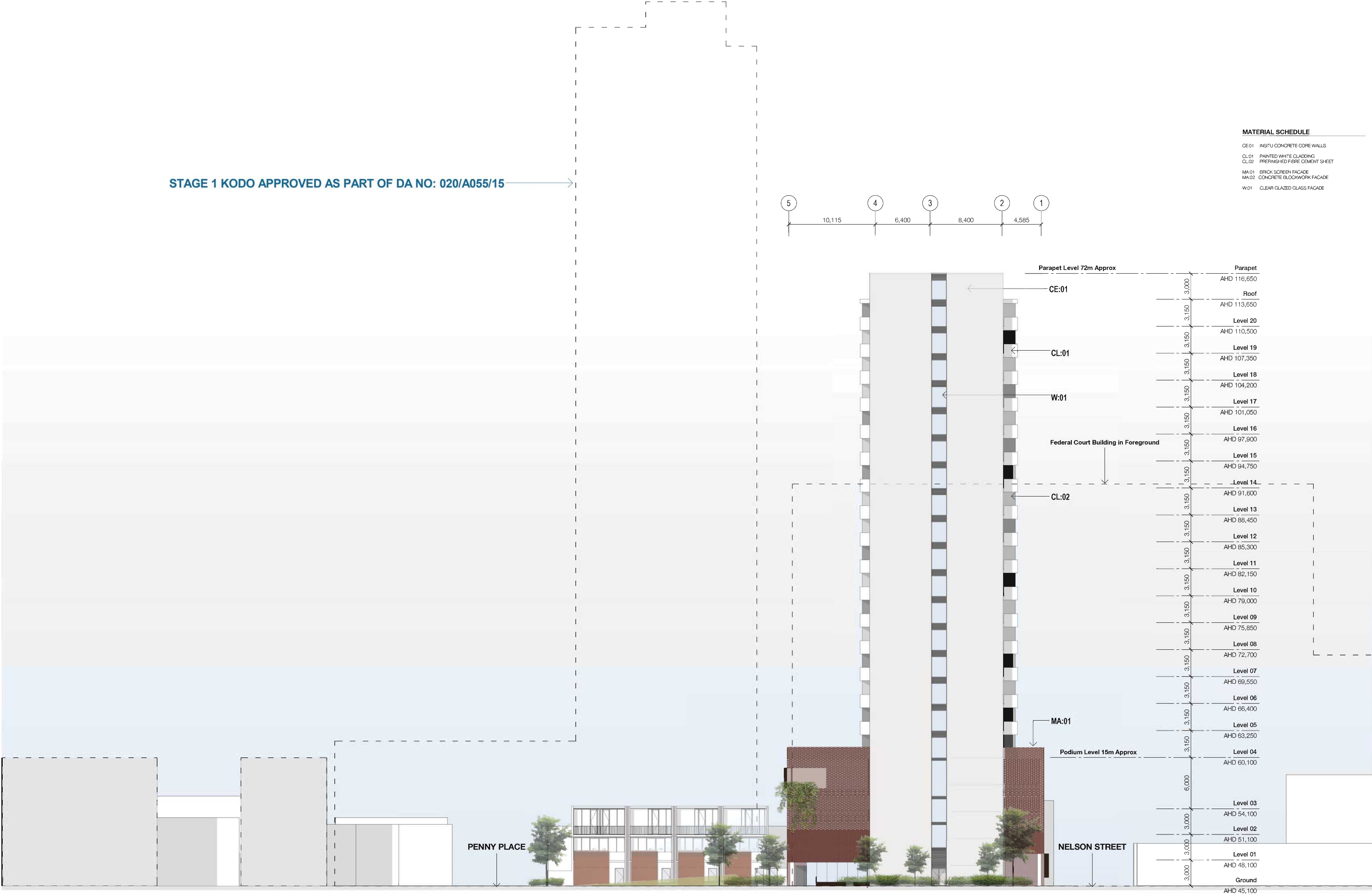




STAGE 1 KODO APPROVED AS PART OF DA NO: 020/A055/15

MATERIAL SCHEDULE

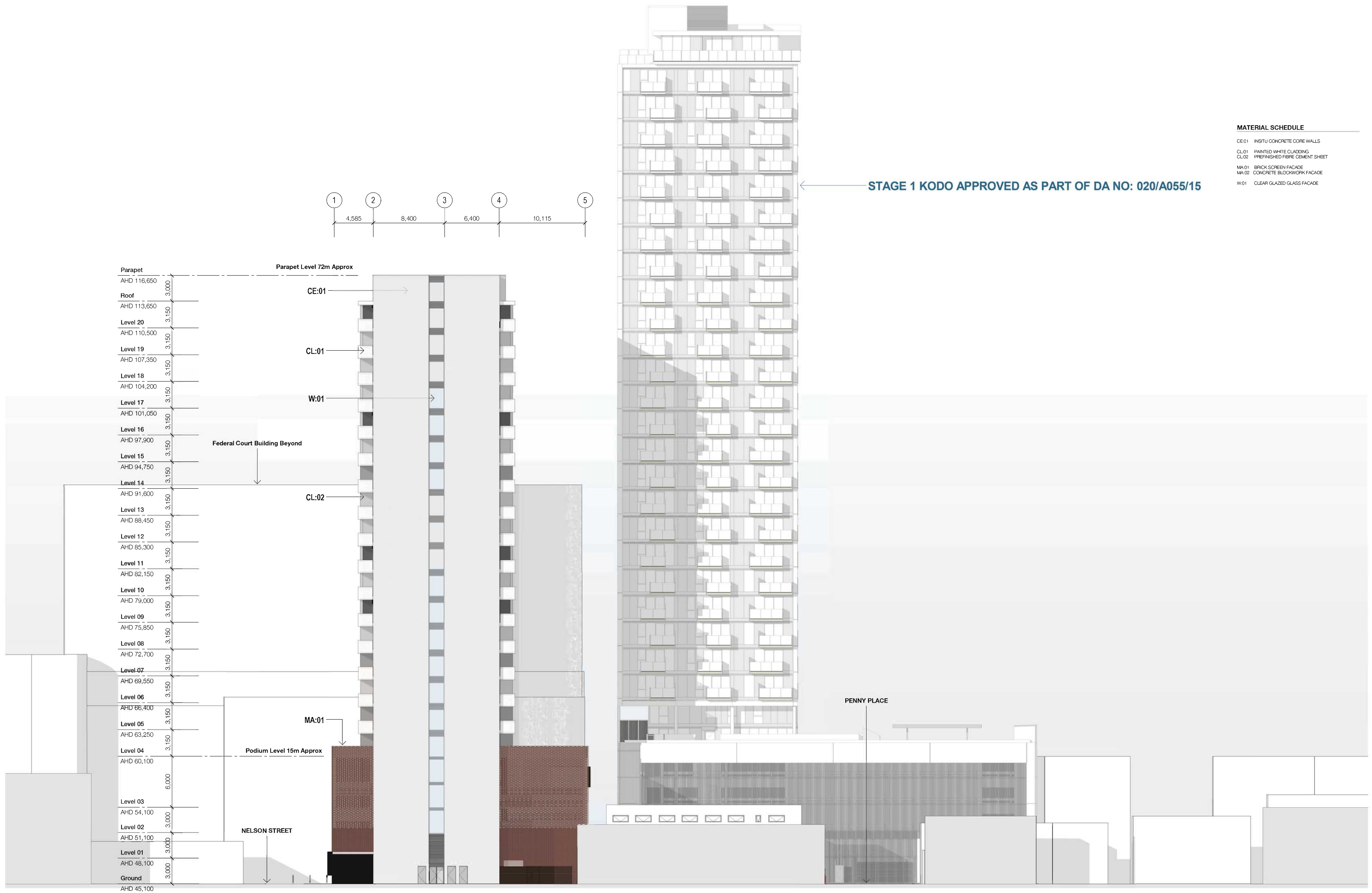
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- CL:02 PREFINISHED FIBRE CEMENT SHEET
- MA:01 BRICK SCREEN FACADE
- MA:02 CONCRETE BLOCKWORK FACADE
- W:01 CLEAR GLAZED GLASS FACADE



MATERIAL SCHEDULE

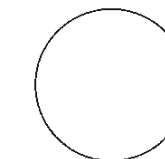
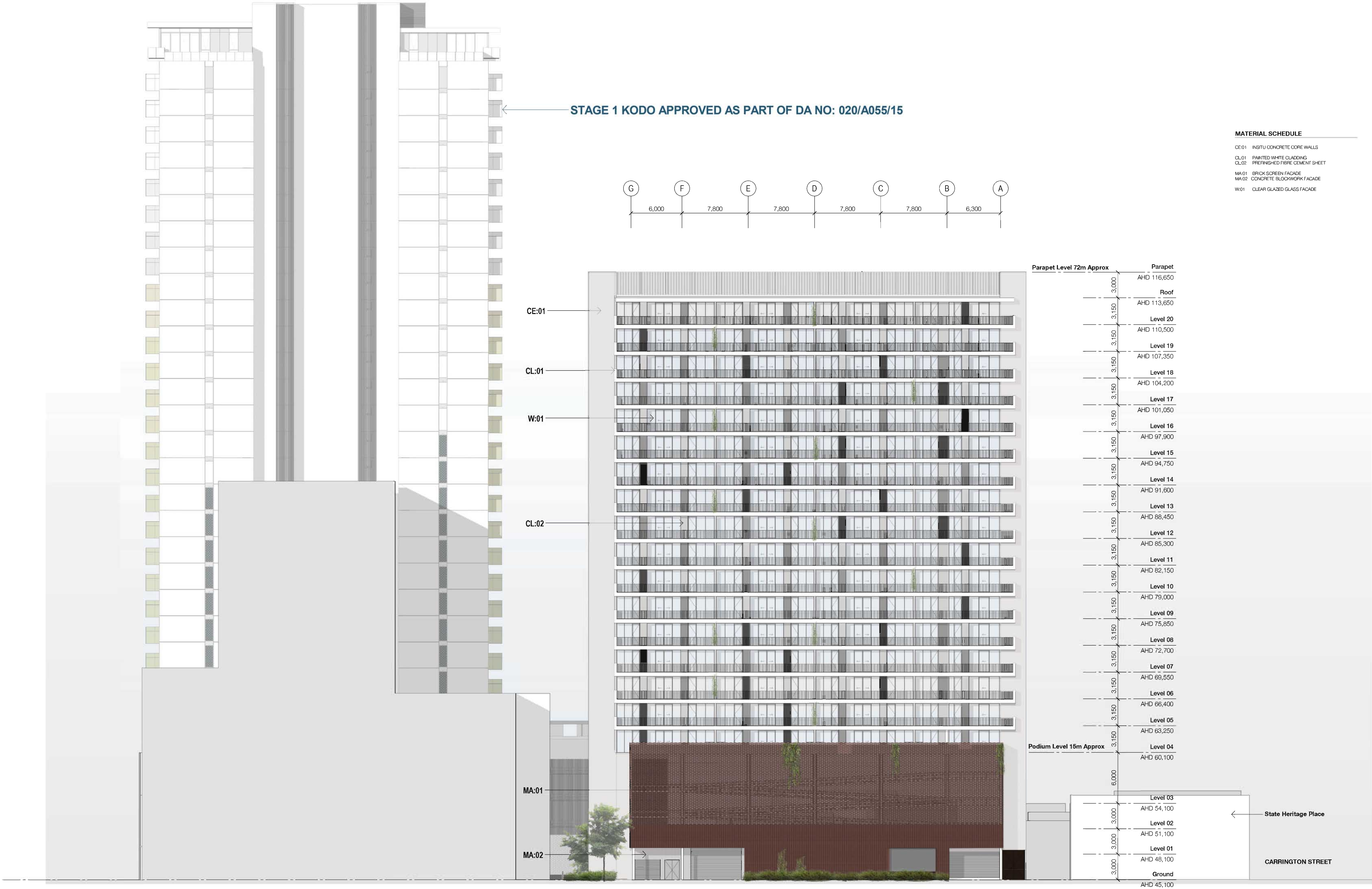
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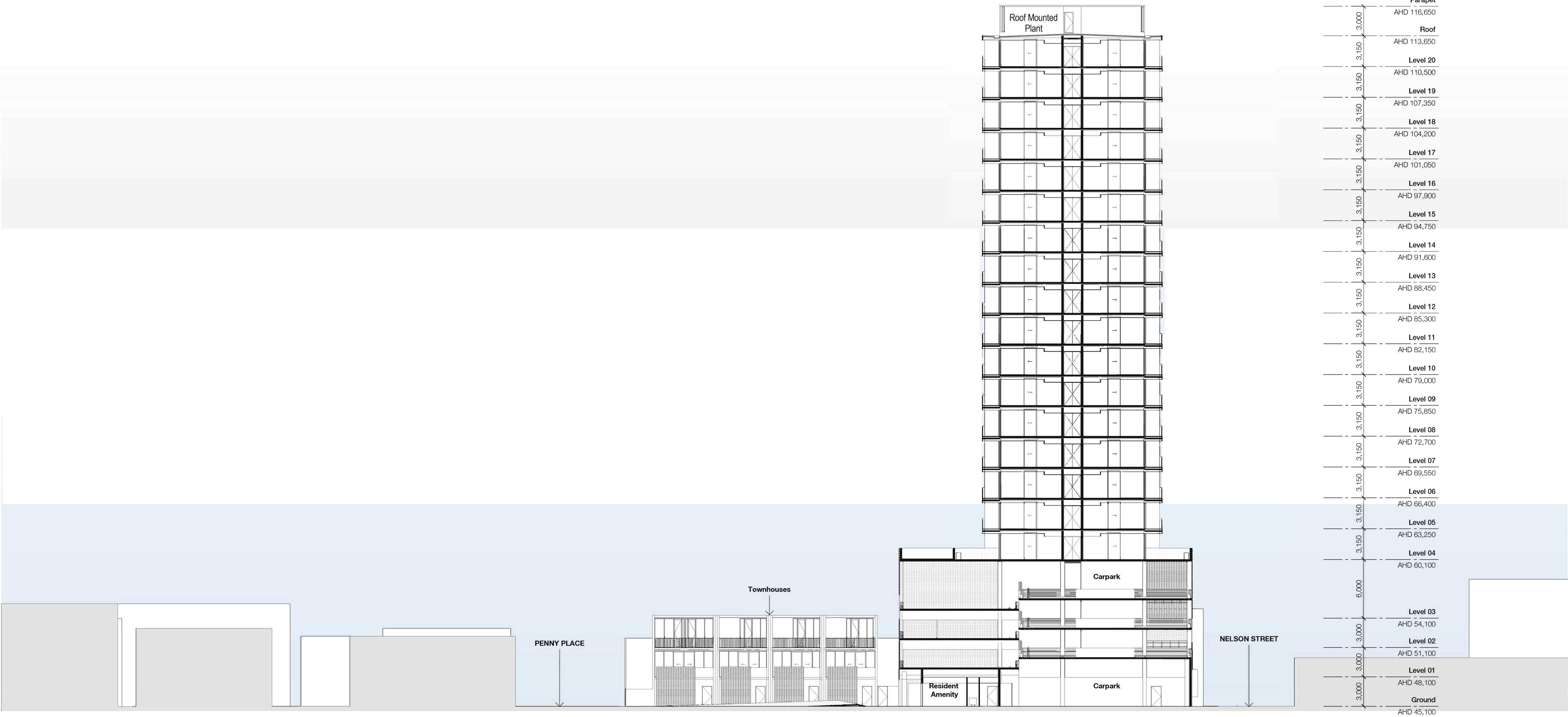




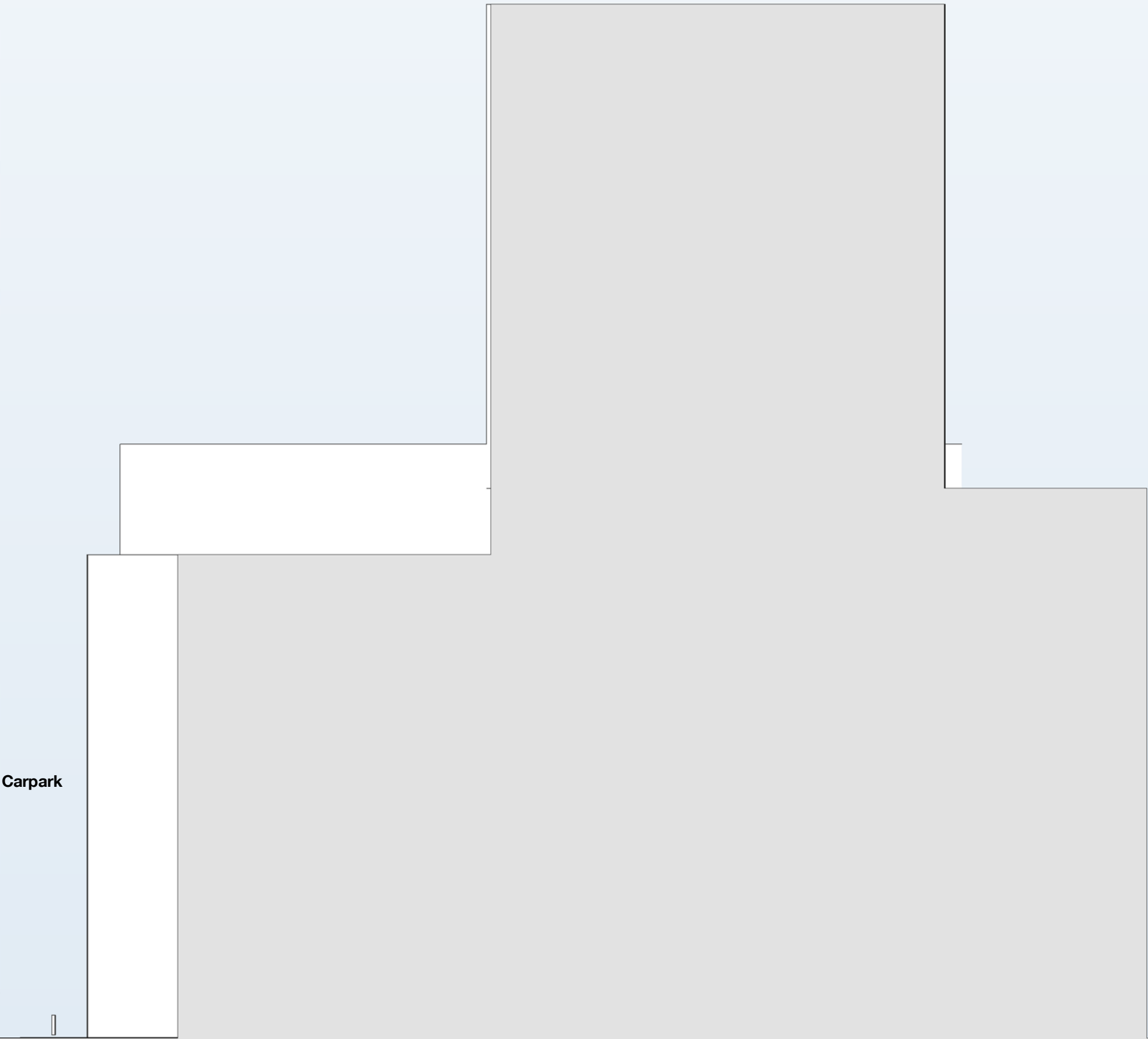
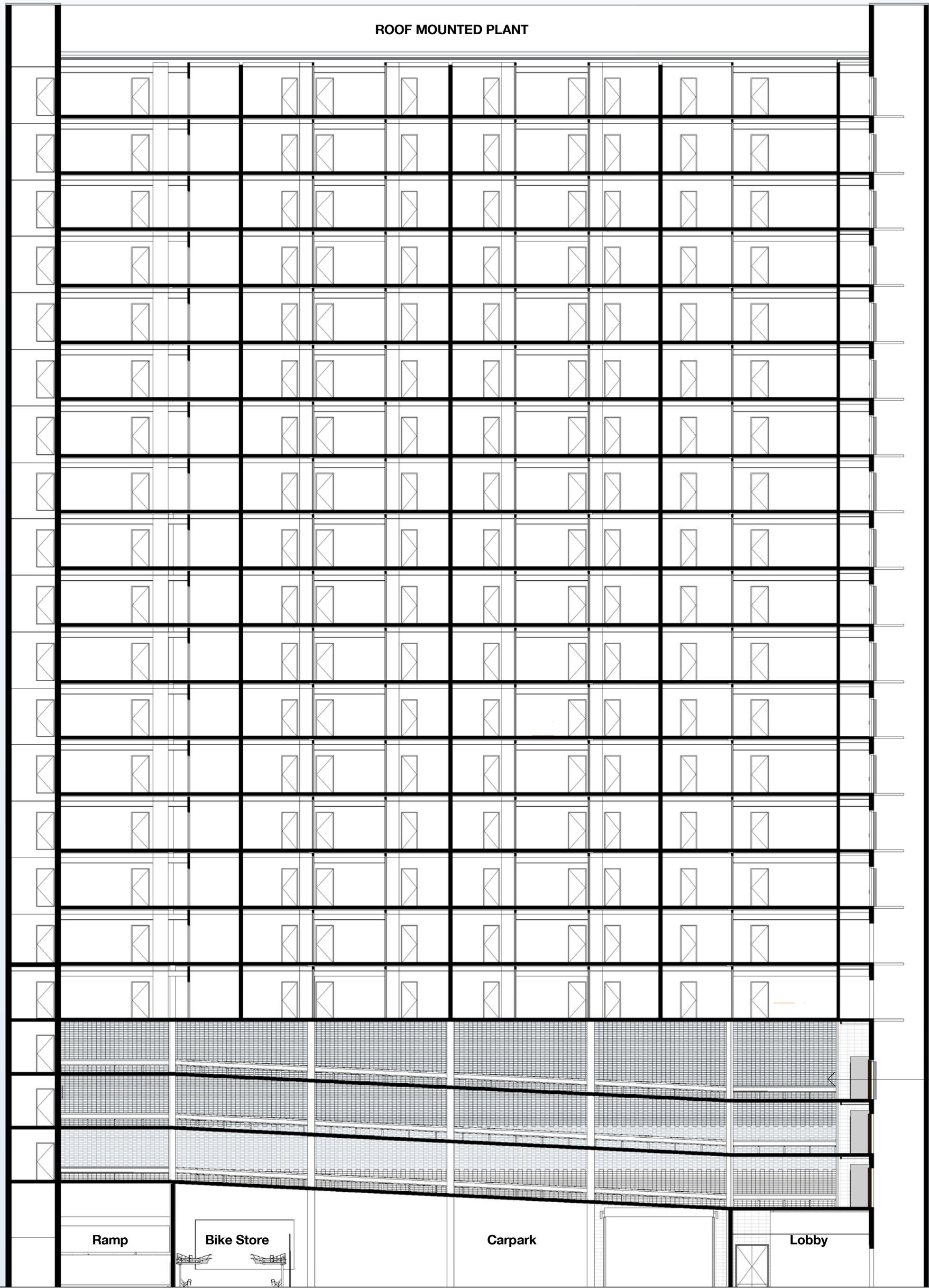
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MA:01	BRICK SCREEN FACADE
MA:02	CONCRETE BLOCKWORK FACADE
W:01	CLEAR GLAZED GLASS FACADE

STAGE 1 KODO APPROVED AS PART OF DA NO: 020/A055/15





Parapet	
AHD 116,650	3,000
Roof	
AHD 113,650	3,150
Level 20	
AHD 110,500	3,150
Level 19	
AHD 107,350	3,150
Level 18	
AHD 104,200	3,150
Level 17	
AHD 101,050	3,150
Level 16	
AHD 97,900	3,150
Level 15	
AHD 94,750	3,150
Level 14	
AHD 91,600	3,150
Level 13	
AHD 88,450	3,150
Level 12	
AHD 85,300	3,150
Level 11	
AHD 82,150	3,150
Level 10	
AHD 79,000	3,150
Level 09	
AHD 75,850	3,150
Level 08	
AHD 72,700	3,150
Level 07	
AHD 69,550	3,150
Level 06	
AHD 66,400	3,150
Level 05	
AHD 63,250	3,150
Level 04	
AHD 60,100	6,000
Level 03	
AHD 54,100	3,000
Level 02	
AHD 51,100	3,000
Level 01	
AHD 48,100	3,000
Ground	
AHD 45,100	





Ground Level Landscape Plan





Level 4 Landscape Plan

SCALE 1:400 (A3)

0 4 8 20



Overall Landscape Section

SCALE 1:400 (A3)





Kodo Development underway on Carrington Street



Kodo Development – adjacency to Federal Courts building



Kodo Development underway on Carrington Street



Carrington Street – view to east



Public walkway between the Kodo Development and Federal Courts Building



Public realm at the south of the Federal Courts building



Public realm at the south of the Federal Courts building



Public realm at the south of the Federal Courts building



Vehicle turnaround at northern end of Nelson Street



Paid car park on the subject land



Construction compound established on the subject land



Adelaide Watch House facility south of the Federal Courts building



Adelaide Watch House car parking area



Right-of-way between Bar Chambers and subject land



SA Police Communications and Command Facility



Bar Chambers building on Carrington Street



SA Police Communications and Command Facility



Carrington Street – view to west



Carrington Street – view to east



Ken Street – view to north



A COMMITTEE OF THE STATE PLANNING COMMISSION

STATE
COMMISSION
ASSESSMENT
PANEL

SCAP Agenda Item 2.2.1
22 February 2018



Commercial premises on Carrington Street



Penny Place – view to north



Penny Place – view to north



Legal services premises on Carrington Street



Residences and car parking east of the subject land



Commercial premises on the subject land (Adelaide Exhibit Property Section)



Subject land – view from east



Penny Place – view to south



Residential flat building on Carrington Street



Seymour Place – east of the subject land

DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: ADELAIDE CITY COUNCIL

APPLICANT: FLAGSHIP (PENNY PLACE) P/L C/O-INTRO DESIGN P/L

Postal Address: PO BOX 207, RUNDLE MALL, ADELAIDE, SA 5000

Owner: FLAGSHIP (PENNY PLACE) P/L

Postal Address: _____

BUILDER: _____

Postal Address: _____

Licence No: _____

CONTACT PERSON FOR FURTHER INFORMATION

Name: ANTHONY GATTI

Telephone: _____ [work] 0402 424 403 [Ah]

Fax: _____ [work] _____ [Ah]

EXISTING USE: _____

FOR OFFICE USE

Development No: _____

Previous Development No: _____

Assessment No: _____

☐ Complying

☐ Non Complying

☐ Notification Cat 2

☐ Notification Cat 3

☐ Referrals/Concurrences

☐ DA Commission

Application forwarded to DA

Commission/Council on

/ /

Decision: _____

Type: _____

Date: / /

	Decision required	Fees	Receipt No	Date
Planning:	_____	_____	_____	_____
Building:	_____	_____	_____	_____
Land Division:	_____	_____	_____	_____
Additional:	_____	_____	_____	_____
Development Approval				

DESCRIPTION OF PROPOSED DEVELOPMENT: AS PER p. 16 OF PLANNING REPORT

LOCATION OF PROPOSED DEVELOPMENT: _____

House No: 11-19 Lot No: _____ Street: PENNY PLACE Town/Suburb: ADELAIDE

Section No [full/part] _____ Hundred: _____ Volume: 6160 Folio: 301

Section No [full/part] _____ Hundred: _____ Volume: 6160 Folio: 300

LAND DIVISION:

Site Area [m²] _____ Reserve Area [m²] _____ No of existing allotments _____

Number of additional allotments [excluding road and reserve]: _____ Lease: YES ☐ NO ☐

BUILDING RULES CLASSIFICATION SOUGHT: _____ Present classification: _____

If Class 5,6,78 or 9 classification is sought, state the proposed number of employees: Male: _____ Female: _____

If Class 9a classification is sought, state the number o persons for whom accommodation is provided: _____

If Class 9b classification is sought, state the proposed number of occupants of the various spaces at the premises: _____

DOES EITHER SCHEDULE 21 OR 22 OF THE DEVELOPMENT REGULATIONS 2008 APPLY? YES ☐ NO ☒

HAS THE CONSTRUCTION INDUSTRY TRAINING FUND ACT 2008 LEVY BEEN PAID? YES ☐ NO ☒

DEVELOPMENT COST [do not include any fit-out costs]: \$ 40,000,000

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the Development Regulations 2008.

SIGNATURE: AS GATTI

Dated: 30 / 10 / 17

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Registrar-General

Certificate of Title - Volume 6160 Folio 301

Parent Title(s) CT 6160/298, CT 6160/299

**Dealing(s)
Creating Title** VE 12322472

Title Issued 29/07/2015

Edition 2

Edition Issued 04/01/2016

REAL PROPERTY ACT, 1886



South Australia

Estate Type

FEE SIMPLE

Registered Proprietor

FLAGSHIP (PENNY PLACE) PTY. LTD. (ACN: 603 802 268)
OF L 29 140 WILLIAM STREET MELBOURNE VIC 3000

Description of Land

ALLOTMENT 2 FILED PLAN 1918
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO RIGHT(S) OF WAY WITH LIMITATIONS OVER THE LAND MARKED E ON F1918 (T 2199700)

SUBJECT TO RIGHT(S) OF WAY WITH LIMITATIONS OVER THE LAND MARKED G ON F20283 (T 6135942)

Schedule of Dealings

Dealing Number	Description
12439013	MORTGAGE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD. (ACN: 005 357 522)

Notations

Dealings Affecting Title

NIL

Priority Notices



NIL

Notations on Plan

NIL

Registrar-General's Notes

APPROVED FX250666

Administrative Interests

NIL

* Denotes the dealing has been re-lodged.

MICROFILMED
3-1-91

BE LIMITED TO A HEIGHT OF 3.80m
ABOVE A.H.D. 45-360m

ANGAS STREET

well. WALL 0-13 WALL 43-22

171	3-87	0-20	0-18	0-20	0-21
B	2-19	J	H	2-19	G
171	3-87	0-20	0-18	0-20	0-21

P L T A

[illegible]

ENLARGEMENT

L.T.O. SEARCH No. X18256	
Checked Using Angles	
Book	Page
Examined	<i>PH</i>
Survey approved 30 1.9/1977.	
<i>Deane</i>	
Principal Drafting Officer	

A. H. D. DENOTES AUSTRALIAN HEIGHT DATUM.

ORIGIN FOR LEVELS P.M. FD. ANGAS ST. & NELSON ST CORNER. R.L. 45-017 A.H.D.

MOSEL, BROWNE, BEDDOME & ASSOCIATES
SURVEYING & PLANNING CONSULTANTS
87 GREENHILL RD. WAYVILLE, 5034. PH. 718552

FILE REF. R1894E-1G-1-EH.
DRAWN JAP 12-2-76
CHECKED *Sk* 20-2-76.

[illegible]

LOT 2 IS TO BE TOGETHER WITH LEASE RIGHTS OVER B & J.
 RECIPROCAL PARTY WALL RIGHTS ARE TO BE CREATED OVER PORTIONS MARKED D, G & C, H.
 LOT 1 IS SUBJECT TO LIGHT AND AIR RIGHTS OVER THE PIECE MARKED L.
 LOT 1 IS TOGETHER WITH " " K.
 LOT 2 IS TO BE SUBJECT TO RIGHTS OF WAY OVER THE PIECES MARKED F, T, S & E (RESERVING CERTAIN RIGHTS AS DESCRIBED IN C.T. 2786/54 OVER E & F)
 LOT 2 IS SUBJECT TO & TOGETHER WITH (WITH CERTAIN RIGHTS AS DEFINED IN C.T. 2786/54) A RIGHT OF WAY OVER THE PIECE MARKED I. C.T. 333/26.
 LOT 1 IS TO BE TOGETHER WITH RIGHTS OF WAY OVER E, F, T & S. (F, T & S LIMITED AS TO CERTAIN CONDITIONS)
 LOT 1 IS TO BE TOGETHER WITH LIGHT & AIR RIGHTS OVER T, S & R. (LIMITED AS TO CERTAIN CONDITIONS)
 LOT 2 IS TO BE SUBJECT TO " " OVER T, S & R. (RESERVING CERTAIN RIGHTS)


I, Malcolm John Beadmore, Licensed Surveyor of South Australia, do hereby certify that this plan has been made from surveys executed by me or under my own personal supervision, inspection and field check and that both plan and survey are correct and have been made in accordance with Regulations under the Surveyors' Act 1935 - 1971.

Dated this twentieth day of February, 1976.

NOTE. PERMANENT MARKS TO THE SURVEYOR GENERALS SPECIFICATIONS
AT POINTS SHOWN THUS P.M.

PLAN FOR TRANSFER PURPOSES
CITY OF ADELAIDE
PT TOWN ACRES 410 & 411

METRES 5 0 5 10 15 METRES



SCALE 1:250

C.I. 2786 / 54 RETURNED SERVICES LEAGUE (S.A. BRANCH) INC.

WARNING: BEFORE DEALING WITH THIS LAND, SEARCH THE CURRENT CERTIFICATE

CERTIFICATE OF TITLE

Volume 6160 Folio 300

Dealing(s) Creating Title **VE 12322472**

Title Issued **29/07/2015**

Edition **2**

Edition Issued **29/07/2015**

REAL PROPERTY ACT, 1886



South Australia

I certify that the registered proprietor is the proprietor of an estate in fee simple (or such other estate or interest as is set forth) in the land within described subject to such encumbrances, liens or other interests set forth in the schedule of dealings.



Registrar-General

ESTATE TYPE

FEE SIMPLE

REGISTERED PROPRIETORS

**FLAGSHIP (PENNY PLACE) PTY. LTD. (ACN: 603 802 266)
OF L 29 140 WILLIAM STREET MELBOURNE VIC 3000**

DESCRIPTION OF LAND

**ALLOTMENT 5 DEPOSITED PLAN 58661
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE**

EASEMENTS

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED M ON D58661 (T 1428387)

**TOGETHER WITH RIGHT(S) OF WAY WITH LIMITATIONS OVER THE LAND MARKED Y ON D58661
APPURTENANT TO THE WITHIN LAND EXCEPT THE LAND MARKED R ON D58661 (T 2199700)**

**TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED S ON D58661 APPURTENANT ONLY TO THE
LAND MARKED T ON D58661 (T 2178813)**

**TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED W ON D58661 APPURTENANT ONLY TO
THE LAND MARKED M ON D58661 (GRO NO.180 BOOK 128)**

SCHEDULE OF DEALINGS

**12322474 LEASE TO MINISTER FOR TRANSPORT AND INFRASTRUCTURE COMMENCING ON
06/05/2015 AND EXPIRING ON 05/05/2017**

12322475 AGREEMENT UNDER DEVELOPMENT ACT, 1993 PURSUANT TO SECTION 57(1)

END OF TEXT

176

PLANNING REPORT

PENNY PLACE // ADELAIDE

OCTOBER 2017

Activating human space

INTRO

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01

INTRODUCTION

Intro has prepared this report on behalf of Flagship (Penny Place) Pty Ltd (the Applicant), providing planning advice pertaining to the proposed development of land located between Penny Place and Nelson Street, Adelaide. The development proposal represents an opportunity to deliver a high quality mixed use, multi-level building located in a strategically important area of the City of Adelaide.

In undertaking the project design, the Applicant has commissioned the following sub-consultants to provide specialist advice:

Architecture:	Woods Bagot
Town Planning:	Intro
Traffic Engineering:	GTA Consultants
Acoustic Engineering:	WSP
ESD Consultant	WSP
Wind Impact:	Vipac
Waste Management:	Colby Industries
Civil Engineering:	Robert Bird Group
Landscape Architecture:	Tract

In forming my opinions herein, I confirm that I have viewed the proposal plans prepared by Woods Bagot, have attended the subject land and locality and considered the relevant provisions of the Adelaide (City) Development Plan (consolidated - 20 June 2017).

02

SUBJECT LAND AND LOCALITY

02.1 SUBJECT LAND

The subject land is bounded by the Roma Mitchell law courts to the north, Nelson Street to the west, a two-storey state heritage office building as well as a shop and two, two-storey offices to the south facing Carrington Street and Penny Place to the east. The street address for the subject land is 11-19 Penny Place, Adelaide. Currently the built form associated with the site is used as an office premises for SA Police.

The subject land is more particularly described within the following Certificate of Title:

Allotment	Filed Plan	Hundred	Volume/Folio
5	58661	Adelaide	6160/300

The Certificate of Title forms Appendix 01 of this planning statement.

The subject land displays a frontage of some 56m to Nelson Street, 28m to Penny Place and exhibits a depth of 60m between Nelson Street and Penny Place. In total, the subject land comprises some 2,350m² in site area. The subject land is relatively flat displaying no particular fall in gradient. Twelve *Platanus orientalis* (Oriental Plane) trees exist upon the subject at grade car park. None of these are regulated or significant.

4

The aerial photograph below depicts the site and subject land:



FIGURE 02.1: SUBJECT SUBJECT ALLOTMENT OUTLINED AND SUBJECT LAND SHADED

The subject land is located within the Capital City Zone of the authorised Development Plan.

The existing built form upon the subject land is an at grade car park with two-way vehicular access from Nelson Street and surrounded by a colorbond fence of 2.2 metres in height and a four-storey cream brick office building built in the 1960s.

02.2 LOCALITY

The subject land is highly accessible to vehicles cognisant of the prevailing road networks in its proximity. King William Street is identified as a Secondary City Access Road. The light rail corridor, located along King William Street, connects Glenelg through to the Adelaide Entertainment Centre, with the City south Tram Stop located some 250m south-west of the subject land and the Victoria Square Tram Stop located some 350m to the north-west.

The location of the subject land also avails a high degree of pedestrian connectivity and accessibility, being identified within the Primary Pedestrian Area, as delineated in Map Adel/1 (Overlay 2A) in the Adelaide (City) Development Plan (the Development Plan). Angas Street is also located within the Primary Bicycle Network identified in Map Adel/1 Overlay 3 of the Development Plan and is accessible to pedestrians and cyclists from the subject site through a laneway on the balance of the subject allotment to the north-east.

The locality to the south along Carrington Street contains a range of buildings which are lower in scale. On the corner of Nelson and Carrington Streets, adjacent to the subject land is a State Heritage Item: the Bar Chambers, a former dwelling. This two-storey Victorian style building is constructed of red brick and bluestone. Also adjacent the subject land to the south is a contemporary two-storey office building of rendered masonry and a single story shop.

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The following images depict the locality to the south:



PHOTOGRAPH 01: ROMA MITCHELL LAW COURTS TO THE NORTH AND STATE HERITAGE PLACE TO THE SOUTH VIEWED FROM CARRINGTON ST



PHOTOGRAPH 02: STATE HERITAGE PLACE TO THE SOUTH OF THE SUBJECT SITE WITH RIGHT OF WAY OVER LANEWAY ON NELSON ST

Adjacent the subject land to the west across Nelson Street are a single and two-storey building with ancillary at-grade car parking occupied by SA Police and depicted in Photograph 04 below.



PHOTOGRAPH 03: VIEW EAST ACROSS SUBJECT LAND



PHOTOGRAPH 04: LOCALITY WEST AND NORTH OF SUBJECT LAND INCLUDING ROMA MITCHELL LAW COURTS

The locality to the north is heavily influenced by the adjacent the Roma Mitchell Magistrate Courts - a building designed in a symbolic, futurist style which is characterised by strong lines and sculptural elements comprised of copper patina, steel, concrete and coloured glazing. The existing pedestrian path on the adjacent site's southern boundary abutting the subject site is currently being widened to approximately 5.5 metres at its narrowest point and landscaped within the site's northern boundary, thus widening and reinforcing the existing pedestrian link from Nelson Street to Angas Street between the subject site and the rear of the Roma Mitchell Commonwealth Law Courts (see Photograph 7).

Immediately adjacent to the east and north of the subject land exists the balance of the irregularly shaped subject allotment. A 23 storey mixed use building of retail with ancillary car parking and landscaping is currently under construction on this adjacent land (DA 020/A055/15). The car park element which occupies a portion of the first 5 levels is depicted under construction to the north east of the subject site in Photograph 07 below. The car park element will gain access via Angas Street on its eastern side with access removed from the subject land.

This development will substantially influence the locality of the subject land to the north and east. Rendered images expressing its materiality, massing and interaction with public space are included within Appendix 02 of this report.

The locality to the east of the site across Penny Place comprises two-storey group dwellings orientated to an internal courtyard and with 5 garages and driveways off Penny Place and a two-storey office building on the corner of Penny Place and Carrington Street.

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PHOTOGRAPH 05: ROMA MITCHELL COMMONWEALTH LAW COURTS TO NORTH



PHOTOGRAPH 06: SOUTHERN FACADE OF ROMA MITCHELL LAW COURTS WEST



PHOTOGRAPH 07: PEDESTRIAN ACCESS ALONG SITE'S NORTHERN BOUNDARY

Abutting the subject land to the south is a two-storey mock Georgian office building forming the corner of Carrington Street and Penny Place. This building is depicted in Photograph 08 below.



PHOTOGRAPH 08: LOCALITY SOUTH EAST OF SUBJECT LAND VIEWED FROM CARRINGTON STREET



PHOTOGRAPH 09: THE CREAM BRICK 4-STOREY BUILDING LOCATED ON THE EASTERN PORTION OF THE SUBJECT LAND

03 DESIGN RESPONSE

03.1 DESIGN STATEMENT

Penny Place provides an opportunity to create an “urban regeneration” of a significant central Adelaide city site, into a sequentially connected and layered unique urban experience

Conceived as precinct, Penny Place is the second stage of an integrated mixed use master plan. Penny Place consists of a public square flanked by Kodo (the first stage), Penny Place Residential Tower and Penny Town Houses. The ground plane provides the community with strong pedestrian connections and active frontages to both Penny Square and Nelson Street.

In this project, we team is looking to leverage our combined skills and experience to develop a SMART product. We referenced this conceptual aspiration against the principles of PEOPLE, DESIGN AND CONSTRUCT to inform the architectural response.

03.2 RESPONSE TO ODASA

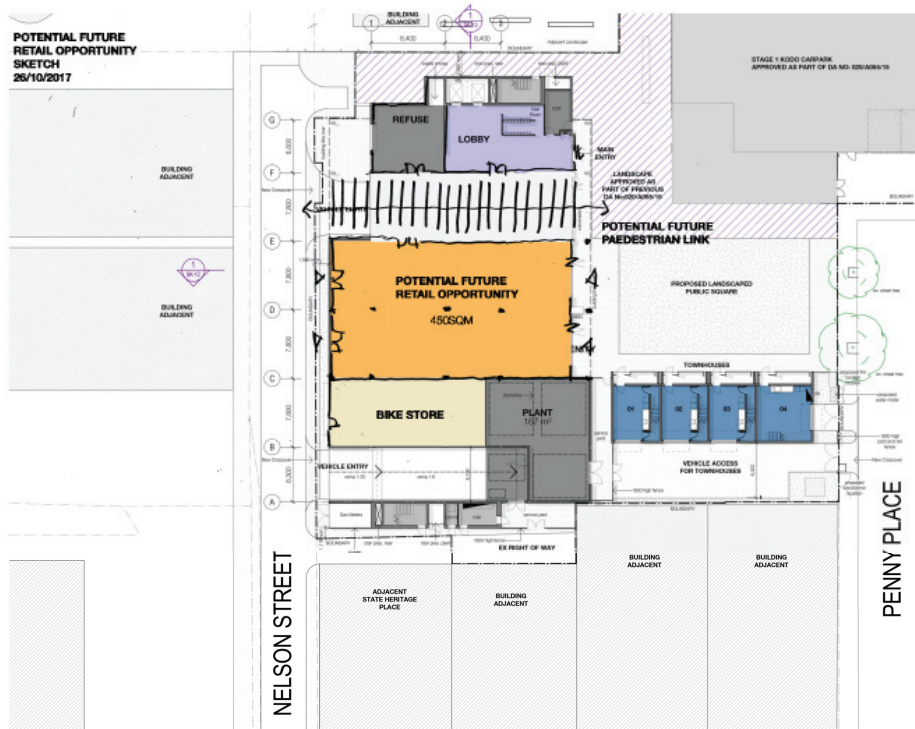
In October 2017, the proponent undertook a Design Review with the Office for Design and Architecture SA. Following the receipt of feedback from this Design Review process, the project team has amended the design, or provided a justification for not doing so. Woods Bagot provide the following response:

“I am concerned that the current site configuration does not offer clear and legible links between Nelson Street and Penny Place”

The site linkage strategy was established as part the previously approved masterplan. The main public link from Penny Place to Nelson Street is via a landscaped path to the north of Stage 2. A pedestrian linkage is also available east/west through the building via a rationalized lobby experience supporting the proposed retail tenancy with a controlled access strategy to be confirmed. This link will also allow visual permeability through the building at ground level. This linkage could be further expanded in the future should a retail tenancy be incorporated on the Nelson Street frontage.

“I am concerned by the inactive frontage on Nelson Street which in my opinion can restrict future development opportunities on adjoining sites”

It was noted at the design review that in its current context activation of Nelson Street frontage will be problematic from a commercial point of view. As such we believe that the current approach is appropriate provided the provision is made for future commercial tenancy to be implemented, a sketch is provided in the development submission demonstrating the ability to implement a commercial tenancy to the Nelson Street frontage in the future.



"I am of the view that the proposal does not offer sufficient passive surveillance to the public spaces after hours. I understand that the project team intend to transfer the publicly accessible spaces to the council ACC. Therefore it is particularly critical to the success of the overall development that the public spaces are safe at all times and offer high amenity to the residents and the wider community alike."

There has been a strong focus on providing activated and safe pedestrian interfaces to the public spaces within the masterplan. Along with the proposed retail fronting Penny Square (in Stage 1 – Kodo and 2), resident amenity facilities provided on Ground Floor of Stage 2, Proposed Townhouses and the Landscaped Roof Terrace of Stage 1 are intended to cultivate activation of the ground plane and passive surveillance of adjacent public spaces.

Tract consultants have been engaged to provide landscaping design services for the project to ensure that a successful and integrated public realm approach is achieved. They will provide advice on the following;

STRATEGY & CPTED

The CPTED Strategy for the public realm will be adapted from Crime prevention and the assessment of development applications Guidelines under section 79C of the Environmental Planning and Assessment Act 1979 NSW.

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DETERRENCE THROUGH SURVEILLANCE

Outdoor and public realm lighting, including LED wall mounted brick-lighting for ambient lighting encouraging evening use, pole mounted lighting and in-ground lighting in key areas.

Groundcover, low shrubs and taller trees allow for natural clear sightlines through the laneways, walkways and square.

TERRITORIAL REINFORCEMENT

Territoriality is a CPTED design concept that clearly delineates private space from semi-public and public spaces and also creates a sense of ownership. When there is a sense of ownership within a space, strangers and intruders stand out and are more easily identified. This is achieved by:

- The design of the ground plane, including levels and treatment reinforces natural surveillance and natural access control strategies with additional designed symbolic and social elements enhancing a feeling of legitimate ownership.
- Pavement treatments, landscaping, screening and fences help to define and outline ownership.

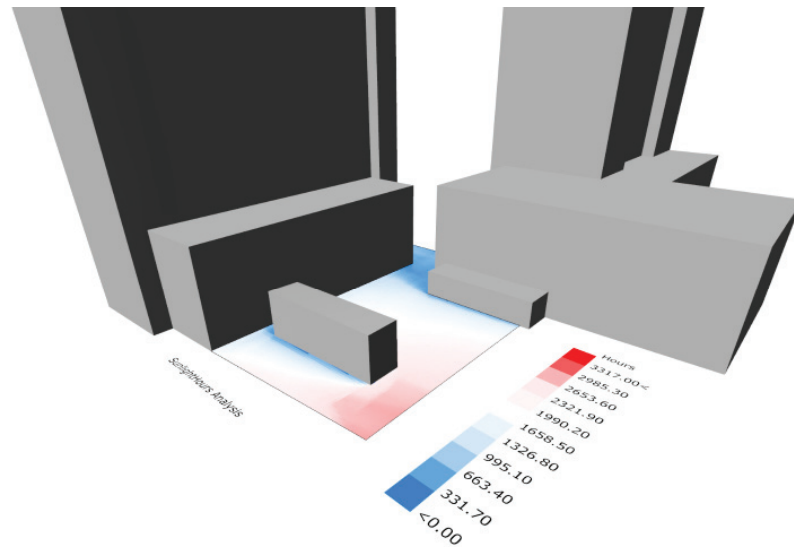
SPACE MANAGEMENT

Ensuring proper maintenance of landscaping, lighting treatment and other features will assist in the prevention of crime. Use of high quality materials and hardy plant selection allows for maintaining high landscaping standards over time.

SOLAR ACCESS

Solar studies will be undertaken to identify the most appropriate species for the area. We anticipate good solar access for the central square, with lower levels of light in the laneways, where shade tolerant species will be selected.

Woods Bagot in house review of solar analysis suggests that the public square will achieve approx. 2000 hours of direct daylight annually.

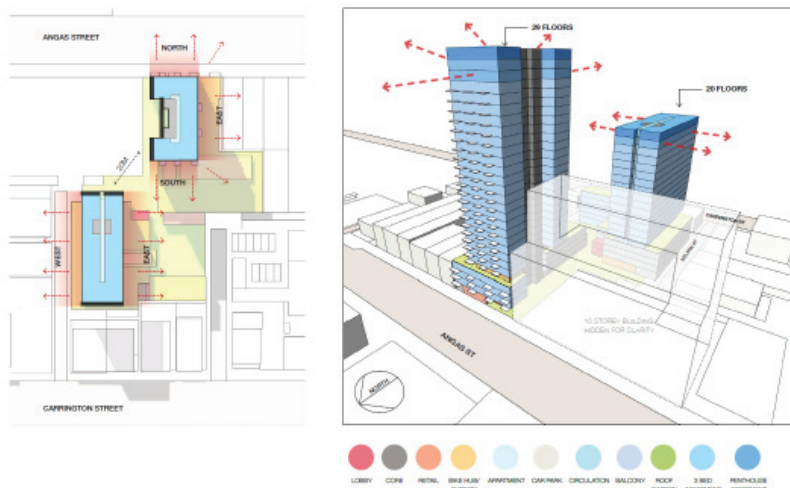


"In my opinion, re-orientation of the building to provide north south apartments will improve resident amenity and sustainability performance of the development. However I acknowledge the challenges with the site specific adjacency issues and support the proposed orientation on balance"

Extensive analysis of the façade performance has been undertaken by Woods Bagot and ESD Consultant - WSP supporting the proposed orientation of the building with regards to the following;

VIEWS

Great amenity is provided by the uninterrupted views for all apartments to the east and the west



NATHERS

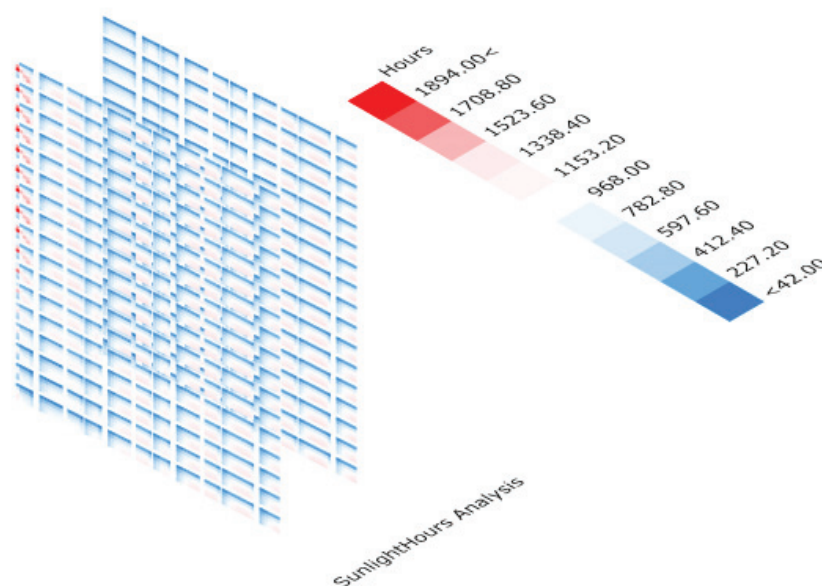
All apartment types modeled meet the required minimum rating of 5 Stars and an average rating of greater than 6 Stars using a mid-level double glazed solution as outlined in the ESD report. Regarding the western façade it is noted in the ESD report that the average star rating difference between the western and eastern façades is only 0.1 stars.

LEVEL	LEVEL 4	LEVELS 5 TO 19	LEVEL 20
Number of level's	1	15	1
App. 01	5.9	6.6	5.9
App. 02	6.1	6.9	6.2
App. 03	5.9	6.6	6
App. 04	6.2	6.8	6.2
App. 05	6.3	7.2	6.5
App. 06	6.3	7.1	6.4
App. 07	5.4	6.1	5.5
App. 08	5.9	6.8	6.1
Min	5.4		
Average	6.7		
Max	7.2		

ACCESS TO DAYLIGHT

10

The proposed orientation provides for incredibly even distribution of direct sunlight hours to all apartments within the development as shown by the modeling below.

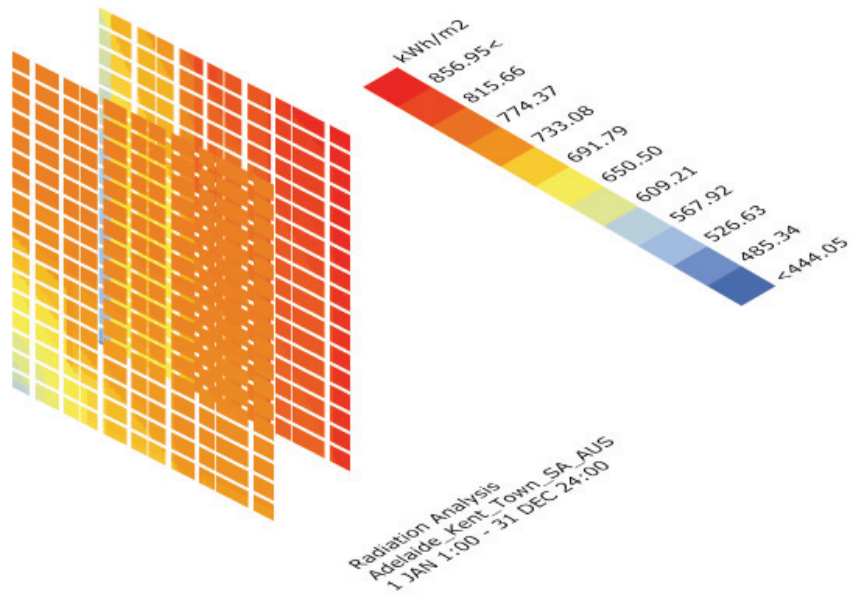


"I recommend the design team further explore integrated systems to effectively manage the solar loads on the western elevation, with the view to further develop the expression of the long elevations informed by the passive climate control requirements"

While the design team believe that articulation provided by the current façade elements will provide a strongly textured long façade we are looking to explore some further colour tone randomisation of the air conditioning screen elements and introduction of "greening" elements to the party wall blades as outlined in the landscaping report which will further articulate this façade.

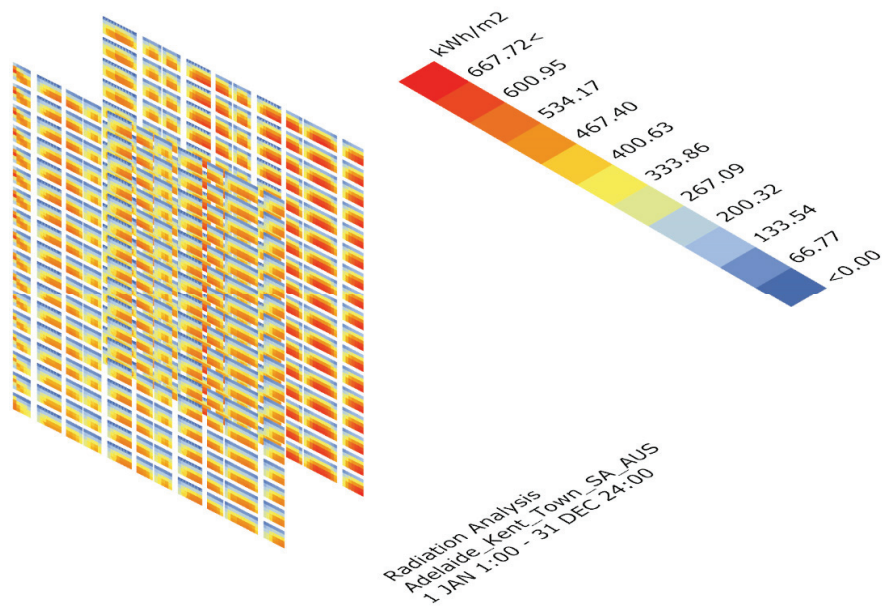
As mentioned previously the ESD report suggests that the current sun shading elements provide sufficient passive performance to achieve the required NATHERS rating and as such additional sun shading elements will be surplus to requirements and will need to be reviewed against the initial conceptual basis for the project. Woods Bagot internal analysis suggests that the current sun shading approach will reduce average heatloads on the façade by approx. 41%.

No sun-shading (full year)



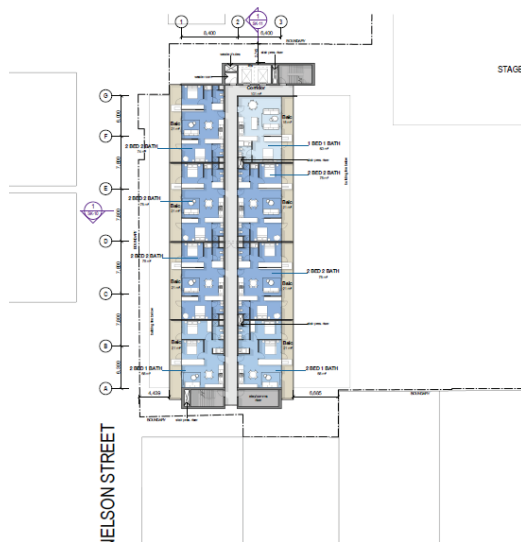
11

Proposed sun-shading (full year)



"While I support the intent to provide a neutral backdrop to the state heritage place, I am concerned by the challenges of controlling the concrete finishes to deliver the intended visual outcome. I recommend opening up the north and south ends of the building to improve the amenity of the internal communal circulation spaces."

The design team has noted your recommendation to open the south and north ends of the communal circulation, this adjustment has been integrated in the updated design proposal. This opening also provides additional articulation of the southern façade.



Regarding the quality of the concrete finish, we believe that having the builder on board at this stage of the project allows the project team to receive appropriate buildability advice to ensure that sufficient allowances are made for construction of an in-situ concrete finish which meets the desired visual outcomes. We propose to use a finishing product such as 'NawKaw' on the off form finish to ensure that this is achieved. We note that the use of the off-form concrete finish is intended to align with the conceptual basis for the project.

"While I recognise the intention to locate the condensers within integrated furniture pieces, further information is required to demonstrate that the proposed arrangement successfully mitigates the environmental and acoustic impacts."

Acoustic analysis has been undertaken by WSP confirming that the noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria set out in the Adelaide City Council Development Plan and the EPA south Australian EPA Environment Protection (Noise) Policy 2007.

"An opportunity exists to enlarge the private open space provisions at the top of the podium to vary the apartment offerings, it can also assist in improving passive surveillance of the public square"

We note that passive surveillance of the square has been addressed previously and acknowledge the opportunity for these balconies to provide additional visual amenity to the tower residents. The intention is to provide larger balconies to the podium apartments as noted to vary the apartment offerings, Woods Bagot along with Tract Consultants will look to define an appropriate size for these balconies based on a number of different factors including buildability, drainage, cost and resident amenity.

04 THE PROPOSAL

04.1 BUILDING COMPOSITION

The particular elements of the proposal are detailed within the plans prepared by Woods Bagot dated October 2017, which form Appendix 02 of this planning statement.

The proposal consists of the construction of a 21 storey mixed use building with ancillary car parking and landscaping, a landscaped public square and a group of four, three-storey row dwellings with ancillary car parking.

A retail tenancy will occupy part of the ground floor of the tower building which fronts onto a landscaped pedestrian thoroughfare and public square. Car parking will occupy part of the ground floor and levels 1-3. Residential land uses will occupy the upper levels of the proposed building. The key land uses and their respective areas are listed below:

GROUND FLOOR

- Retail 81sqm internal area;
- Entrance Lobby 64sqm;
- Car park access and 14 car parks;
- Communal lounge and kitchen 95sqm;
- Bike store and workshop for 140 bicycles;
- Refuse storage 51sqm; and
- Building Services 160sqm.

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LEVELS 1-3

- 40 car parking spaces per level

LEVELS 4-20

- Seven, two bedroom apartments per level; and
- One, single bedroom apartment per level.

A residential flat building comprising four, three-storey townhouses additionally form part of this Development Application and are located on the south eastern corner of the subject land. The two-bedroom dwellings will gain access from a rear laneway running off Penny Place.

In total the proposed development incorporates 119 two bedroom residential apartments, 17 one bedroom residential apartments, four, two bedroom dwellings within a residential flat building and 138 car parking spaces.

A landscaped public square of some 280m² is proposed on the east of the subject site which will provide amenity to the surrounding residential developments and ground floor shops.

For ease of identification throughout this report, the 21 storey mixed use building will be referred to as the 'high-rise' building and the residential flat building will be referred to as the 'townhouses'.

04.2 TRAFFIC AND PARKING

CAR PARKING

A total of 134 car parking spaces will be located within the site across 4 levels. The proposed townhouses will include one garage parking space for each dwelling.

As part of the development the existing car parking on Nelson Street will need to be adjusted. There are currently 6 permit parking spaces and 2 time-restricted (2 hour) parking spaces. To accommodate the proposed site accesses and design vehicles, including removal of existing accesses, up to 5 on-street parking spaces are likely to be feasible.

VEHICLE ACCESS

Vehicle access to the proposed tower will be via Nelson Street. The proposed crossover at the northern end of the site will provide access for vehicles parking at the ground floor, as well as for refuse and delivery vehicles. Access for vehicles entering car parking spaces on Level 1 to Level 3 will be provided via a ramp access at the southern end of the site. The proposed townhouses will be accessible from Penny Place.

BICYCLE FACILITIES

A total of 140 secure bicycle parking spaces will be provided in a bicycle storage along with a bicycle workshop on the ground floor for use by residents. Visitor bicycle parking will be available within the public realm area to be developed as part of the Stage 1 Kodo Apartments project. Employee bicycle parking for the retail use will be available within either the ground floor storage room, the retail tenancy itself or using nearby visitor bicycle parking.

Further bicycle parking opportunities are available within the storage areas for each apartment and within the apartments themselves.

PEDESTRIAN FACILITIES

Pedestrian footpaths are provided on Nelson Street and Penny Place. The existing vehicular access point to the Kodo Apartments site from Angas Street will be closed and modified into a pedestrian and cyclist connection as part of the Stage 1 project. A connection from the proposed Stage 2 development to Penny Place will also be provided, which will be available following completion of Stage 1.

14

LOADING AREAS

It is proposed that refuse collection will occur adjacent to the waste storage room at the northern end of the site. Council refuse collection vehicle and other delivery vehicles will enter Nelson Street in a forward direction and reverse into the loading area from the end of Nelson Street. Bins would be wheeled from the nearby bin storage room to the loading area for collection. The refuse vehicle will exit to Nelson Street in a forward direction.

04.3 WASTE MANAGEMENT

ESTIMATED GARBAGE AND RECYCLING GENERATION

Based on State Guidelines (Zero Waste SA, 2014), the likely volumes of waste would be:

Apartments

- General Waste – 2,754 L/week (compacted)
- Dry Recycling – 3,828L/week (partially compacted)
- Food waste – 2,295L/week (uncompacted)

Townhouses

- General Waste – 360 L/week (uncompacted)
- Dry Recycling – 300L/week (uncompacted)
- Food waste – 120L/week (uncompacted)

COLLECTION SERVICES

Based on stakeholder consultation, collection services at the Development would be delivered by Council:

- Apartment Building – Residential (Apartment-derived) waste & recycling (Bulk bin collection service + Hard Waste collection)
- Townhouses – Residential waste & recycling (Standard kerbside collection + Hard waste collection)

Private / Commercial Contractor:

- Retail tenancy waste & recycling
- Public place waste & recycling
- Residential Amenity Area waste & recycling

The Waste Management plan and confirmation from the Adelaide City Council that this service is acceptable are provided within Appendix 04.

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04.4 ACOUSTIC

Proposed design criteria for the project utilises the legislative requirements stated in Adelaide City Council Development Plan and the south Australian EPA Environment Protection (Noise) Policy 2007.

Design advice is based on an environmental noise survey conducted at the proposed site and the adjacent surroundings. The report concludes that the proposed Penny Place Stage 2 development will be able to comply with the acoustic requirements outlined in the Adelaide City Council Development Plan, as follows:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

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The acoustic assessment is provided in Appendix 05.

04.5 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

A Section J assessment has been undertaken on the proposed development. The assessment finds that all elements within the proposed building can achieve the required criteria. A section J assessment is provided in Appendix 06.

05

PLANNING ASSESSMENT

This planning assessment will consider the relevant provisions determined to be most pertinent to the proposed development.

05.1 NATURE OF DEVELOPMENT

The proposed development is contained within the Capital City Zone as detailed within the Adelaide (City) Development Plan (consolidated – 20 June 2017).

The particular details of the proposed development are referenced in the preceding chapter. For ease of assessment I recommend that the nature of the proposed development be described as:

demolition of a four-storey office building and construction of a 21 level mixed use development, including commercial and residential land uses, with ancillary car parking and landscaping. Construction of a residential flat building comprising four, three level dwellings with ancillary car parking and landscaping. Construction of a landscaped public square and pedestrian circulation paths.

The proposed development is not prescribed as complying nor as non complying within the Development Plan and should be assessed on its merits as a consent form of development.

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05.2 PUBLIC NOTIFICATION

Principle 40 of the Capital City Zone prescribes all development as Category 1 within the Zone, other than where it is designated as Category 2 or identified as a non-complying form of development. Development is designated Category 2 in the Capital City Zone where it abuts a residential zone and exceeds 22m in height. The proposal does not satisfy this criterion and hence should navigate the Category 1 public notification process.

The Category 1 public notification procedures are detailed with Section 38 of the *Development Act 1993*. Section 38 (3) states:

the relevant authority must not, on its own initiative seek the views of the owners or occupiers of adjacent land or other land in relation to the granting or refusal of development plan consent.

05.3 RELEVANT PROVISIONS

The following provisions are considered to be relevant to the assessment of the proposal.

05.3.1 LAND USE

CAPITAL CITY ZONE

Objective 2: A vibrant mix of commercial, retail, professional services, hospitality, entertainment, educational facilities, and medium and high density living.

PDC 1: The following types of development, or combinations thereof, are envisaged:

Affordable Housing

Dwelling

...

Restaurant

Residential Flat Building

Shop or group of shops

...

The proposed development incorporates land uses which will contribute to a high density living environment within the City. The proposed commercial space has the potential to be used for a range of land uses. Nominally a restaurant and/or shop have been proposed to provide activation the proposed public square off Penny Place. The proposed land uses are envisaged by the Zone and accordingly the scheme satisfies Zone Objective 2 and PDC 1.

05.3.2 BUILDING DESIGN

CAPITAL CITY ZONE

Objective 5: Innovative design approaches and contemporary architecture that respond to a building's context.

Objective 8: Development that contributes to the Desired Character of the Zone.

PDC 5: Development should be consistent with the Desired Character for the Zone.

High-scale development is envisaged in the Zone with high street walls that frame the streets. However an interesting pedestrian environment and human scale will be created at ground floor levels through careful building articulation and fenestration, frequent openings in building façades, verandahs, balconies, awnings and other features that provide weather protection.

Non-residential land uses at ground floor level that generate high levels of pedestrian activity such as shops, cafés and restaurants will occur throughout the Zone.

Exemplary and outstanding building design is desired in recognition of the location as south Australia's capital.

PDC 6: Development should be of a high standard of architectural design and finish which is appropriate to the City's role and image as the capital of the State.

The proposed high rise building will meet these aspects of the Desired Character Statement of the Capital City Zone by providing outstanding building design and a commercial premises at the ground floor level.

Weather protection is provided through the inclusion of a canopy above the ground floor lobby, resident amenity area and retail frontages to the proposed public square.

Both buildings are considered to have high aesthetic merit and robust materiality and provide an extremely high standard of residential amenity and contribute to the City's role and image as the capital of the state.

PDC 7: Buildings should achieve a high standard of external appearance by:

- a. the use of high quality materials and finishes. This may be achieved through the use of materials such as masonry, natural stone, prefinished materials that minimise staining, discolouring or deterioration, and avoiding painted surfaces particularly above ground level;
- b. providing a high degree of visual interest through articulation, avoiding any large blank facades, and incorporating design features within blank walls on side boundaries which have the potential to be built out;
- c. ensuring lower levels are well integrated with, and contribute to a vibrant public realm; and
- d. ensuring any ground and first floor level car parking elements are sleeved by residential or non-residential land uses (such as shops, offices and consulting rooms) to ensure an activated street frontage.

PDC 8: Buildings should present an attractive pedestrian-oriented frontage that adds interest and vitality to City streets and laneways.

The materials and finishes on both buildings will be high quality, attractive and robust. They will comprise:

- insitu concrete to the northern and southern tower facades and core walls;
- glass to the apartment facades
- white cladding to the balcony soffits
- perforated steel screening to the car parks on Nelson Street;
- recycled brick facades to the high-rise podium and the ground floor of the townhouses; and
- a concrete block facade to the rear of the townhouses.

The northern and southern tower facades are comprised of concrete, bisected vertically to create an elegant symmetrically divided mass with simple balcony elements projecting rhythmically along each edge. The simple treatment of the southern facade acts as a foil to the adjacent State Heritage Item without diminishing its prominence and value to the urban fabric. This facade approach also accommodates further high density development on adjoining allotments to the south in the future as is envisaged within the Capital City Zone which extends to the south of the subject allotment.

The recycled brick, treatment of the lower levels of all proposed buildings contextually harmonious with the surrounding built form, particularly referencing the red brick elements within the State Heritage building's Nelson Street frontage and chimney.

Whilst the car parking tower element is not sleeved by residential or retail to the Nelson Street elevation, a picture window inserted into the facade provides clear views in and out of the bicycle store facilitating casual surveillance and interaction within the street. This facade is also setback more than one metre from the boundary. The setback will be landscaped to improve the pedestrian amenity along the adjacent footpath and to soften the built form. To the north the facade is recessed under the upper podium levels creating sheltered access to the lobby.

The primary podium frontage is the eastern facade which addresses Penny Place and the future restaurant across a proposed public square. This frontage is intensively activated and sheltered under a two metre wide colonnade and it activated with a communal residential amenity space including barbeque facilities and kitchen to entertain larger groups of people. To the north, a retail space opens out onto the square adjacent to the apartments primary lobby entry.

Overall the lower levels provided will contribute to a safe, connected and vibrant public realm.

The townhouses will also be orientated to the north across the proposed square and will provide casual surveillance across the space via the first and second floor balconies whilst retaining privacy to their internal spaces.

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PDC 9: The finished ground floor level of buildings should be at grade and/or level with the footpath to provide direct pedestrian access and street level activation.

The lobby, residential and retail spaces proposed will all be at grade with the footpath. The ground floor of the townhouses will be finished at grade with the adjoining public realm.

PDC 10: Providing footpath widths and street tree growth permit, development should contribute to the comfort of pedestrians through the incorporation of verandahs, balconies, awnings and/or canopies that provide pedestrian shelter.

The existing footpath on Nelson Street adjacent the site is less than one metre wide and so it is proposed to set the western facade back from the boundary by 1.5 metres to create a generous footpath width and to allow for landscaping along the frontage. This setback also respects the context of the adjacent State Heritage building and ensures a recessive relationship to the important heritage of the built form.

The eastern ground floor facade is recessed beneath the upper podium providing generous pedestrian shelter and the potential for sheltered al-fresco dining for a restaurant tenancy and the residential amenity area.

PDC 11: Buildings should be positioned regularly on the site and built to the street frontage, except where a setback is required to accommodate outdoor dining or provide a contextual response to a heritage place.

All buildings are positioned regularly on site and leave a negative space for a public square creating much improved amenity and connection to the site and broader locality.

It is noted that the vehicular entry point and lobby entry to the north on Nelson Street provides an area of setback from the street, however, cognisant of the overall width of this opening and the improved visibility to the pedestrian linkage to the north, its minor impact on the street and the fact that this follows the irregular allotment boundary, the departure is considered to be minor.

PDC 12: Buildings should be designed to include a podium/street wall height and upper level setback (in the order of 3-6 metres) that:

- a. relates to the scale and context of adjoining built form;
- b. provides a human scale at street level;
- c. creates a well-defined and continuity of frontage;
- d. gives emphasis and definition to street corners to clearly define the street grid;
- e. contributes to the interest, vitality and security of the pedestrian environment;
- f. maintains a sense of openness to the sky for pedestrians and brings daylight to the street; and
- g. achieves pedestrian comfort by minimising micro climatic impacts (particularly shade/shelter, wind tunnelling and downward drafts); other than (h) or (i):
- h. in the Central Business Policy Area;
- i. where a lesser (or zero) upper level setback and/or podium height is warranted to correspond with and complement the form of adjacent development, in which case alternative design solutions should be included to achieve a cohesive streetscape, provided parts (b) to (g) are still achieved.

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Utilising commercial development and a shared resident amenity area at the ground floor will create an attractive frontage to the public square adding interest and vitality to the public realm. The ground floor level will be constructed at a finished floor level that is compatible with that of the adjacent footpath. The proposed ground floor construction will allow equal access for all users.

The tower element is set back by approximately 4.5 metres from the podium facade to Nelson Street to the west and by ten metres to the Penny Place public square to the east. This generous setback maintains a sense of openness to the sky from the townhouses and adjacent buildings as well as affording the square with additional hours of afternoon sun. The combined colonnade and tower step backs will provide for comfortable pedestrian environments sheltered from wind tunneling and downward drafts.

There is little cohesion in the surrounding built form, however the podium height provides a step down from the podium height of the mixed use building under construction to the north.

PDC 14: Buildings, advertisements, site landscaping, street planting and paving should have an integrated, coordinated appearance and should enhance the urban environment.

PDC 15: Building façades should be strongly modelled, incorporate a vertical composition which reflects the proportions of existing frontages, and ensure that architectural detailing is consistent around corners and along minor streets and laneways.

The building facade incorporates strong balcony elements which are rhythmically placed along the horizontal and vertical planes of the facade. Architectural detailing extends around corners and is utilised throughout large portions of the eastern and southern facades. The western facade is more utilitarian, cognisant of the nature of adjacent land and buildings, however, variation is provided through the use of windows. This mitigates the visual bulk of the facade. The western facade provides an appropriate design response to the anticipated thermal loads to ensure that the transfer of heat from the summer sun is minimised.

PDC 21: Development should generally be compatible with the overall desired city form and not exceed the maximum building height shown in Concept Plan Figures CC/1 and 2; unless it meets one or more of the following:

.....

The subject land is identified on Concept Plan Figure CC/1 as having no prescribed height limit. The proposal seeks a building height of some 71.55m. Furthermore, the proposed development will provide an orderly transition up to the approved Angas Street apartment building adjacent the site to the north.

COUNCIL WIDE

PDC 180: Development should respect the composition and proportion of architectural elements of building facades that form an important pattern which contributes to the streetscape's distinctive character in a manner consistent with the desired character of a locality by:

- a. establishing visual links with neighbouring buildings by reflecting and reinforcing the prevailing pattern of visual sub-division in building facades where a pattern of vertical and/or horizontal sub-divisions is evident and desirable, for example, there may be strong horizontal lines of verandahs, masonry courses, podia or openings, or there may be vertical proportions in the divisions of facades or windows; and
- b. clearly defining ground, middle and roof top levels.

The podium of the proposed mixed use building provides a contextual step down from the Roma Mitchell building and approved tower building podium height to the north down to the significantly smaller scale of the two-storey State Heritage item to the south. This forms a transitional visual link from Carrington Street along Nelson Street which respects the value of the heritage place.

The Roma Mitchell building to the north provides a combination of both vertical and horizontal subdivisions whilst the State Heritage building to the south has rectilinear proportions typical of the Victorian period. In short, there is little cohesion in the immediate locality and the building massing and attenuation forms a simple and moderate treatment with both horizontal elements balancing the overall vertical form of the tower.

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PDC 181: Where there is little or no established building pattern, new buildings should create new features which contribute to an areas desired character and the way the urban environment is understood by:

- a. frontages creating clearly defined edges;
- b. generating new compositions and points of interest;
- c. introducing elements for future neighbouring buildings; and
- d. emphasising the importance of the building according to the street hierarchy.

PDC 182: Building facades fronting street frontages, access ways, driveways or public spaces should be composed with an appropriate scale, rhythm and proportion which responds to the use of the building, the desired character of the locality and the modelling and proportions of adjacent buildings.

The proposed development draws upon visual elements from buildings within the locality, particularly, the Roma Mitchell Law Courts which has strong horizontal protrusions from the facade which function as shading devices. The proposed design interprets this feature and provides additional functionality through the combination of balconies with outdoor living spaces.

The absence of fenestration to the northern and southern facades minimises potential interface conflicts with the adjacent law court office spaces and respects the zone intent for further high density development to the south of site.

The proposal utilises a strong podium element which provides visual separation to the tower element. This design methodology has been interpreted from the adjacent building under construction which has a strong podium and upper level setback.

The public square introduced to the locality by the proposed development will provide improved amenity, open space and convenient linkages for future neighbouring buildings.

The building design responds to existing development within the locality and is considered to satisfy the relevant provisions.

PDC 183: Balconies should be designed to give shelter to the street or public space at first floor levels.

The ground floor facade is recessed behind the podium facade above to give shelter to the public space adjacent to the square.

PDC 184: Balconies should:

- a. respond to the street context and building orientation; and
- b. incorporate balustrade detailing to reflect the balcony type and location and the materials and detail of the building facade.

Balcony to the tower element of the proposed development will be finished in white clad soffits and north and south balustrades, whilst permeable balustrades to the east and west primary facades will provide a seamless connection between the balconies and views beyond. This elegant treatment is integral to the simple tower design.

The townhouse first floor balconies are set behind a balustrade of recycled brick which continues up the face from the ground floor to further integrate the outdoor space within the dwelling. The third storey facades are additionally set within a masonry framing element that provides the dominate articulation of their form.

PDC 186: Building services such as drainage pipes together with security grills/screens, ventilation louvres and car park entry doors, should be coordinated and integrated with the overall facade design.

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All building services are selected from the outset to fit within the restrained and robust material palette of the proposed tower building. Services are entirely integrated within the overall facade design as illustrated in the Architectural Plans within Appendix 02 of this report.

PDC 187: The design, external materials, colours and finishes of buildings should have regard to their surrounding townscape context, built form and public environment, consistent with the desired character of the relevant Zone and Policy Area.**PDC 188: Development should be finished with materials that are sympathetic to the design and setting of the new building and which incorporate recycled or low embodied energy materials. The form, colour, texture and quality of materials should be of high quality, durable and contribute to the desired character of the locality. Materials, colours and finishes should not necessarily imitate materials and colours of an existing streetscape****PDC 189: Materials and finishes that are easily maintained and do not readily stain, discolour or deteriorate should be utilised.****PDC 190: Development should avoid the use of large expanses of highly reflective materials and large areas of monotonous, sheer materials (such as polished granite and curtained wall glazing).**

The design of the building utilises materials, colour and finishes that are typical to multi-storey residential development. A range of glazing and solid concrete will ensure that the building respects the surrounding built form and public environment. The proposed materiality is robust and will ensure that materials do not readily stain, discolour or deteriorate. The balcony elements will throw shade over the significant glazing of the east and west facades.

PDC 194: Roof top plant and ancillary equipment that projects above the ceiling of the top storey should:

- a. be designed to minimise the visual impact; and
- b. be screened from view, including the potential view looking down or across from existing or possible higher buildings, or be included in a decorative roof form that is integrated into the design of the building.

PDC 195: Roof design should facilitate future use for sustainable functions such as:

- a. rainwater tanks for water conservation;
- b. roof surfaces orientated, angled and of suitable material for photovoltaic applications; and/or
- c. "green" roofs (ie roof top gardens structurally capable of supporting vegetation) or water features.

The facades of the tower element will continue up to form a visual screen to ensure that the visual impact of rooftop plant is minimised. The proposed plant areas will mostly be located within the building on the ground floor. A portion of the plant area will also be located at the roof top. The plant screening also minimises potential views looking down or across from future higher buildings. The flat roof has the potential to accommodate photovoltaic panels in the future.

- Objective 50:** Development that enhances the public environment and, where appropriate provides activity and interest at street level, reinforcing a locality's desired character.
- Objective 51:** Development designed to promote pedestrian activity and provide a high quality
- a. experience for City residents, workers and visitors by:
 - b. enlivening building edges;
 - c. creating welcoming, safe and vibrant spaces;
 - d. improving perceptions of public safety through passive surveillance; and
 - e. creating interesting and lively pedestrian environments.
- PDC 196:** Development should be designed to create active street frontages that provide activity and interest to passing pedestrians and contribute to the liveliness, vitality and security of the public realm.
- PDC 197:** Retail frontages should be designed to provide interest to passing pedestrians at street level and relief to building mass.
- PDC 199:** Residential development should be designed to create interesting pedestrian environments and resident surveillance of any street, accessway and driveway.

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Commercial development and communal residential amenity has been incorporated within the ground floor design which will activate the proposed public square and Penny Place. The proposed development will contribute to the vitality and security of the surrounding public realm.

The townhouses also look onto the public square from their first and second floor balconies, providing all hour casual surveillance over the space.

05.3.3 CONSERVATION AND HERITAGE

- PDC 140:** Development on land adjacent to a heritage place in non-residential Zones or Policy Areas should incorporate design elements, including where it comprises an innovative contemporary design, that:
- a. utilise materials, finishes, and other built form qualities that complement the adjacent heritage place; and
 - b. is located no closer to the primary street frontage than the adjacent heritage place.

The podium element of the proposed tower incorporates recycled brick which complements the western facade materiality of the State Heritage building to the south. This materiality is continued through to the lower portion of the townhouses to provide cohesion to the overall scheme and built fabric surrounding the new public square provided by the development.

The proposed development is set back from Nelson Street to further retain prominence of the Carrington Street State Heritage building.

05.3.4 MEDIUM TO HIGH SCALE RESIDENTIAL DEVELOPMENT

- PDC 5:** Development should comprise of a range of housing types, tenures and cost, to meet the widely differing social and economic needs of residents.

The proposed development offers a range of one and two bedroom apartments. The apartments will be priced at various points allowing for a differing social and economic take-up. Furthermore four more traditional townhouse offerings are included within the subject development. This combination will attract a diversity of residents, including a range of owner occupiers to create a vibrant community.

Objective 22: Medium to high scale residential (including student accommodation) or serviced apartment development that:

- a. has a high standard of amenity and environmental performance;
- b. comprises functional internal layouts;
- c. is adaptable to meet a variety of accommodation and living needs; and
- d. includes well-designed and functional recreation and storage areas.

The proposed development provides access to natural light and ventilation to every bedroom and living area. This creates a development which has a high standard of internal amenity and environmental performance. The floor plans correspond to structural columns and as such are configurable and adaptable to allow flexibility for future uses. Storage areas have been provided within each apartment.

Equally, the north-south orientation of the townhouses overlooking the public to the north provides a high degree of amenity and access to light. Small private northern courtyards and balconies further contribute to the amenity of the townhouses. Well-designed storage areas are provided within the townhouses and their garages.

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PDC 48: Entrances to medium to high scale residential or serviced apartment development should:

- a. be oriented towards the street;
- b. be visible and easily identifiable from the street; and
- c. provide shelter, a sense of personal address and transitional space around the entry.

PDC 49: Entrances to individual dwellings or apartments within medium to high scale residential or serviced apartment development should:

- a. be located as close as practical to the lift and/or lobby access and minimise the need for long access corridors;
- b. be clearly identifiable; and
- c. avoid the creation of potential areas for entrapment.

The proposed lobby space provides a pedestrian entrance directly from Nelson Street, and is clearly identifiable through its design language. The entry door has been recessed to provide shelter for the building's occupants and an internal lobby creates a sense of personal address. The primary lobby entry is from the Penny Place public square which is clearly visible from the street from both Penny Place and surrounding commercial tenancies and is set behind an activated and sheltered transitional space.

The proposed development utilises a compact building core which limits the apartments to eight per floor each accessed via a straight corridor from the lifts which do not incorporate recesses. Entrances to dwellings will be clearly numbered to avoid confusion.

The traditional nature of the townhouse typology means that the individual townhouse residences proposed will be easily identifiable and accessed via their secure front courtyards via the proposed public square.

PDC 50: Medium to high scale residential or serviced apartment development should be designed to maximise opportunities to facilitate natural ventilation and capitalise on natural daylight and minimise the need for artificial lighting during daylight hours.

The proposed development provides direct access to natural light and ventilation for all bedrooms and living areas, minimising the need for artificial lighting during daylight hours.

PDC 51: Medium to high scale residential or serviced apartment development should be designed and located to maximise solar access to dwellings and communal open space on the northern facade.

Cognisant of the surrounding built form, in order to optimise the particular site the tower element is configured east-west

and all apartments are equally afforded solar access. The communal open space, by way of the public square will retain high levels of sunlight access further afforded by set backs of the surrounding built form.

The townhouses have ideal north-south configurations with living areas having protected solar access to the north by way of the public square.

PDC 52: Ceiling heights that promote the use of taller windows, highlight windows, fan lights and light shelves should be utilised to facilitate access to natural light, improve daylight distribution and enhance air circulation, particularly in dwellings with limited light access and deep interiors.

PDC 53: All new medium to high scale residential or serviced apartment development should have direct ventilation and natural light.

PDC 54: The maximum distance of a habitable room such as a living, dining, bedroom or kitchen from a window providing natural light and ventilation to that room is 8 metres.

All apartments have a maximum depth of six metres and have open plan layout of living dining and kitchen areas. The bathrooms are the sole rooms without external windows.

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A range of the proposed windows and doors are openable to the outside facilitating direct ventilation into each apartment.

Natural cross ventilation of habitable rooms has been achieved by utilising the following design techniques:

- positioning of window and door openings in different directions;
- providing windows which are configurable to funnel breezes;
- incorporating simple internal layouts to minimise airflow interruptions;
- limiting apartment depth to allow ease of cross ventilation; and
- providing robust window sills to ensure draft penetration is minimal.

The townhouses have a maximum depth of less than seven metres and the open plan layout on the first floor facilitates direct ventilation and natural light throughout. All doors are openable to the balconies and windows to the south are equally openable.

PDC 56: Medium to high scale residential or serviced apartment development should be designed to ensure living areas, private open space or communal open space, where such communal open space provides the primary area of private open space, are the main recipients of sunlight.

Each apartment has between 22 and 29m² of private open space provided by balconies which are the main recipients of sunlight to the apartments providing the capacity for balcony gardens and encouraging outdoor living.

The private courtyards and balconies proposed for the townhouses both have a northern orientation providing an opportunity for the planting of a small to medium deciduous tree for optimal microclimatic conditions within the courtyard.

PDC 57: Medium to high scale residential or serviced apartment development should locate living areas, private open space and communal open space, where such communal open space provides the primary area of private open space, where they will receive sunlight and, where possible, should maintain at least two hours of direct sunlight solar time on 22 June to:

- a. at least one habitable room window (excluding bathroom, toilet, laundry or storage room windows);
- b. to at least 20 percent of the private open space; and
- c. communal open space, where such communal open space provides the primary private open space for any adjacent residential development.

The shadow diagrams within Appendix 02 of this report demonstrate that the proposed development accords with PDC 57.

PDC 58: Natural cross ventilation of habitable rooms should be achieved by the following methods:

- a. positioning window and door openings in different directions to encourage cross ventilation from cooling summer breezes;
- b. installing small low level windows on the windward side and larger raised openings on the leeward side to maximise airspeed in the room;
- c. installing higher level casement or sash windows, clerestory windows or operable fanlight windows to facilitate convective currents;
- d. selecting windows which the occupants can reconfigure to funnel breezes such as vertical louvred, casement windows and externally opening doors;
- e. ensuring the internal layout minimises interruptions to airflow;
- f. limiting building depth to allow for ease of cross ventilation; and/or
- g. draught proofing doors, windows and other openings.

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The generous window and door openings, open plan layouts and restricted building depth assist in cross ventilation of the apartments.

Both buildings' doors, windows and other openings will be draught-proofed in order to achieve a high level of environmental performance.

PDC 59: Medium to high scale residential development and serviced apartments should provide the following private open space:

- a. studio (where there is no separate bedroom): no minimum requirement but some provision is desirable.
- b. 1 bedroom dwelling/apartment: 8 square metres.
- c. 2 bedroom dwelling/apartment: 11 square metres.
- d. 3+ bedroom dwelling/apartment: 15 square metres.

PDC 60: Medium to high scale residential (other than student accommodation) or serviced apartment development should ensure direct access from living areas to private open space areas, which may take the form of balconies, terraces, decks or other elevated outdoor areas provided the amenity and visual privacy of adjacent properties is protected.

PDC 61: Other than for student accommodation, private open space should have a minimum dimension of 2 metres and should be well proportioned to be functional and promote indoor/outdoor living.

Typically the apartment typologies have a balcony size of the following area:

- 1 bedroom apartments - 18-22 square metres; and
- 2 bedroom apartments - 21-29 square metres.

Each of the balconies have a minimum dimension of 3 metres and are accessed directly from all bedrooms and living areas and will be facilitate outdoor living. Balconies are separated by at least 1.5 metres and privacy is protected by blades that protrude 1.5 metres from the facade, minimising views into neighbouring dwellings.

The 2 bedroom townhouses have private open space by way of ground floor courtyards, and first and second floor balconies connected to the habitable spaces. All balconies are of a sufficient size and depth to be functional and promote indoor/outdoor living.

PDC 62: Balconies should be integrated into the overall architectural form and detail of the development and should:

- a. utilise sun screens, pergolas, shutters and openable walls to control sunlight and wind;
- b. be cantilevered, partially cantilevered and/or recessed in response to daylight, wind, acoustic and visual privacy;
- c. be of a depth that ensures sunlight can enter the dwelling below; and
- d. allow views and casual surveillance of the street while providing for safety and visual privacy.

Balconies are integral to the simple architectural form and create the horizontal articulation of the tower elements.

The townhouse balconies are equally integrated into the built form, aided by the continuation of the recycled brick facade element, continuing up from the ground floor to form a first floor balustrade which brings the balcony more firmly into the private realm with controlled views inside the townhouses from the north, particularly at night when internal lights are on.

PDC 66: Medium to high scale residential or serviced apartment development should be designed and sited to minimise the potential overlooking of habitable rooms such as bedrooms and living areas of adjacent development.

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The subject development has an orientation which is perpendicular to that under construction on the balance of the allotment which limits the visual penetration of glazing. Furthermore, the proposed balconies are at least 16 metres from the balconies of the adjacent approved tower.

Equally, the subject tower balconies are located at minimum of nine metres from the closest townhouse balcony and are perpendicular in orientation. Screen walls are integrated into the overall design of the townhouses, preventing lateral overlooking of the townhouse balcony elements from the proposed balconies within the apartment building. The townhouses are located more than 30 metres from the approved residential tower to the north. These separation distances are adequate to ensure surrounding residential development is protected from the potential for overlooking of habitable rooms.

PDC 69: Attached or abutting dwellings/apartments should be designed to minimise the transmission of sound between dwellings and, in particular, to protect bedrooms from possible noise intrusions.

An acoustic report included within Appendix 05 describes how the apartments and townhouses will be protected from the transmission of sound from neighbouring apartments with adequate glazing to windows and doors and acoustic seals applied to openable windows and doors. Party walls will be of adequate construction to attenuate noise transmission.

PDC 70: Medium to high scale residential or serviced apartment development should provide a high quality living environment by ensuring the following minimum internal floor areas:

- a. studio (where there is no separate bedroom): 35 square metres.
- b. 1 bedroom dwelling/apartment: 50 square metres
- c. 2 bedroom dwelling/apartment: 65 square metres
- d. 3+ bedroom dwelling/apartment: 80 square metres plus an additional 15 square metres for every additional bedroom over 3 bedrooms.

The one bedroom apartments proposed each have a minimal internal floor area of 63m². The two bedroom apartments have minimum internal floor areas ranging between 63 and 75m².

It is acknowledged that 2 of the 8 two bedrooms apartments per level - a total of 34 apartments fall short of the minimum 65² of internal floor space by 2m². This represents a shortfall of 3% of floor area within 12.5% of the apartments which is not considered a serious departure from PDC 70. It is also noted that these apartments have one bathroom and thus more space is dedicated to other residential amenity rather than the provision of second bathrooms.

PDC 71: Internal structural columns should correspond with the position of internal walls to ensure that the space within the dwelling/apartment is useable.

- PDC 72:** Within medium to high scale residential or serviced apartment development, dwelling/apartment layouts should be adaptable to accommodate:
- a. a range of activities and privacy levels between different spaces;
 - b. flexible room sizes and proportions;
 - c. efficient circulation to optimise the functionality of floor space within rooms; and
 - d. the future reuse of student accommodation as residential apartments through a design and layout that allows individual apartments to be reconfigured into a larger dwelling or other alternative use.

The design has consolidated the internal spaces such that they correspond with the position structural columns, such that internal spaces are functional.

The proposal incorporates apartments with flexible footprints and an efficient structural layout which facilitate adaptability within the floorplate.

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- PDC 73:** All medium to high scale residential or serviced apartment development should be designed to ensure the living rooms have a satisfactory external outlook. Living rooms that do not have an outlook or the only source of outlook is through high level windows or a skylight are not considered to provide an appropriate level of amenity for the occupiers.
- PDC 74:** Light wells may be used as a source of daylight, ventilation, outlook and sunlight for medium to high scale residential or serviced apartment development provided that:
- a. living rooms do not have lightwells as their only source of outlook;
 - b. lightwells up to 18 metres in height have a minimum horizontal dimension of 3 metres or 6 metres if overlooked by bedrooms; and
 - c. lightwells higher than 18 metres in height have a minimum horizontal dimension of 6 metres or 9 metres if overlooked by bedrooms.

All apartments have been designed to ensure living rooms have an external outlook and provide a high level of internal amenity for the occupants.

The proposed development is not located abutting any development which would create the need for a lightwell. The design utilises a 6m setback for those apartments facing east, such that should a building be constructed adjacent to the east these apartments will maintain an acceptable level of amenity.

- PDC 80:** Site facilities should be readily accessible to each dwelling/serviced apartment, complement the development and relevant desired character and should include:
- a. a common mail box structure located close to the main pedestrian entrance;
 - b. areas for the storage and collection of goods, materials, refuse and waste including facilities to enable the separation of recyclable materials as appropriate to the size and nature of the development and screened from public view; and
 - c. external clothes drying areas for residential dwellings that do not incorporate ground level open space.
- PDC 81:** Medium to high scale residential (other than student accommodation) or serviced apartment development should provide adequate and accessible storage facilities for the occupants at the following minimum rates:
- a.
 - b. 1 bedroom dwelling/apartment: 8 cubic metres
 - c. 2 bedroom dwelling/apartment: 10 cubic metres
 - d.
- 50 percent of the storage space should be provided within the dwelling/apartment with the remainder provided in the basement or other communal areas.

The proposed development provides a range of site facilities which are accessible to each dwelling and incorporate the following:

- a common mailbox structure located close to the pedestrian entrance; and
- areas for the storage and collection of waste which include areas for recycling.

Areas for storage have been provided within each apartment of that meet or exceed the minimum criteria stipulated within PDC 81, in addition there are 34 storage cages provided adjacent the car parking areas from ground to Level 3.

05.3.4 LANDSCAPING

Objective 55: Water conserving landscaping that enhances the local landscape character and creates a pleasant, safe and attractive living environment.

PDC 207: Landscaping should:

- a. be selected and designed for water conservation;
- b. form an integral part of the design of development; and
- c. be used to foster human scale, define spaces, reinforce paths and edges, screen utility areas and enhance the visual amenity of the area.

PDC 208: Landscaping should incorporate local indigenous species suited to the site and development, provided such landscaping is consistent with the desired character of the locality and any heritage place.

PDC 209: Landscaping should be provided to all areas of communal space, driveways and shared car parking areas.

A landscape design has been prepared by Woods Bagot with input by Tract. The final design for the public square and pedestrian linkages is to be created with input from Adelaide City Council in order to comply with the above provisions within the Development Plan. A combination of jacarandas, climbers, native rush and shade tolerant flowering plants requiring little maintenance will combine to form a high amenity area.

The shared access way of the townhouses will have landscaping provided inside the southern boundary which will also screen the transformer from the surrounding public areas. This is depicted within the landscape plan included within Appendix 02 of this report.

05.3.5 ENVIRONMENTAL

PDC 82: Development should promote the safety and security of the community in the public realm and within development. Development should:

- a. promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:
 - i. orientating windows, doors and building entrances towards the street, open spaces, car parks, pedestrian routes and public transport stops;
 - ii. avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;

- iii. arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;
- iv. positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;
- v. creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;
- vi. locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;
- vii. ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and
- viii. ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.
- i. to avoid the creation of shadowed areas; and
- ii. use of robust and durable design features to discourage vandalism.
- b. provide access control by facilitating communication, escape and path finding within development through legible design by:
 - i. incorporating clear directional devices;
 - ii. avoiding opportunities for concealment near well travelled routes;
 - iii. closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;
 - iv. use of devices such as stainless steel mirrors where a passage has a bend;
 - v. locating main entrances and exits at the front of a site and in view of a street;
 - vi. providing open space and pedestrian routes which are clearly defined and have clear and direct sightlines for the users; and
 - vii. locating elevators and stairwells where they can be viewed by a maximum number of people, near the edge of buildings where there is a glass wall at the entrance.
- c. promote territoriality or sense of ownership through physical features that express ownership and control over the environment and provide a clear delineation of public and private space by:
 - i. clear delineation of boundaries marking public, private and semi-private space, such as by paving, lighting, walls and planting;
 - ii. dividing large development sites into territorial zones to create a sense of ownership of common space by smaller groups of dwellings; and
 - iii. locating main entrances and exits at the front of a site and in view of a street.
- d. provide awareness through design of what is around and what is ahead so that legitimate users and observers can make an accurate assessment of the safety of a locality and site and plan their behaviour accordingly by:
 - i. avoiding blind sharp corners, pillars, tall solid fences and a sudden change in grade of pathways, stairs or corridors so that movement can be predicted;
 - ii. using devices such as convex security mirrors or reflective surfaces where lines of sight are impeded;
 - iii. ensuring barriers along pathways such as landscaping, fencing and walls are permeable;
 - i. planting shrubs that have a mature height less than one metre and trees with a canopy that begins at two metres;
 - i. adequate and consistent lighting of open spaces, building entrances, parking and pedestrian areas

PDC 83: Residential development should be designed to overlook streets, public and communal open space to allow casual surveillance.

The proposed development will incorporate a comprehensive range of active and passive surveillance strategies. All public areas will be well lit to enable facial recognition so that people can see and interact with one another.

The buildings have been designed to maximize the visual connections between the internal spaces with outdoor areas. For instance, residential apartments have external views and provide passive surveillance the public realm. The building design eliminates isolated external nooks, eliminating opportunities for hiding. All entry points to the building will be clearly

identified by the architecture, lighting and signage.

The proposal will create a 'legible environment', by integrating the architecture, landscaping, interior design, lighting and signage. This will provide clear paths of travel to ensure that wayfinding is made simple. The wayfinding strategy has been developed as an integral part of the overall design strategy, and embedded into the proposed design.

Providing clearly defined paths of travel to and from all entrances has been a central component of the proposal. The main public entrance fronts a public thoroughfare and square and is directly accessible from the public realm. A pedestrian access point has been provided through the vehicular access point which serves the dual function of providing easy access and negating the creation of an area of entrapment. The paths of travel from surrounding public transit stops will be clearly defined through the existing road network. Vehicular routes will be clearly delineated and distinguished from pedestrian pathways and zones through the use of distinctive paving, lighting, surface textures and kerbs.

A robust and simple material palette has been expressed throughout the design language.

Having regard to the commentary above, it is considered that the proposal achieves the intent of the Crime Prevention through Urban Design provisions of the Development Plan.

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- Objective 27:** Noise sensitive development designed to protect its occupants from existing noise sources and from noise sources contemplated within the relevant Zone or Policy Area and that does not unreasonably interfere with the operation of non-residential uses contemplated within the relevant Zone or Policy Area.
- PDC 95:** Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise sources such as major transport corridors (road, rail, tram and aircraft), commercial centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.
- PDC 96:** Noise sensitive development in mixed use areas should not unreasonably interfere with the operation of surrounding non-residential uses that generate noise levels that are commensurate with the envisaged amenity of the locality.
- PDC 97:** Noise sensitive development adjacent to noise sources should include noise attenuation measures to achieve the following:
- a. satisfaction of the sleep disturbance criteria in the bedrooms or sleeping areas of the development as defined by the limits recommended by the World Health Organisation;
 - b. the maximum satisfactory levels in any habitable room for development near major roads, as provided in the Australian/New Zealand Standard AS/NZS 2107:2000 - 'Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors'; and
 - c. noise level in any bedroom, when exposed to music noise (L10) from existing entertainment premises, being:
 - i. less than 8 dB above the level of background noise (L90,15 min) in any octave band of the sound spectrum; and
 - ii. less than 5 dB(A) above the level of background noise (LA90,15 min) for the overall (sum of all octave bands) A-weighted levels.
- PDC 98:** Attached dwellings/serviced apartments should be designed to minimise the transmission of sound between dwellings/serviced apartments and should particularly protect bedrooms from possible noise intrusion.
- PDC 99:** The number of dwellings/serviced apartments within a development sharing a common entry should be minimised to limit noise generation in internal access ways.

The following acoustic treatment has been recommended:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the

environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

The Acoustic Assessment has been provided within Appendix 05.

- PDC 101:** A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.
- PDC 102:** A dedicated area for the collection and sorting of construction waste and the recycling of building materials during construction as appropriate to the size and nature of the development should be provided and screened from public view.
- PDC 103:** Development greater than 2 000 square metres of total floor area should manage waste by:
- a. containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;
 - b. on-site storage and management of waste;
 - c. disposal of non-recyclable waste; and
 - d. incorporating waste water and stormwater re-use including the treatment and re-use of grey water.

A waste management strategy has been prepared as part of the proposed development. Generally, waste chutes and communal storage are proposed. The Waste Management Plan is provided in Appendix 04.

- PDC 107:** All development should be designed to promote naturally ventilated and day lit buildings to minimise the need for mechanical ventilation and lighting systems.

The proposed development provides for an east-west orientation which maximises access to sunlight for all apartments. To ensure that all apartments achieve solar shading which optimises interior amenity, deep balconies have been provided along the length of the facade which provides for shading of the window below. This design reduces the need for mechanical ventilation while maximising access to natural light.

The facade has been designed to provide shading during summer and allow entry of the winter sun which provides for passive heating and cooling. The proposal utilises openable windows and doors to allow for the cross ventilation.

- PDC 111:** New buildings should be readily adaptable to future alternative uses.

The proposed utilises a simple structural column layout which can be easily adapted to future alternative uses.

- PDC 126:** Development that is over 21 metres in building height and is to be built at or on the street frontage should minimise wind tunnel effect.

Vipac has carefully considered the flow structures likely to be generated by the proposed development that would affect ground level areas. From this analysis, Vipac predicts that all the ground footpath and building entrances would be expected to have the wind conditions within the recommended criteria. As such, Vipac makes no recommendations to alter the building form design for the pedestrian level comfort wind environment.

As a general statement, educating residents about wind conditions at high-level balconies and terrace areas during high-wind event and tying down loose lightweight furniture are highly recommended.

The Environmental Wind Assessment has been provided in Appendix 07.

- PDC 126:** Development of stormwater management systems should be designed and located to improve the quality of stormwater, minimise pollutant transfer to receiving waters, and protect downstream receiving waters from high levels of flow.
- PDC 128:** Development should incorporate appropriate measures to minimise any concentrated stormwater discharge from the site.

PDC 129: Development should incorporate appropriate measures to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria and litter and other contaminants to the stormwater system and may incorporate systems for treatment or use on site.

The proponent is currently considering a range of stormwater retention and Water Sensitive Urban Design initiatives. The proposed development has the potential to incorporate the following:

- rainwater harvesting and recycling for irrigation use within the common areas;
- efficient fittings and appliances within each apartment and tenancy; and
- re-use of fire system test water.

A stormwater management plan is provided in Appendix 08.

05.3.6 ECONOMIC DEVELOPMENT

PDC 266: Development, particularly within the Capital City and Institutional Zones, is encouraged to:

- provide a range of shopping facilities in locations that are readily accessible;
- provide for the growth in economic activities that sustain and enhance the variety and mix of land uses and the character and function of the City;
- maximise opportunities for co-location, multiple use and sharing of facilities;
- be accessible to all modes of transport (particularly public transport) and safe pedestrian and cycling routes; and
- have minimal impact on the amenity of residential areas.

PDC 272: Development should not unreasonably restrict the development potential of adjacent sites, and should have regard to possible future impacts such as loss of daylight/sunlight access, privacy and outlook.

The proposed development is located in the Capital City Zone and:

- provides retail development at the ground floor;
- provides a mix of land uses;
- is in a location which is in close proximity to public transport routes and cycling routes; and
- will have a minimal impact on the amenity of residential areas.

A key element of the proposed design has been to minimise potential economic impacts on adjacent land. The proposal has been sited such that it fronts Nelson Street to the east, proposed public realm to the west, and a developed building to the north. The land uses surrounding the subject land will not have an impact on its potential to gain access to natural light or ventilation. To the south, exists a state heritage place and other developed sites. The orientation of the building ensures that these should these properties seek to develop they will be able to achieve access to sunlight which meets the minimum criteria.

The proposed development incorporates a range of design responses which satisfy the relevant economic development provisions.

05.3.7 TRANSPORT AND ACCESS

Objective 62: Development that contributes to the quality of the public realm as a safe, secure and attractive environment for pedestrian movement and social interaction.

Objective 65: Adequate supply of secure, short stay and long stay bicycle parking to support desired growth in City activities.

Objective 66: Development that promotes the use of sustainable transport consistent with State Government objectives and initiatives.

Objective 70: Adequate off-street facilities for loading and unloading of courier, delivery and service vehicles and access for emergency vehicles.

GTA Consultants have prepared a traffic impact statement relating to the proposed development. The traffic impact statement summarises:

- the proposed development generates a maximum development plan car parking requirement of 244 spaces.
- the proposed supply of 134 spaces does not exceed the development plan maximum and is considered appropriate for the proposed development.
- the proposed parking layout is consistent with the dimensional requirements as set out in the Australian/New Zealand Standards for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009).
- the provision of 140 on-site bicycle parking spaces is considered adequate for the proposed development.
- the proposed development is well located in relation to existing pedestrian routes, bicycle lanes and bus and tram based public transport.
- the proposed refuse collection arrangements from Nelson Street are considered appropriate.
- the site is expected to generate up to 20 and 180 vehicle movements in any peak hour and daily respectively.
- there is adequate capacity in the surrounding road network to cater for the traffic generated by the proposed development .

The Traffic Impact Statement has been provided within Appendix 03 for your consideration.

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CONCLUSIONS

It is concluded that the proposal is an appropriate development within the Capital City Zone, for the following reasons:

- the proposed land uses reflect the advocated land use direction within the specific provisions of the Policy Area and the relevant Desired Character Statement and provisions of the Zone;
- the building form reflects the advocated policy direction within the Policy Area and Zone;
- the material palette will be sympathetic and complementary to the prevailing built form appearance within the locality;
- an appropriate waste management solution which separate waste streams at the source, and ensures collection can occur in accordance with council guidelines has been provided. Commercial bin collection will be dealt with through the use of a private contractor;
- the proposed development utilises appropriate facade materials, window fixtures and fittings to ensure that the acoustic environment will be in accordance with the relevant criteria;
- the subject land is located in proximity to highly frequented public transport routes, with the proposal incorporating an appropriate quantum of on-site car parking and bicycle parking spaces;
- CPTED has been considered throughout the layout of the building, and the proposal satisfies the relevant criteria;
- the proposed development will not adversely affect wind conditions at and around the subject land; and
- the proposal incorporates appropriate stormwater management and ESD initiatives.

It is for the reasons discussed herein that the proposal is considered to display sufficient merit and warrants Development Plan consent being granted.

APPENDIX

01

APPENDIX

02

APPENDIX

03

APPENDIX

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APPENDIX

05

APPENDIX

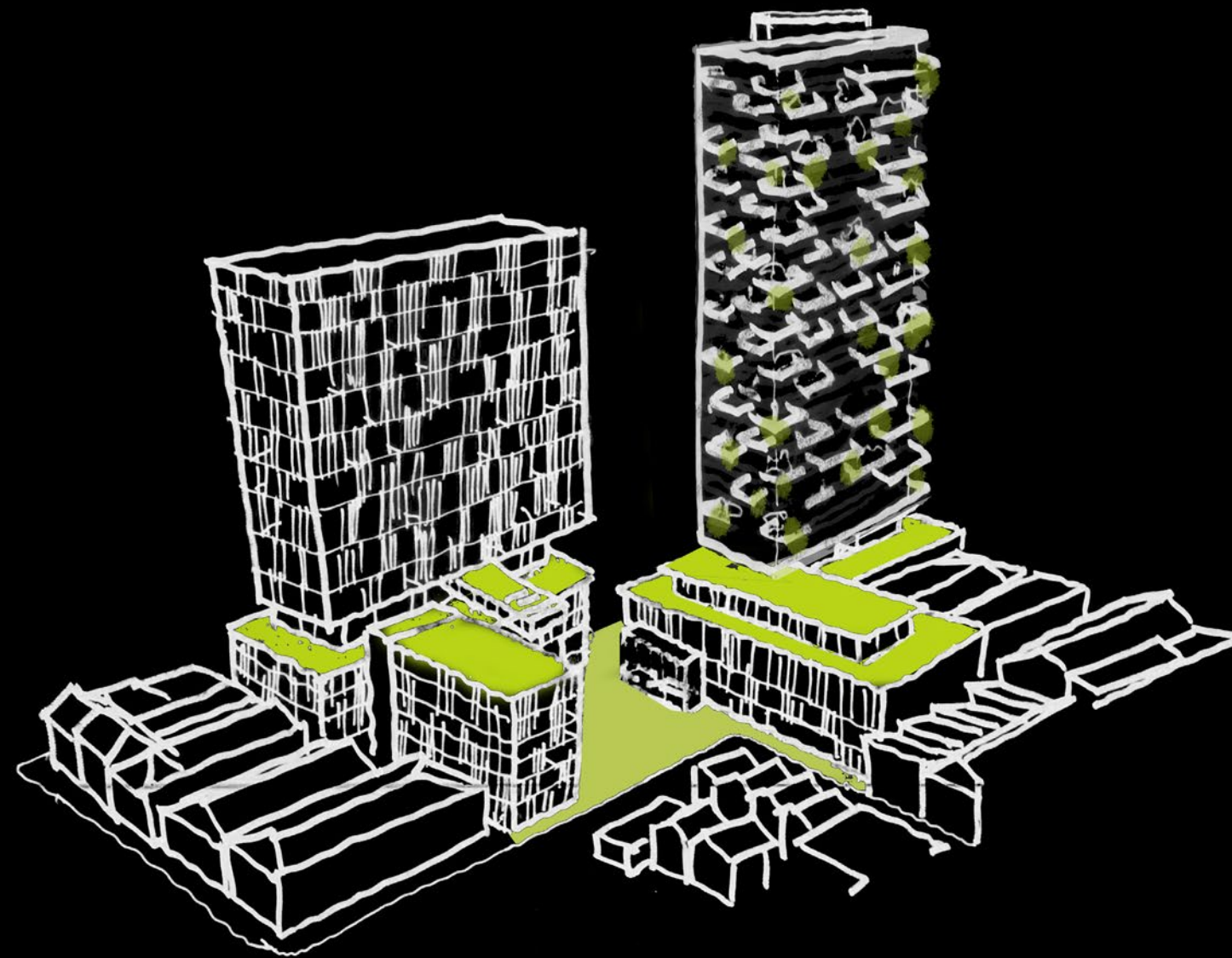
06

APPENDIX

07

Penny Place

27th of October- Development Application



*“Penny Place provides an opportunity to create an
“urban regeneration” of a significant central Adelaide city
site, into a sequentially connected and layered unique
urban experience”*

**WOODS
BAGOT™**

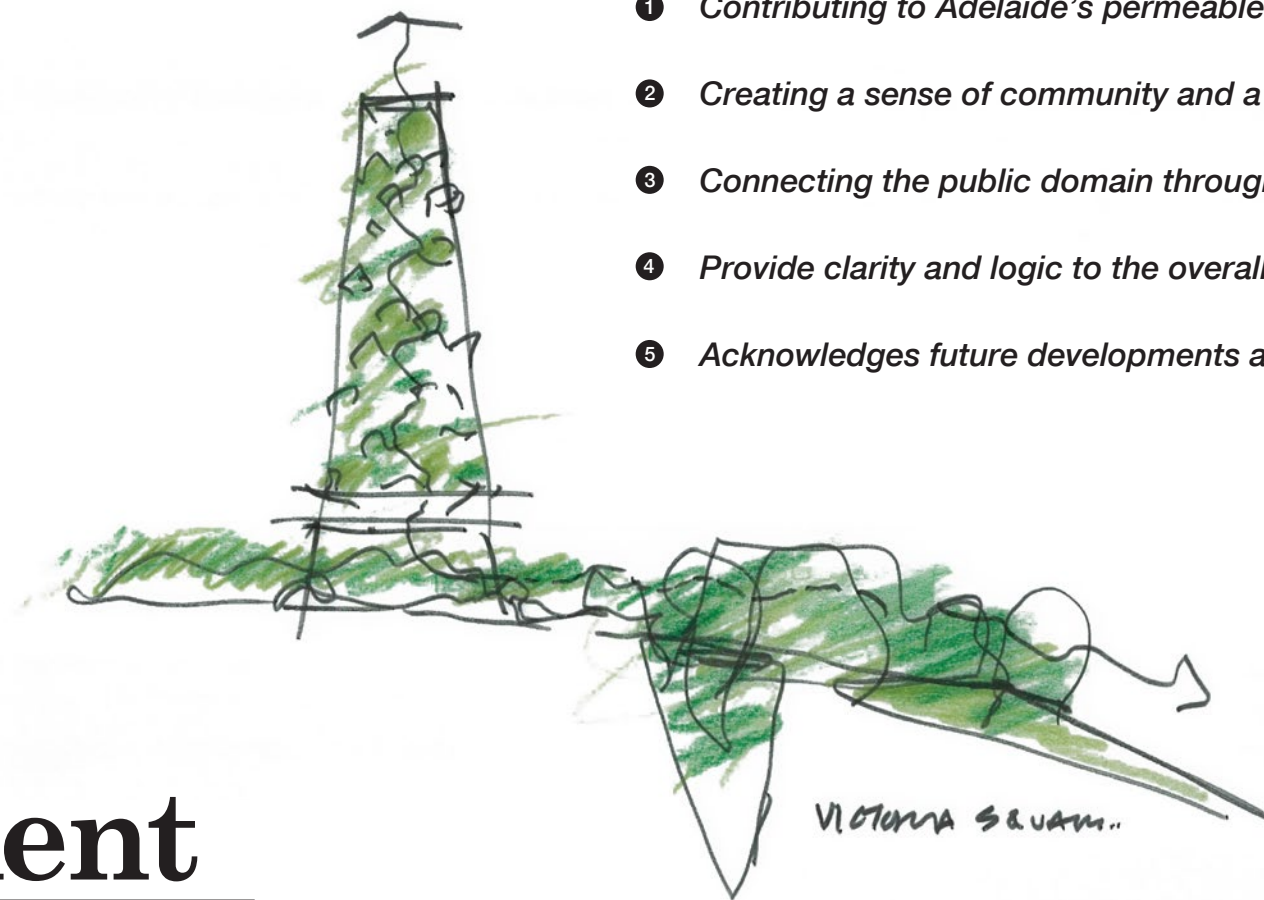
Design Statement

Conceived as precinct, Penny Place consists of a public square flanked by Kodo (the first stage), Penny Place residential tower and town houses. The ground plane provides the community with strong pedestrian connections and active frontages to both Penny Square and Nelson Street.

In this project, the team is looking to leverage our combined skills and experience to develop a SMART product. We referenced this conceptual aspiration against the principles of PEOPLE, DESIGN AND CONSTRUCT to inform the architectural response.

Objectives

- ① *Contributing to Adelaide's permeable urban fabric*
- ② *Creating a sense of community and a safe neighborhood*
- ③ *Connecting the public domain through a series of laneways and public squares*
- ④ *Provide clarity and logic to the overall built form of the precinct*
- ⑤ *Acknowledges future developments and contributes to the Adelaide CBD skyline*



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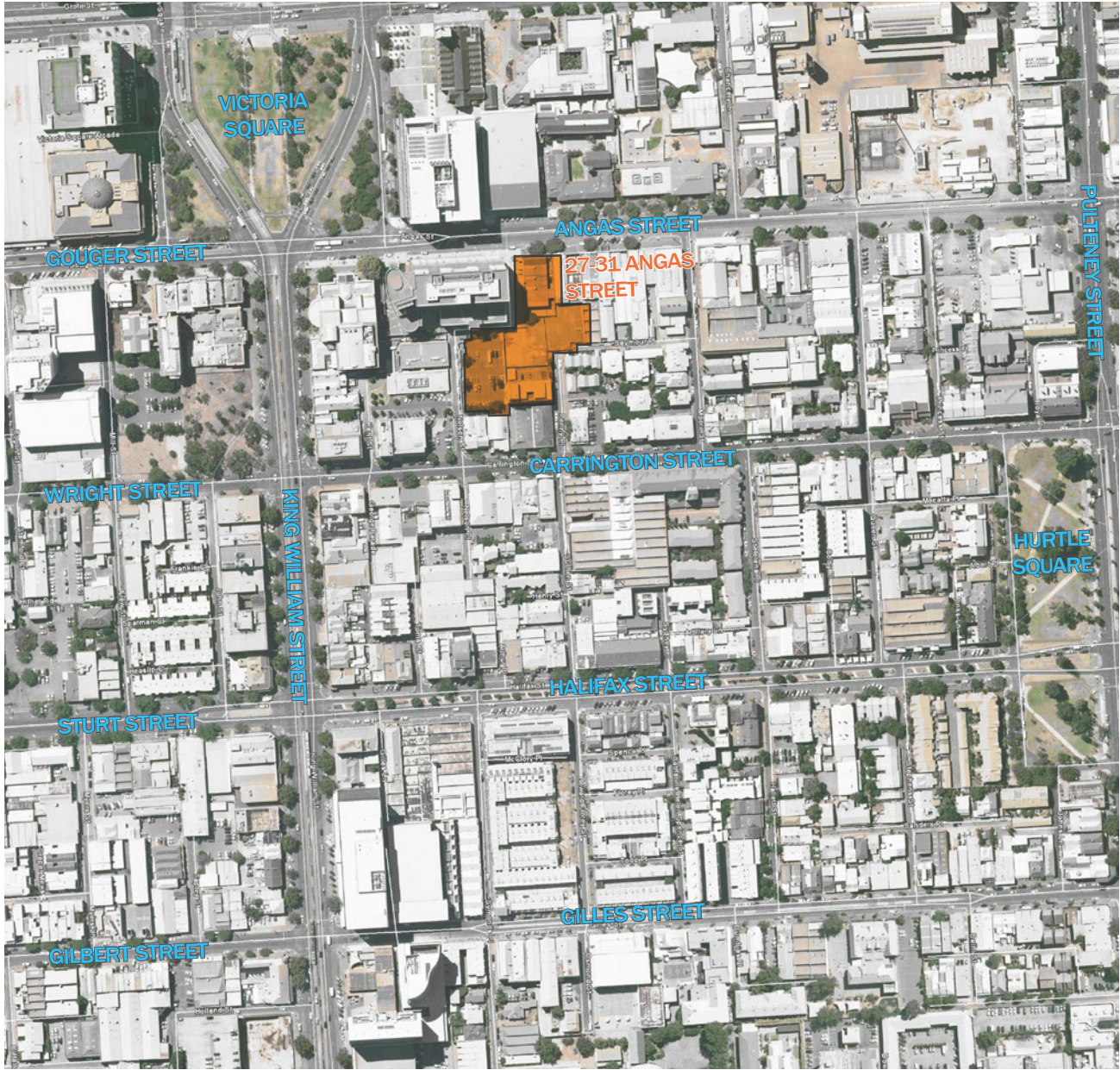
Drawings

01 Site Analysis

01 Development Application
Site Location



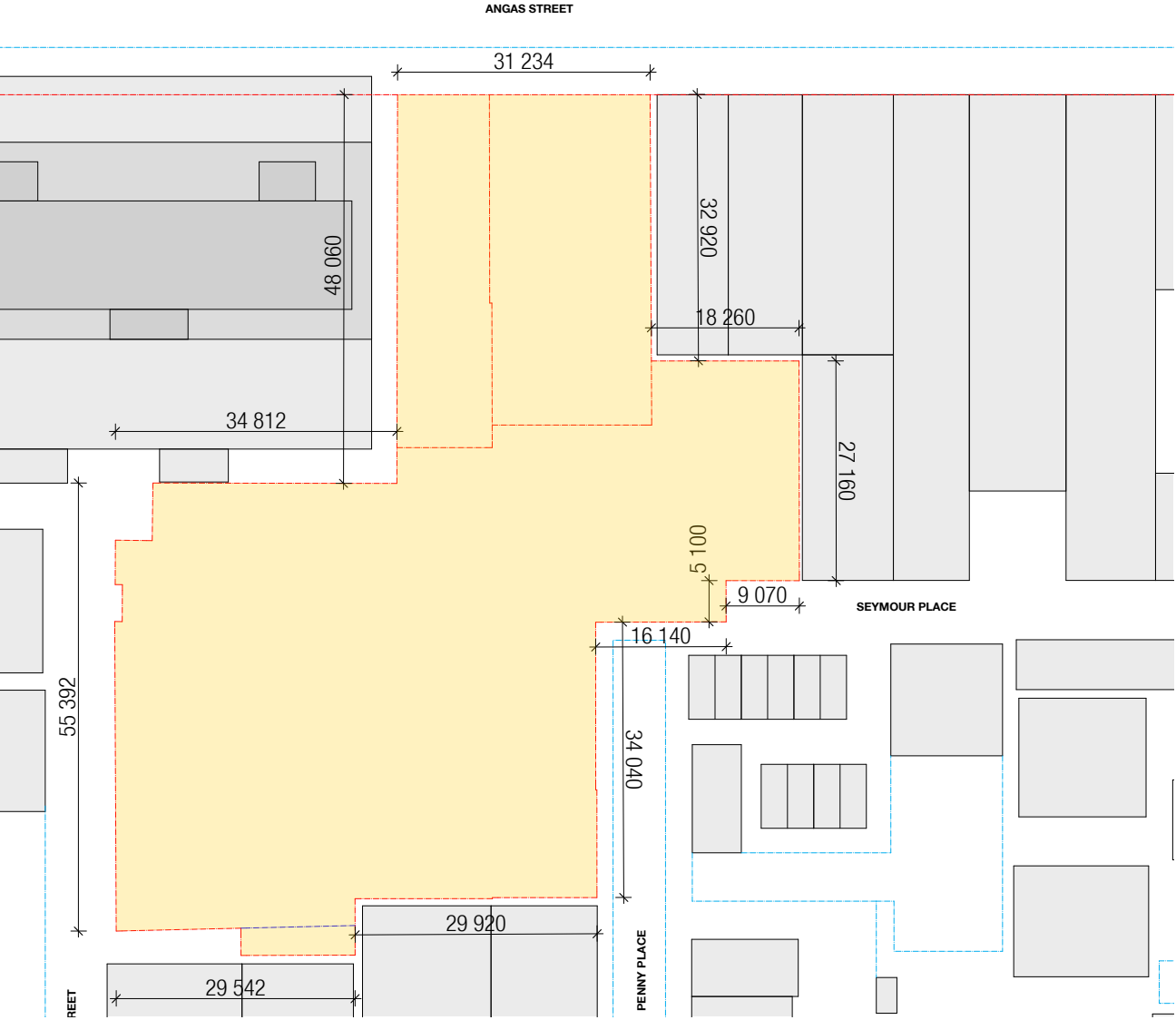
Site Location



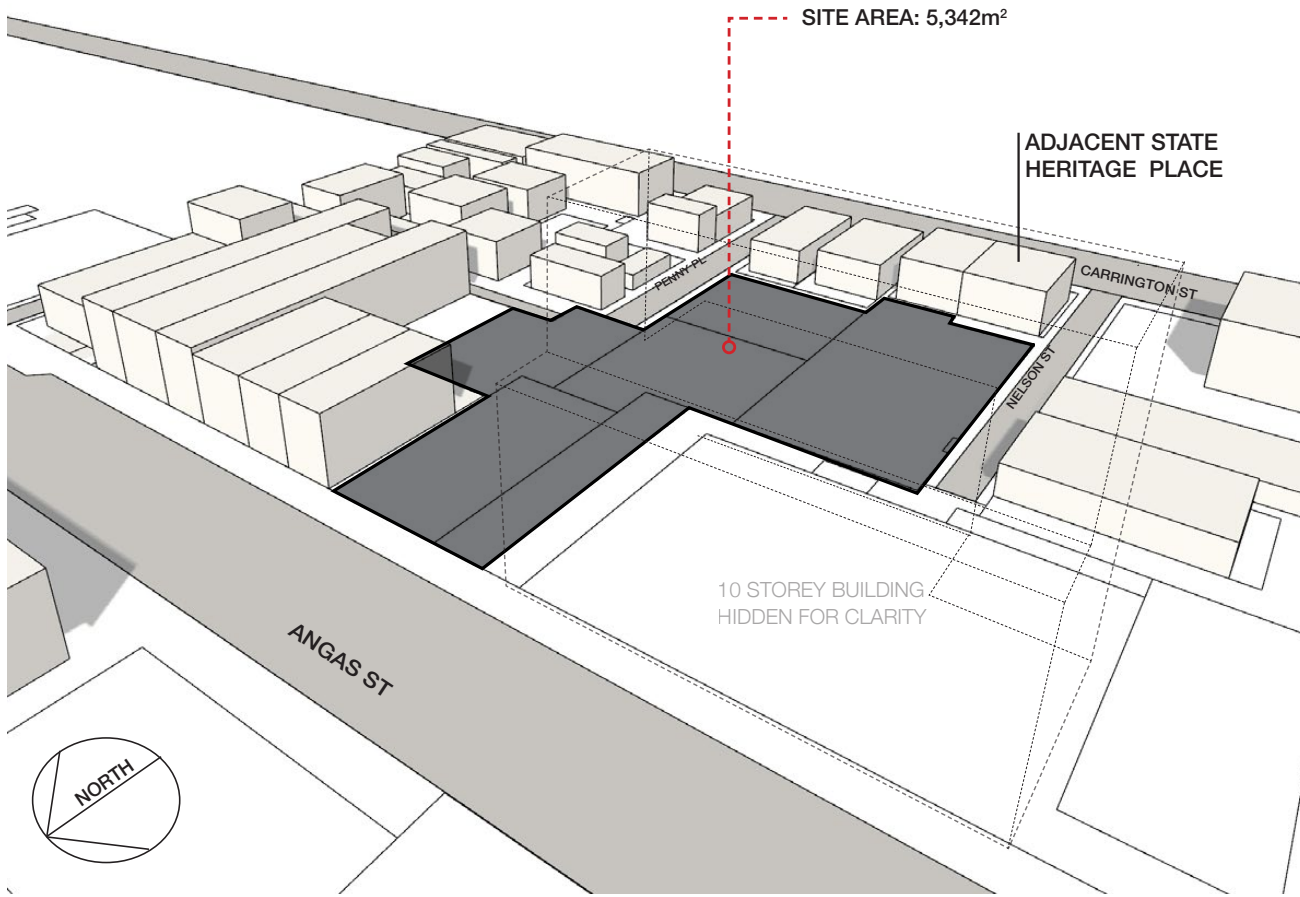
Surrounding Context

01

Development Application
Site Location

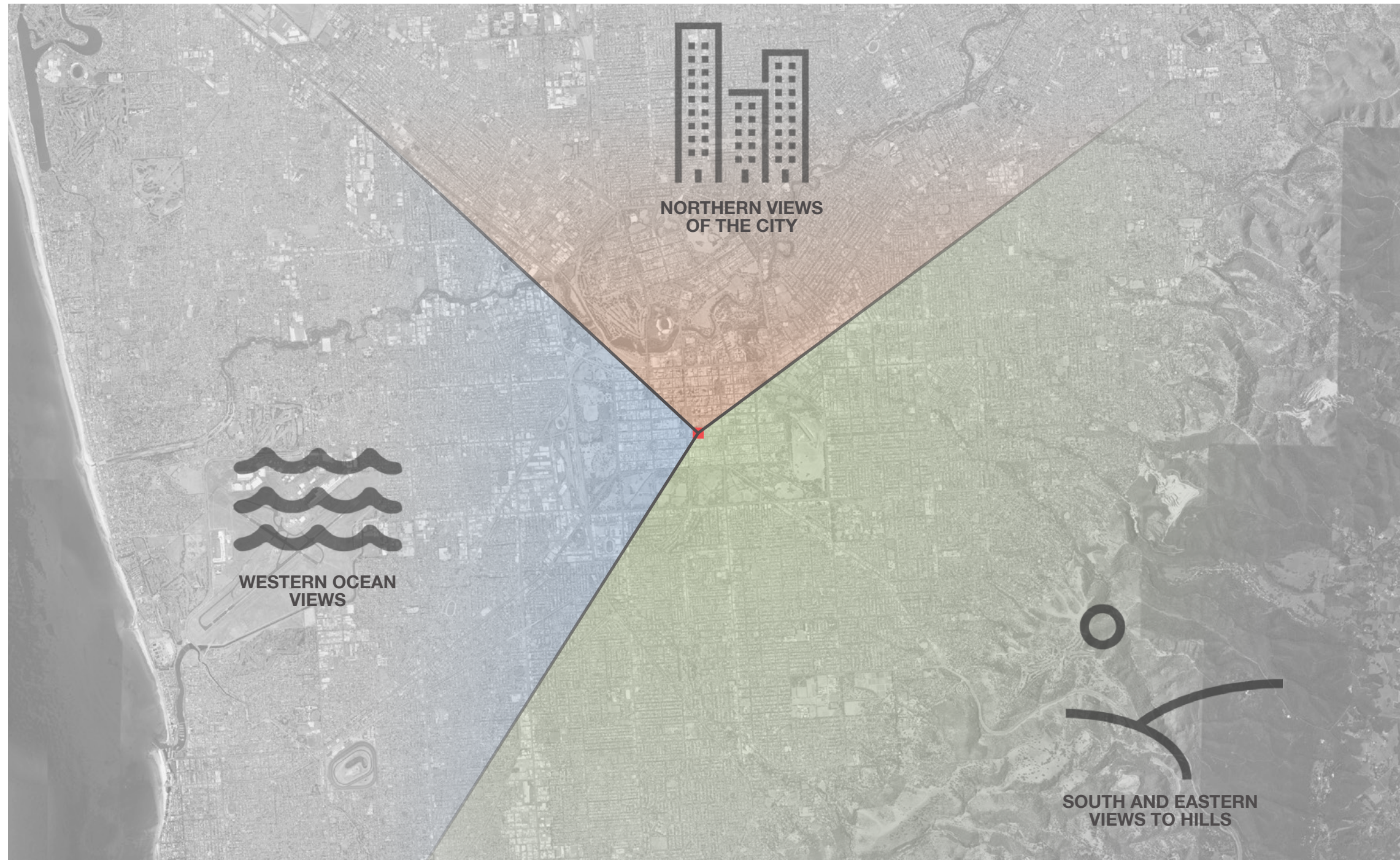


Site Dimensions



Site Context Perspective

01 Development Application Site Analysis



Adelaide View Opportunities

01 Development Application Site Analysis



Adelaide Density Study

Penny Place is located on a significant inner city site in the densely populated 'capital city zone'.

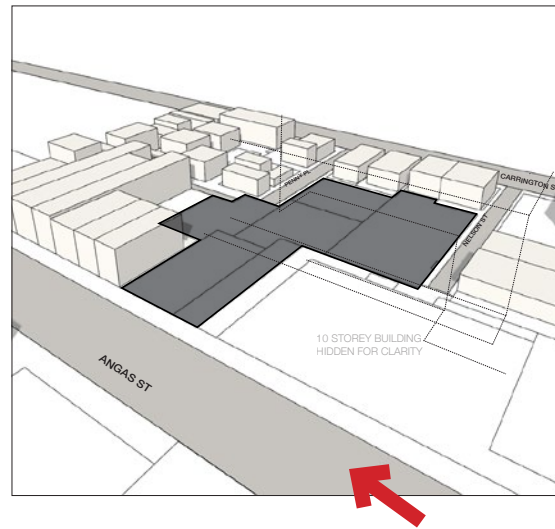
01

Development Application Site Analysis



Precinct Linkages Plan

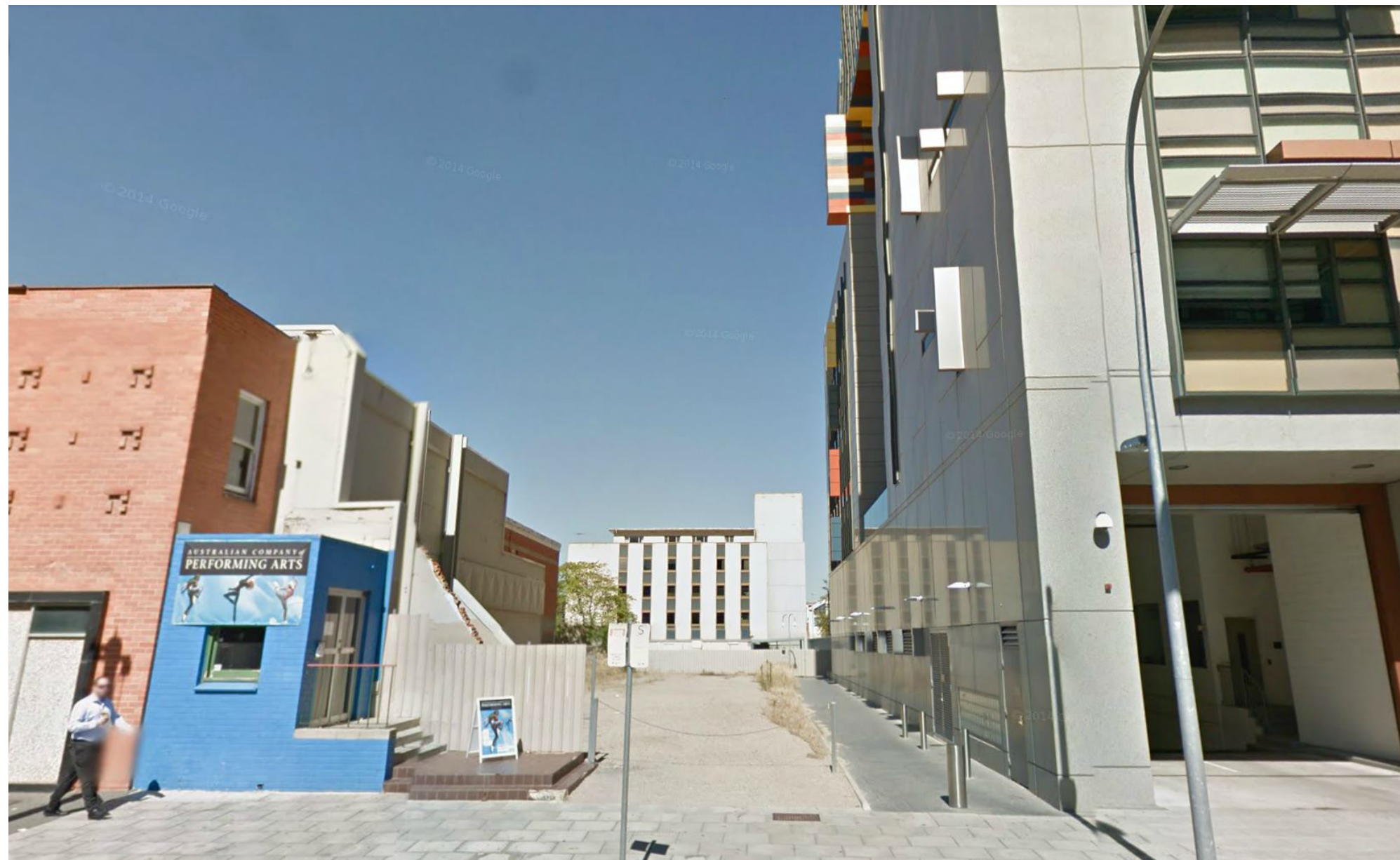
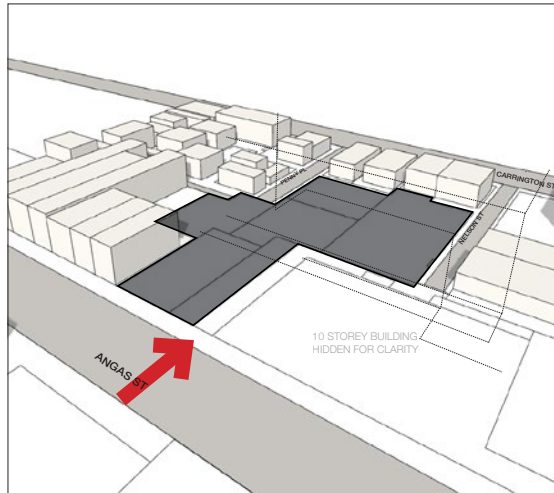
01 Development Application Site Photos



VIEW FROM ANGAS STREET

01 Development Application

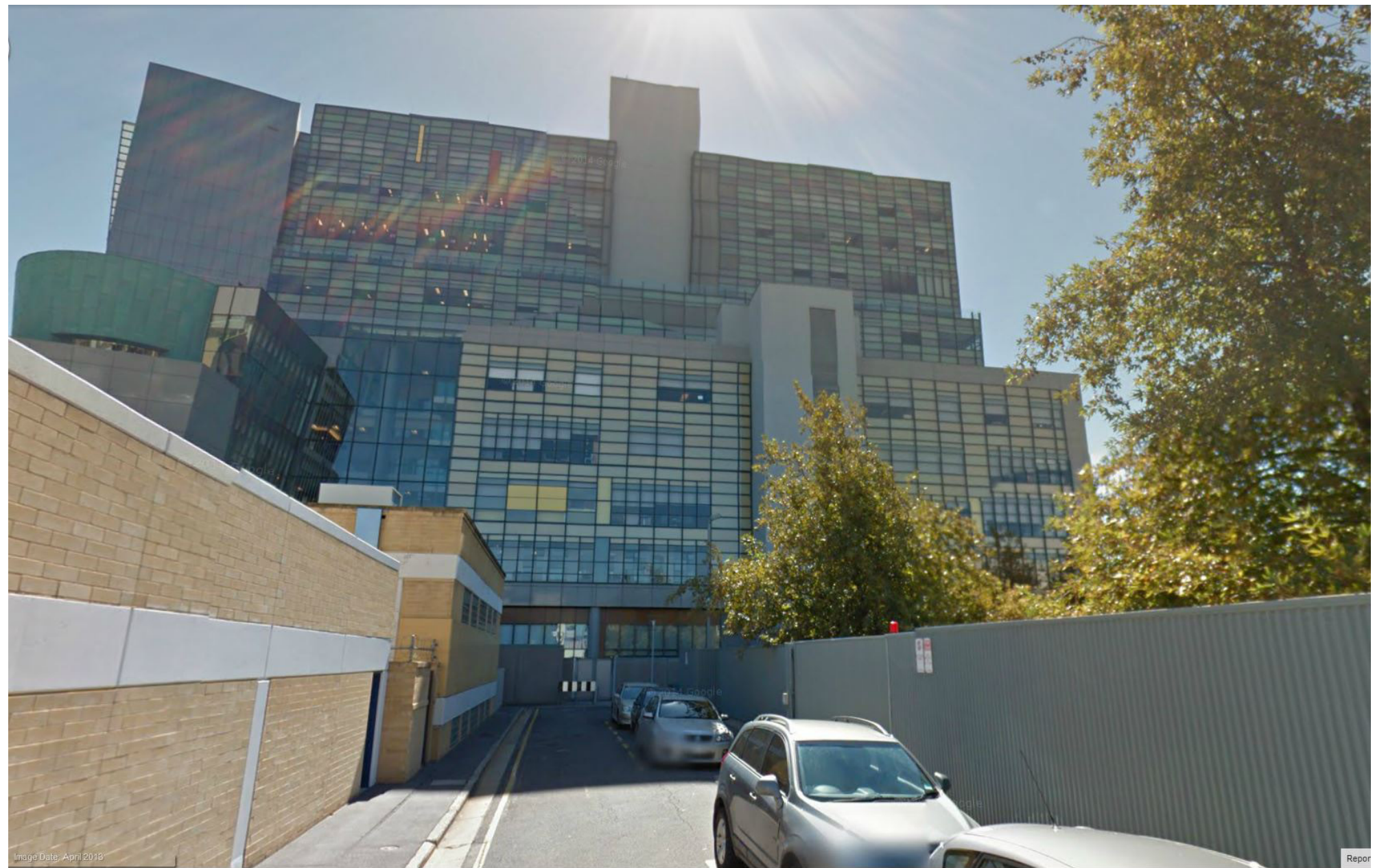
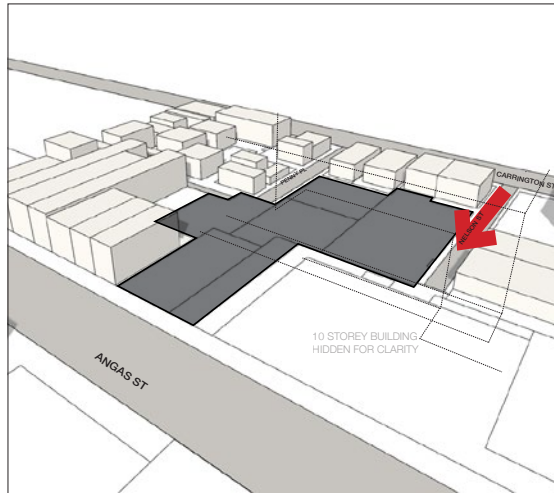
Site Photos



VIEW FROM ANGAS STREET

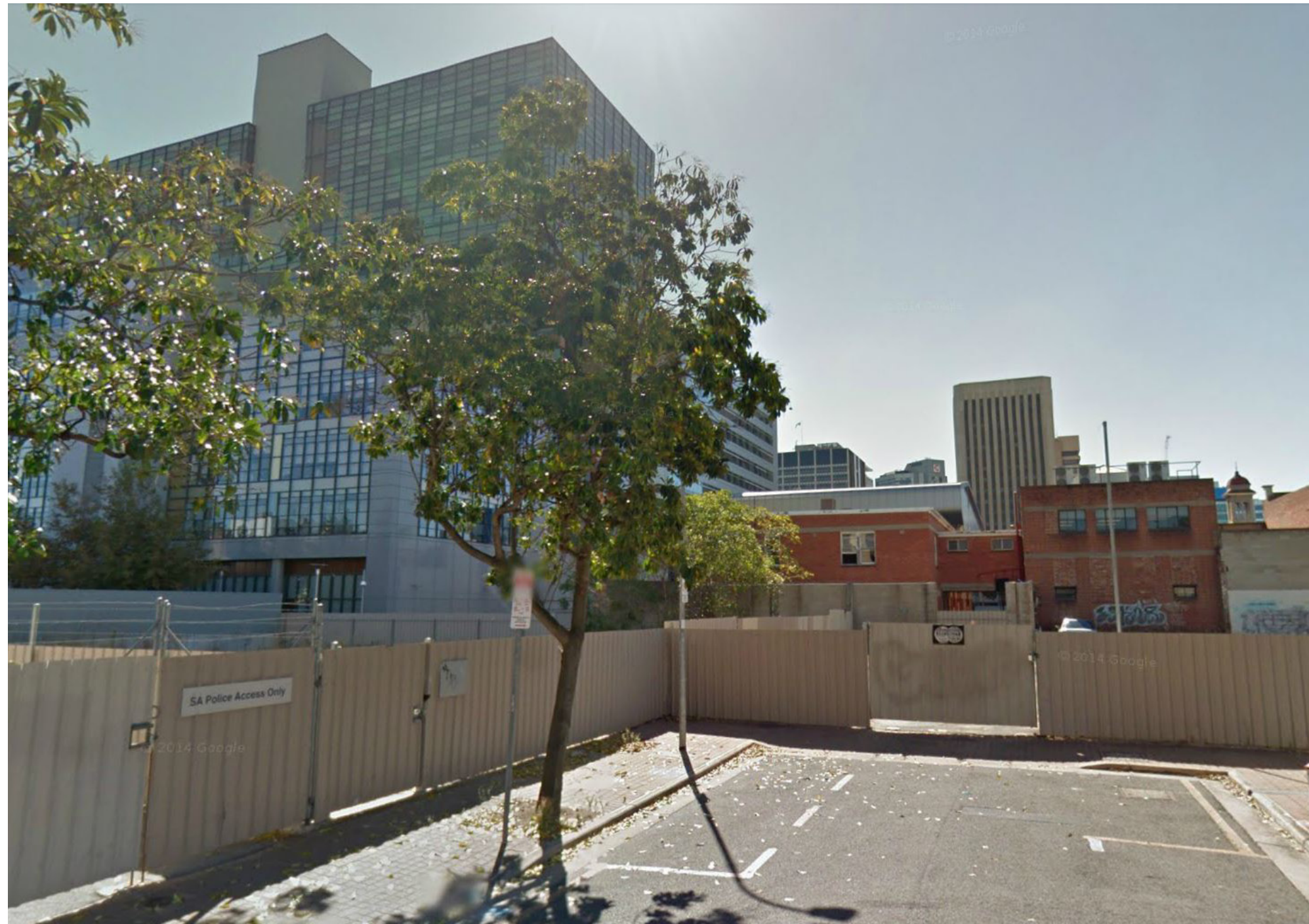
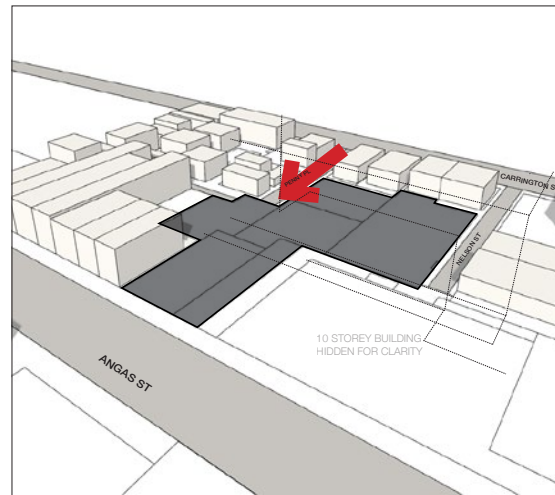
01 Development Application

Site Photos



VIEW UP NELSON STREET

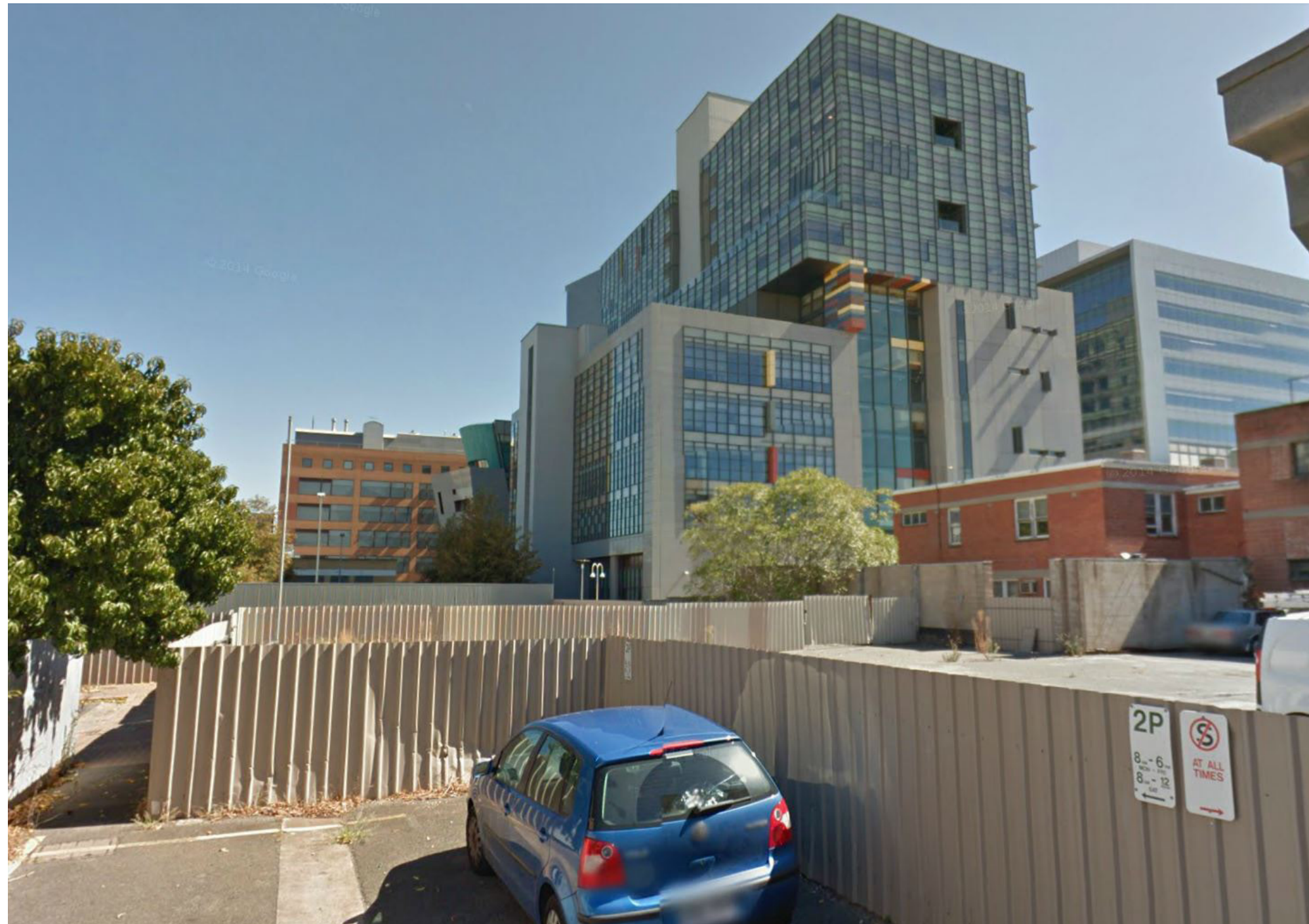
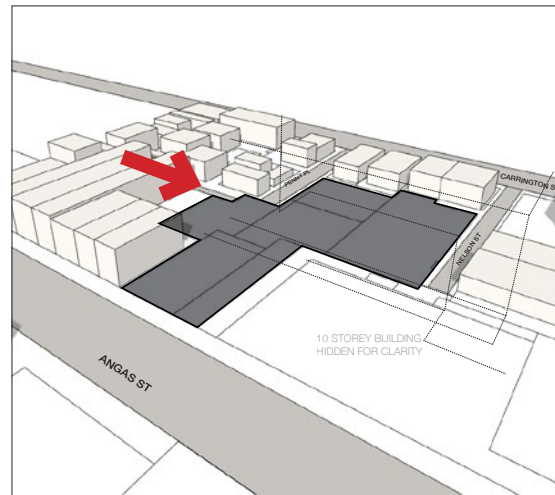
01 Development Application Site Photos



VIEW DOWN PENNY PLACE

01 Development Application

Site Photos



VIEW DOWN SEYMOUR PLACE

01 Development Application

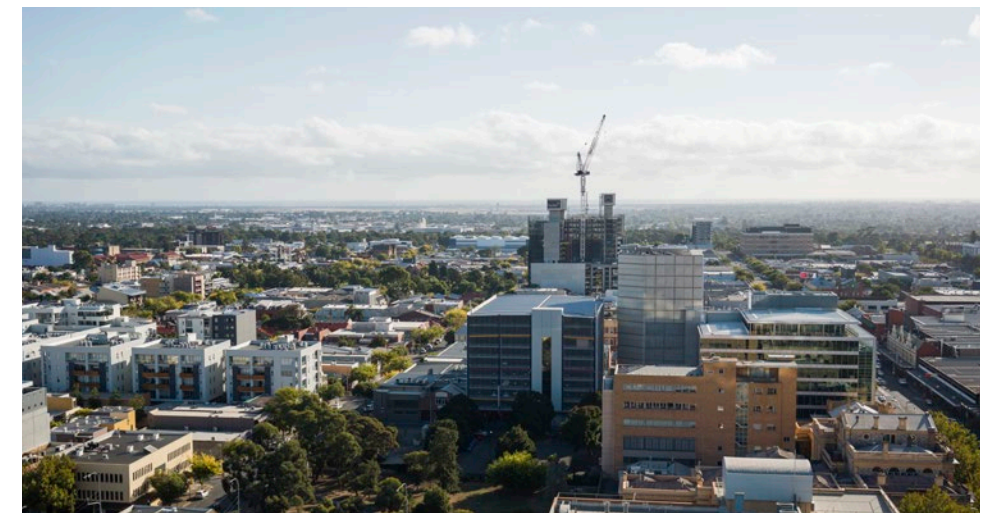
West, South and East View Opportunities



South Parklands



EAST VIEW OPPORTUNITIES



WEST VIEW OPPORTUNITIES

01 Development Application Landmark Capture



Whitmore Square

Hurtle Square

02 Design Principles

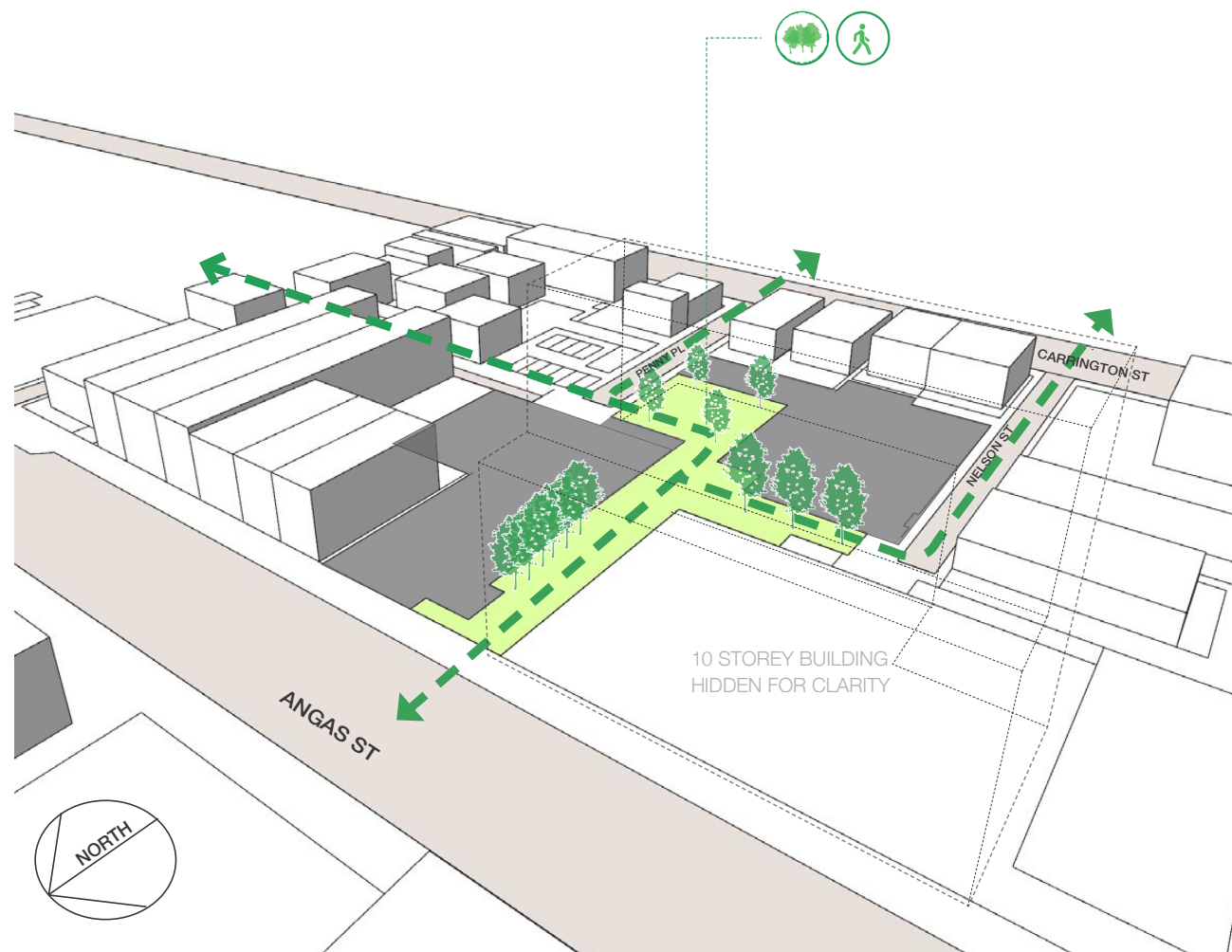
Masterplan



STAGE 1 KODO ANGAS STREET VIEW

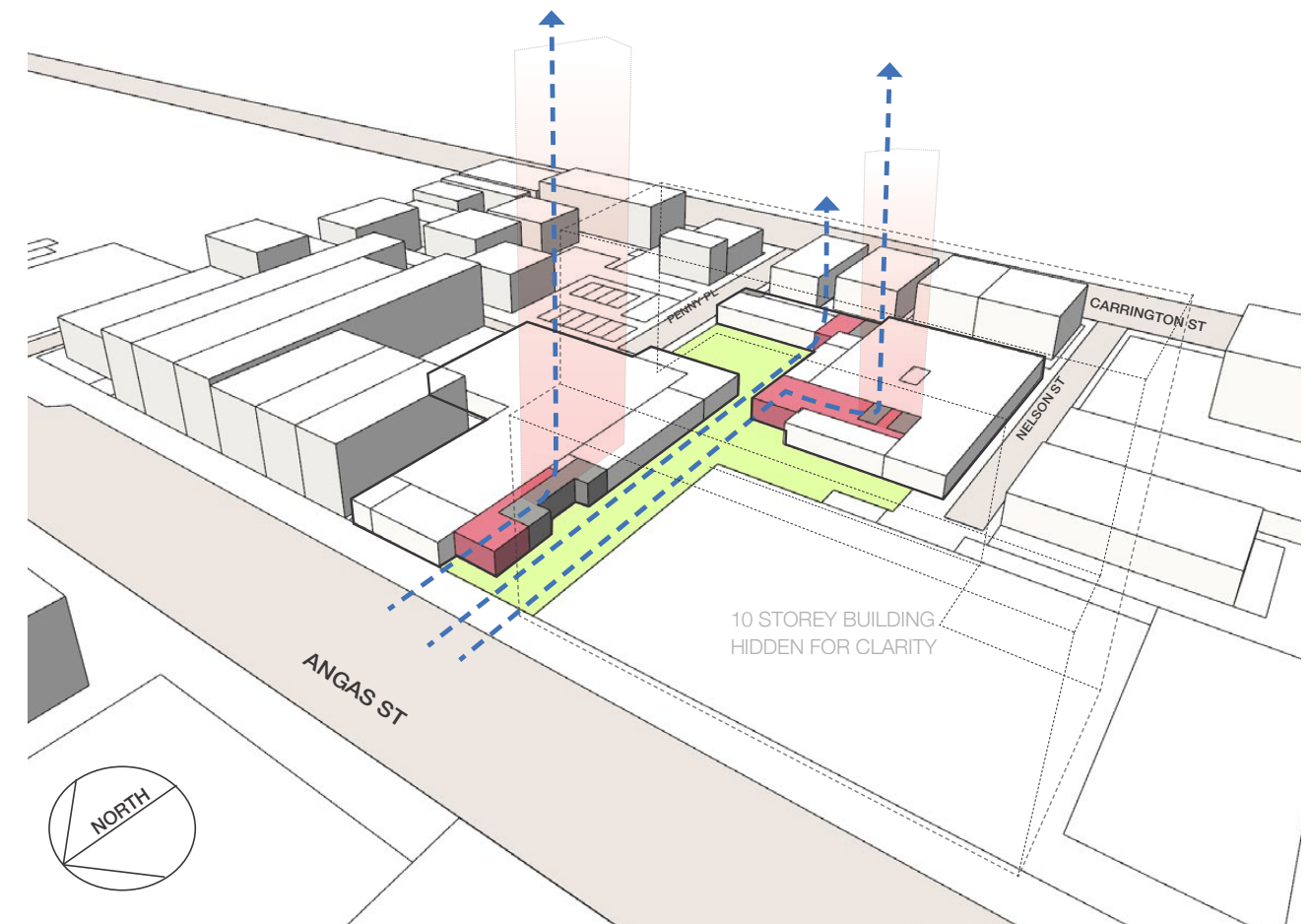
02 Development Application

Design Principles_Masterplan



Pedestrian Connection

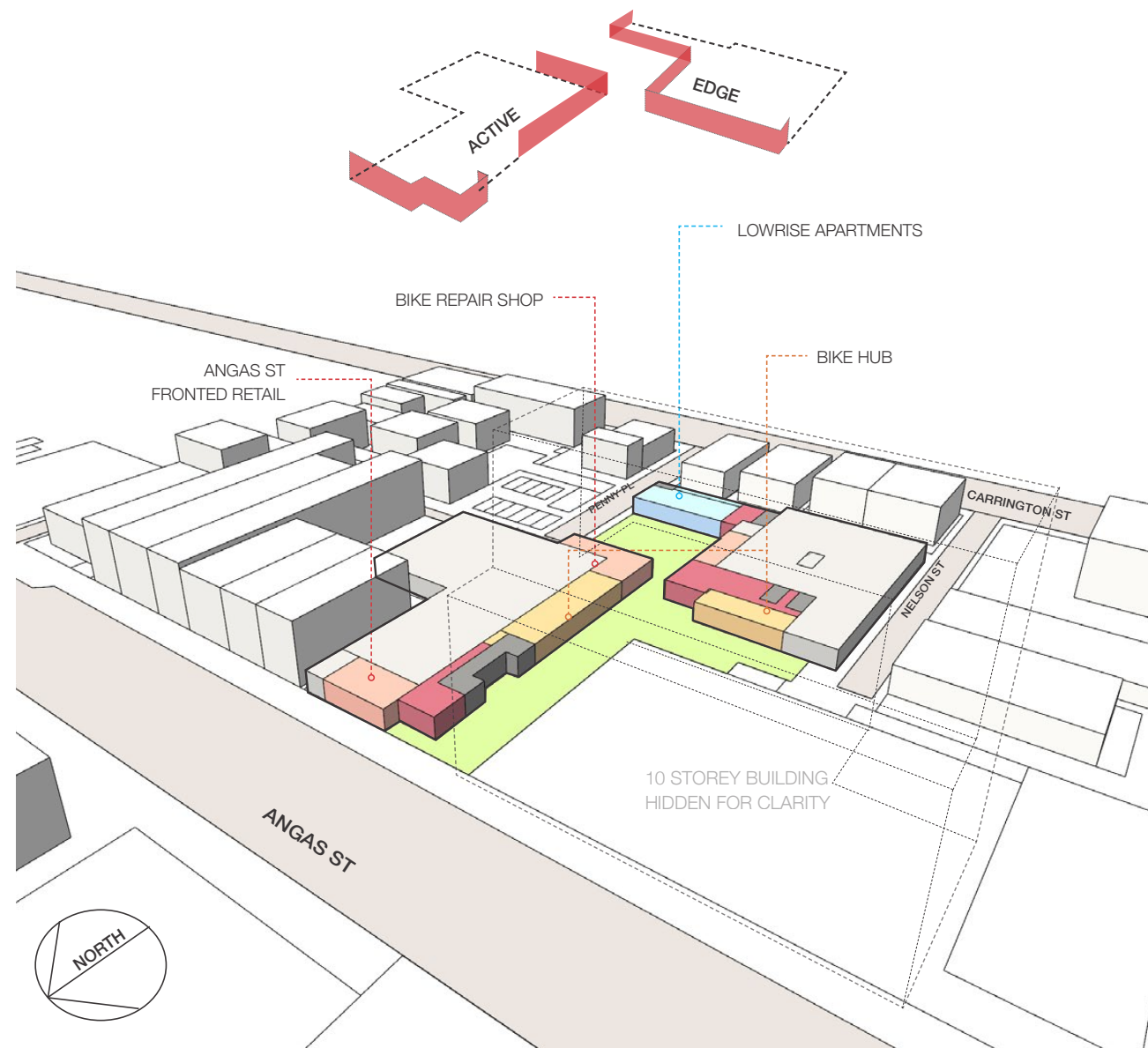
Landscaped pedestrian and bicycle path linking Angas St to Carrington St



Front Door Visibility

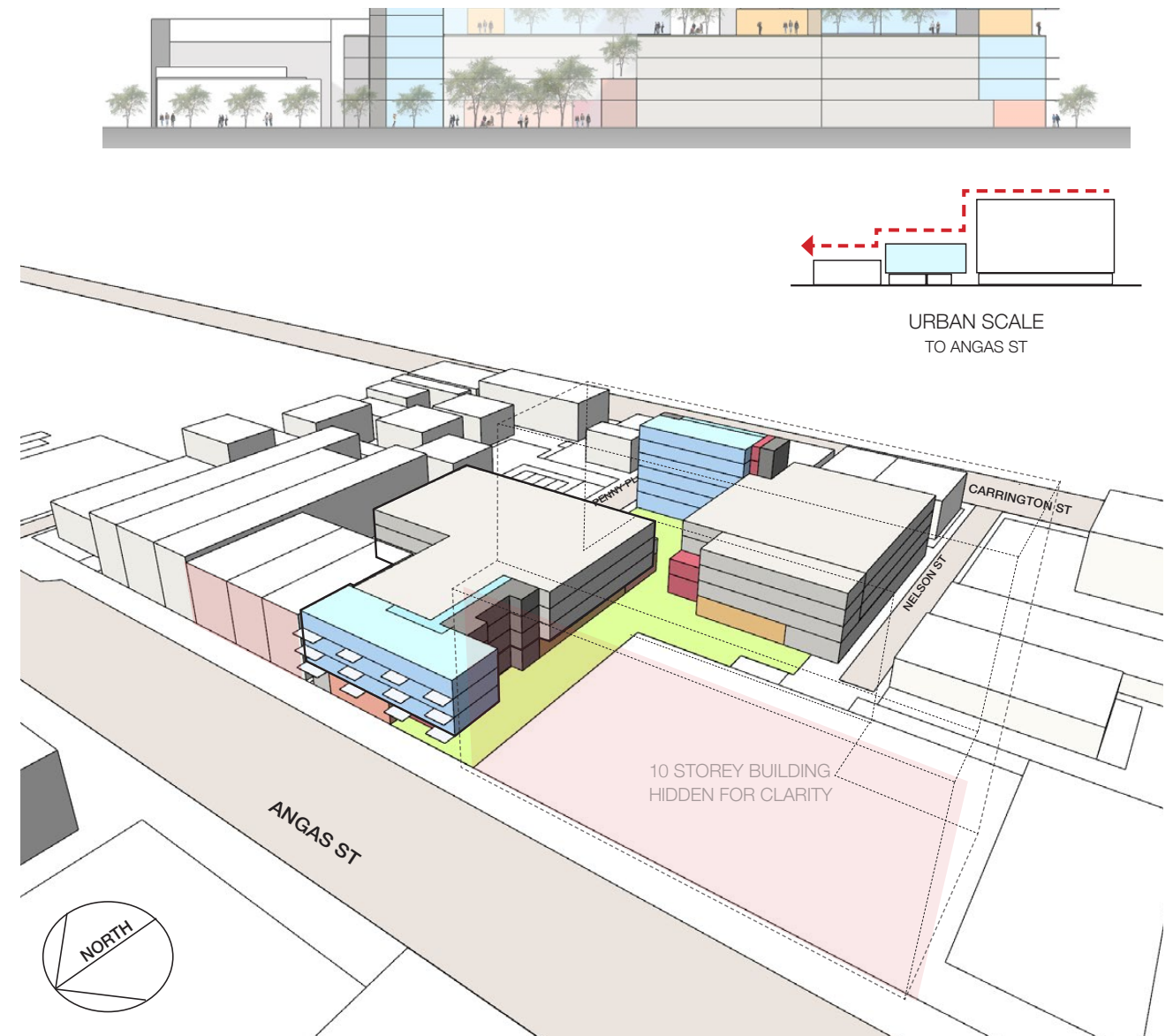
Lobbies as beacons of light defining the entry to the tower apartments

02 Development Application Design Principles_Masterplan



Activated/Safe Pedestrian Interfaces

Garden fronted low rise apartments along with retail and open bike hubs cultivate an active safe laneway



Respecting Urban & Human Scale

Respecting Urban and Human Scale through defining a pronounced low level form

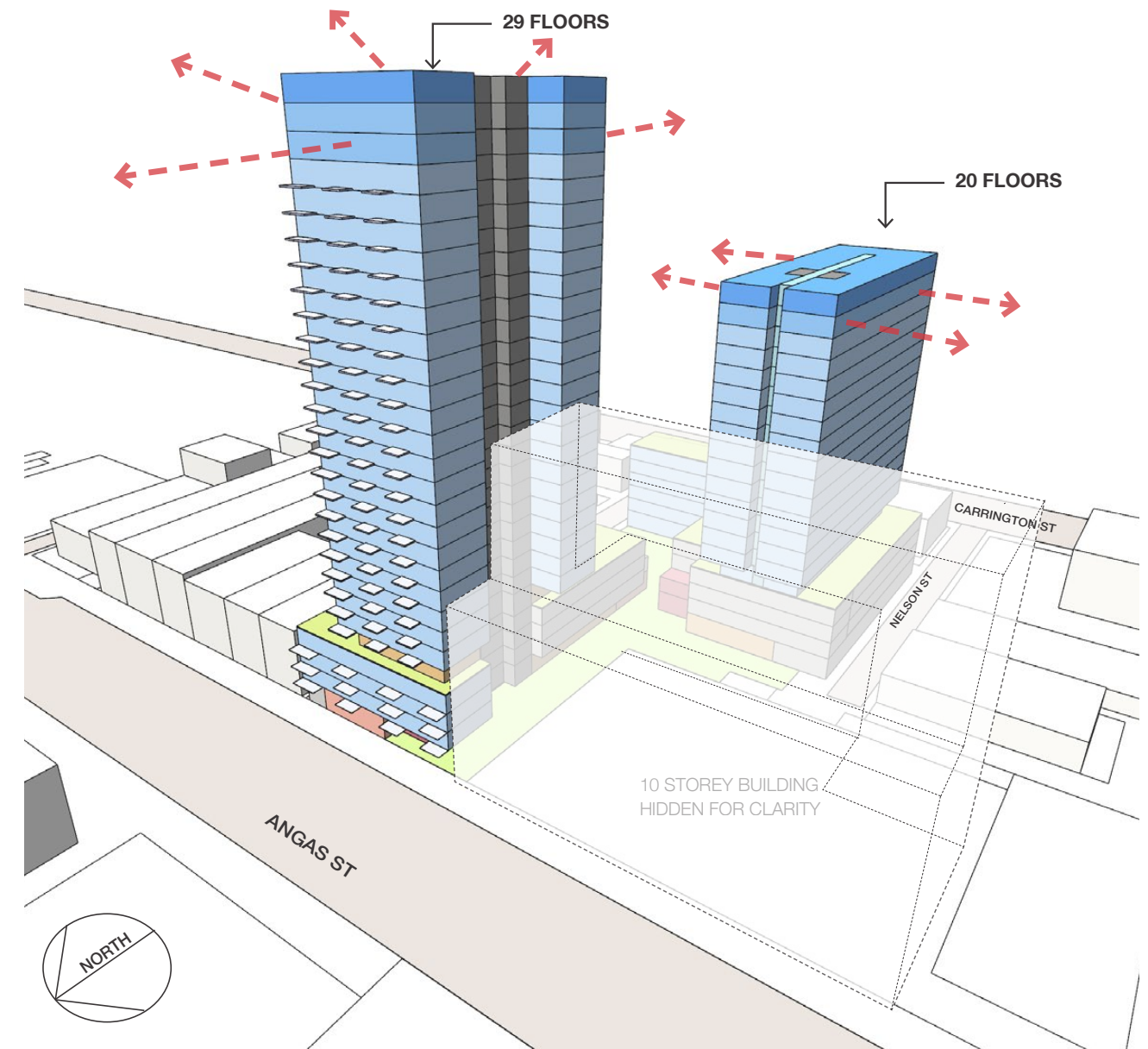
02 Development Application

Design Principles_Masterplan



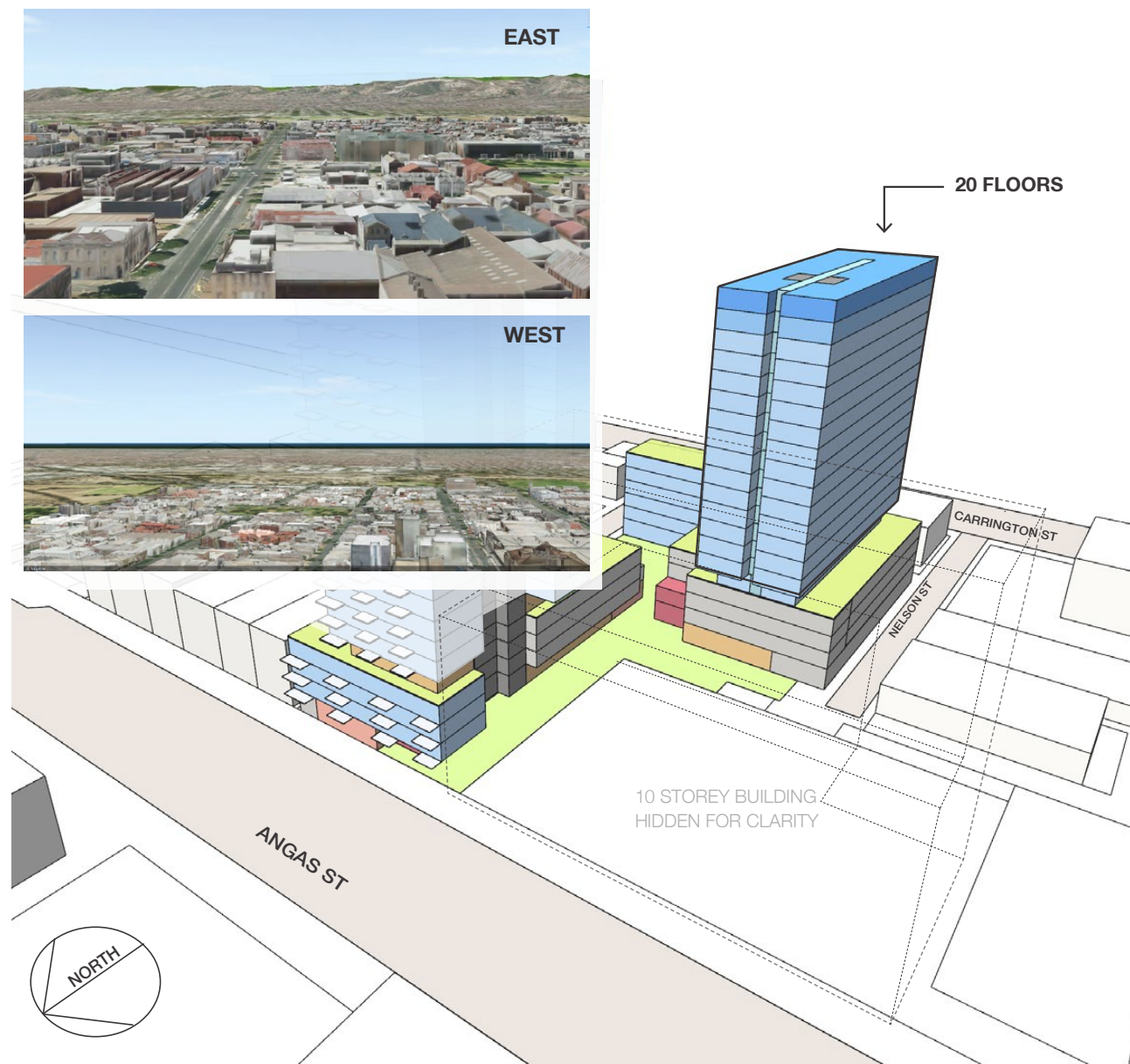
Setback Amenity + Roof Garden

Further pronouncing the lower level form through a setback terraced level on Angas Street and tower setback from podium on Nelson Street



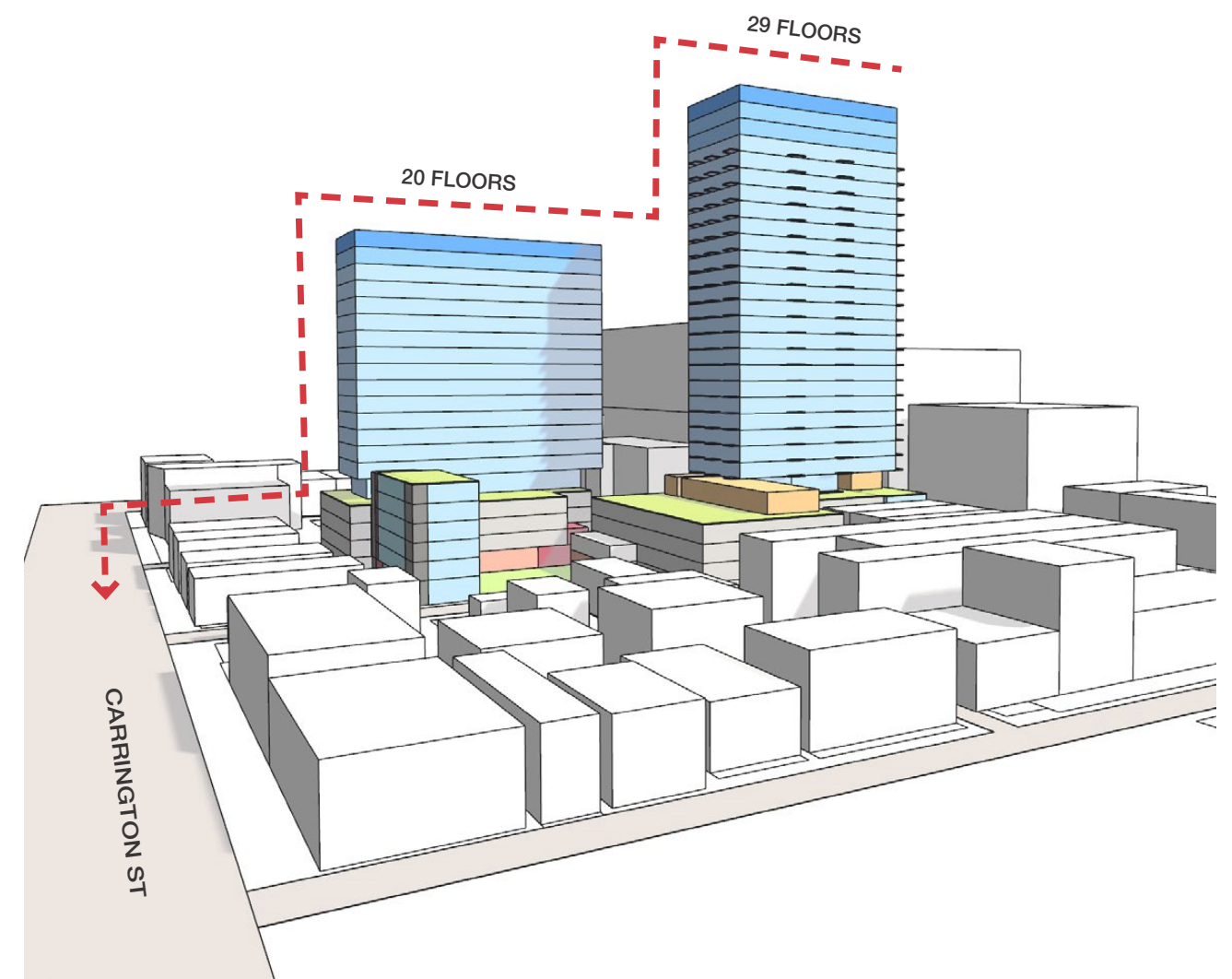
Stage 1 KODO & 2 Tower Orientation and Separation

02 Development Application Design Principles_Masterplan



Stage 2 Views

15 Floors of Un-inhibited views to the East and West



Grading Down Height

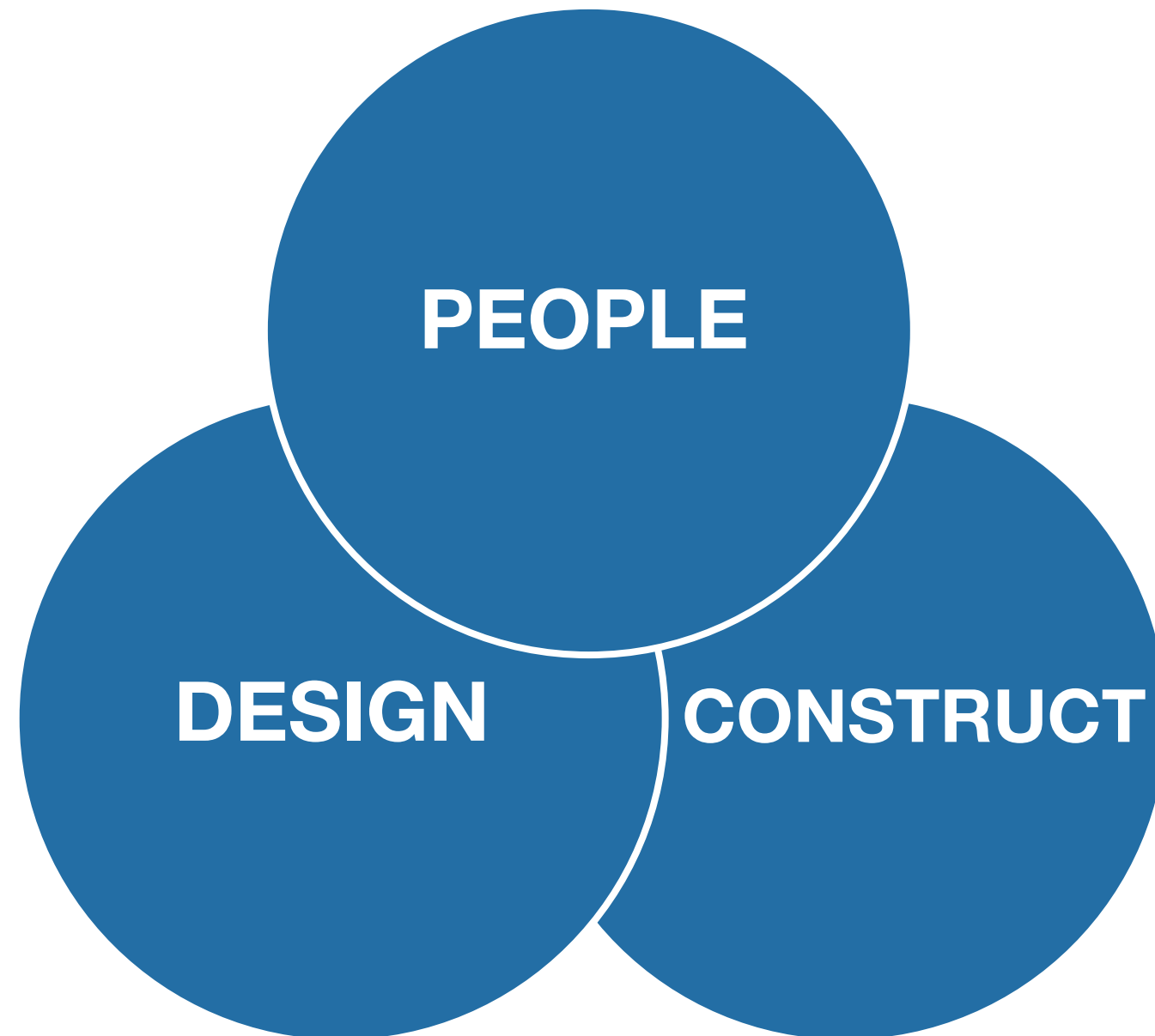
Stepping down of the building height towards Carrington Street

02 Design Principles

Penny Place

*“Leveraging our skills and
experience to develop a SMART
product.”*

02 Development Application 'Smarter Principles'



02 Development Application 'Smarter Principles'_People

40% are looking for a long term investment

85% preferred a bigger living space

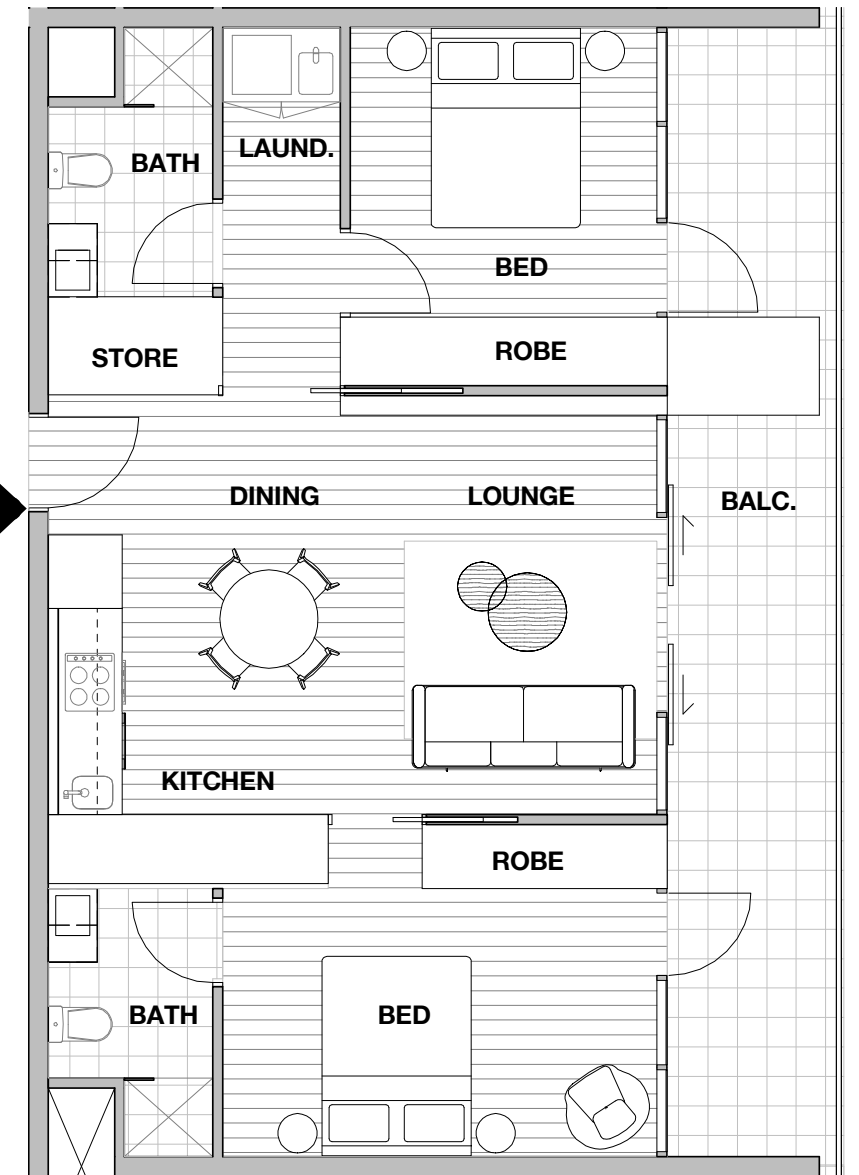
Our experience from Kodo sales is that the 2 bed 2 bath product is the most popular

35% liked the ability to sub let the second bedroom

60% said ongoing fees influenced their decision

72% like to customize joinery

69% liked idea of carefully curated exposed finishes and structure



Typical 2 Bed 2 Bath Apartment in Penny Place

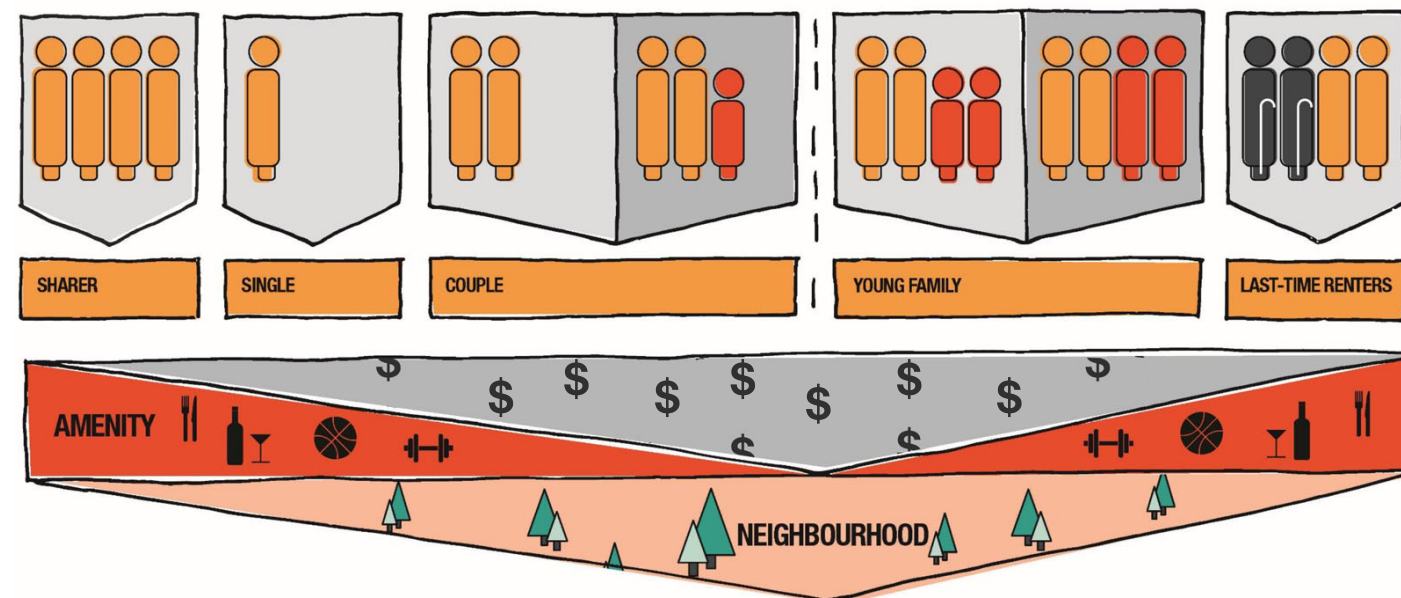
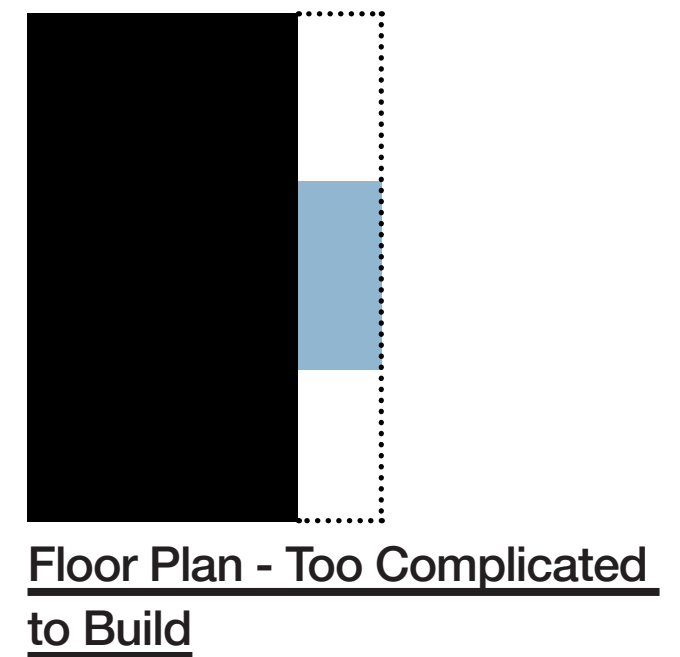
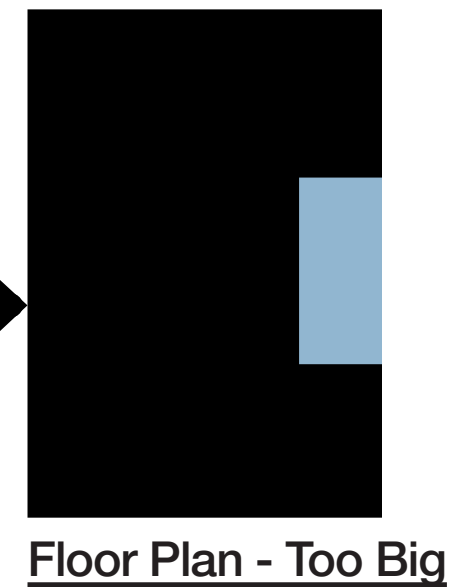
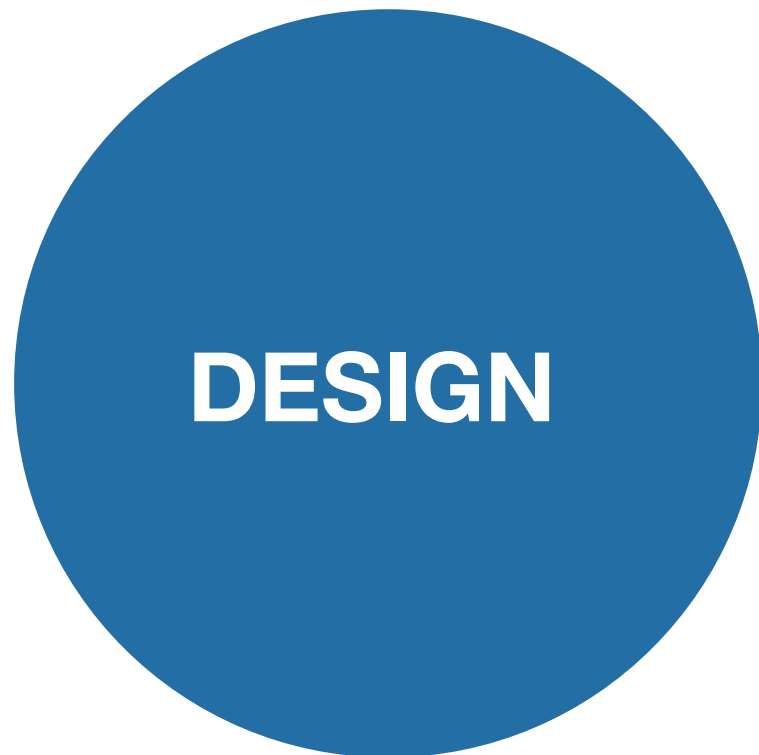
PEOPLE

Additional Storage

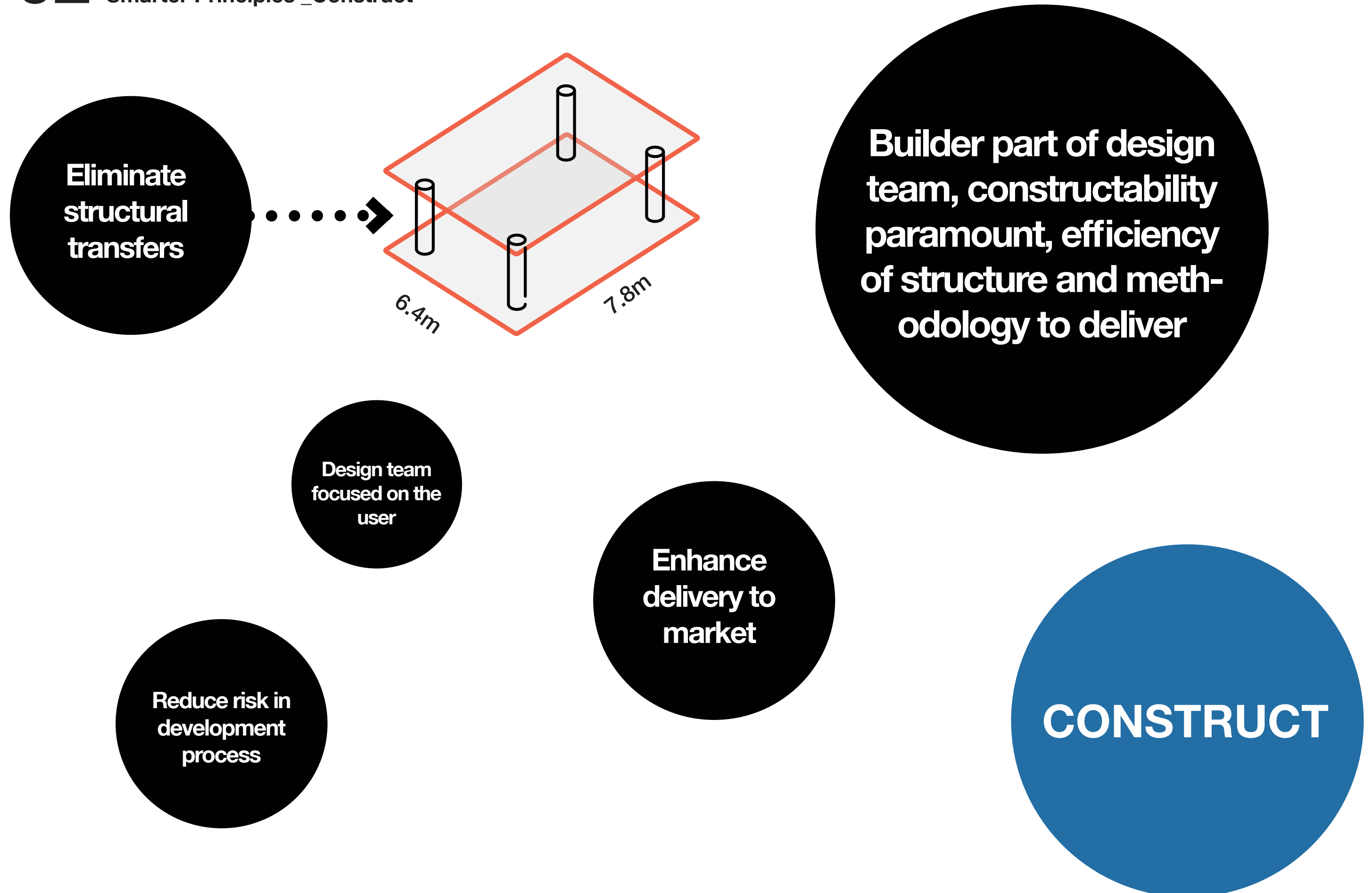
Home Office

Bike Fanatic

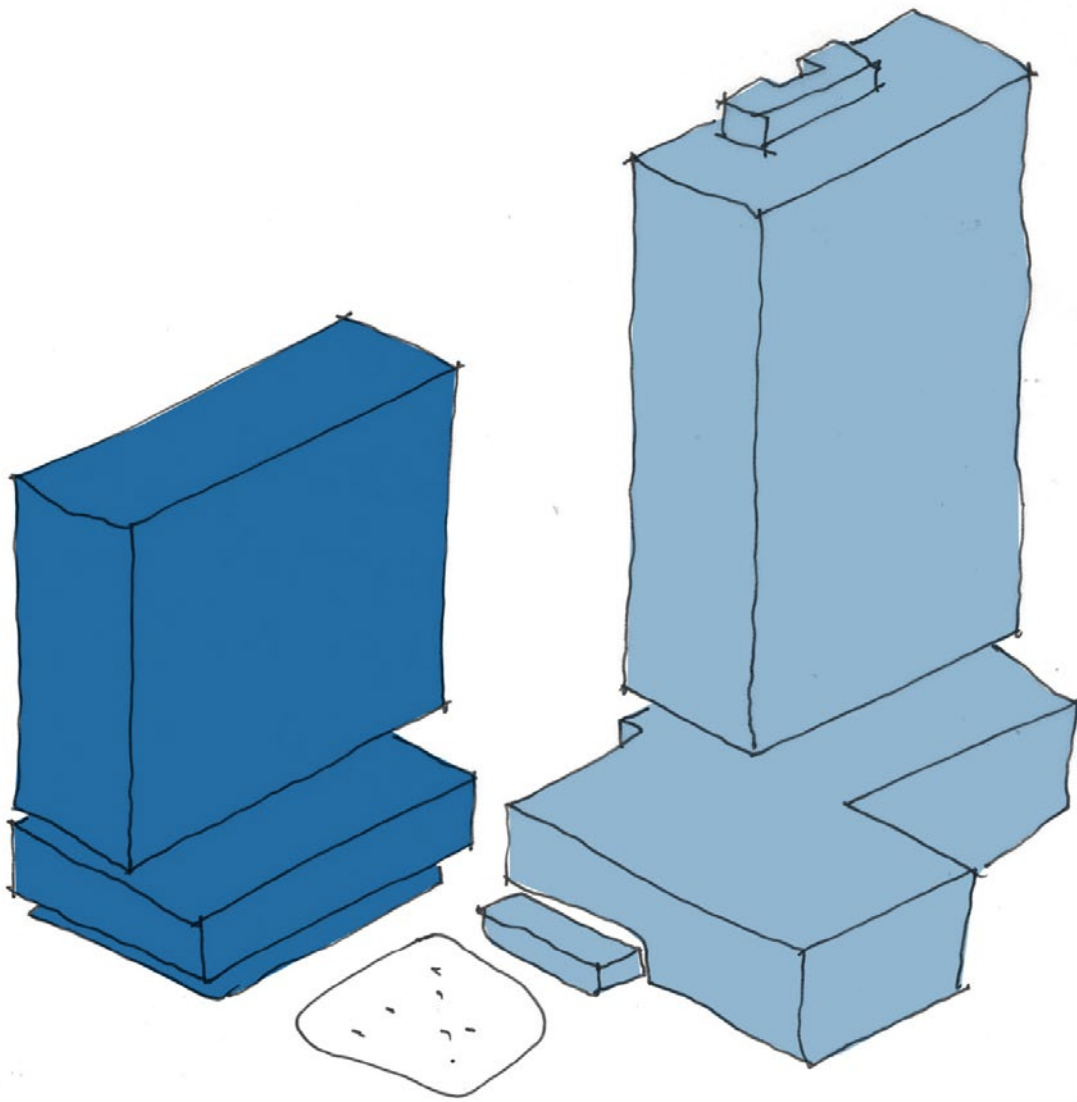
02 Development Application 'Smarter Principles'_Design



02 Development Application 'Smarter Principles'_Construct

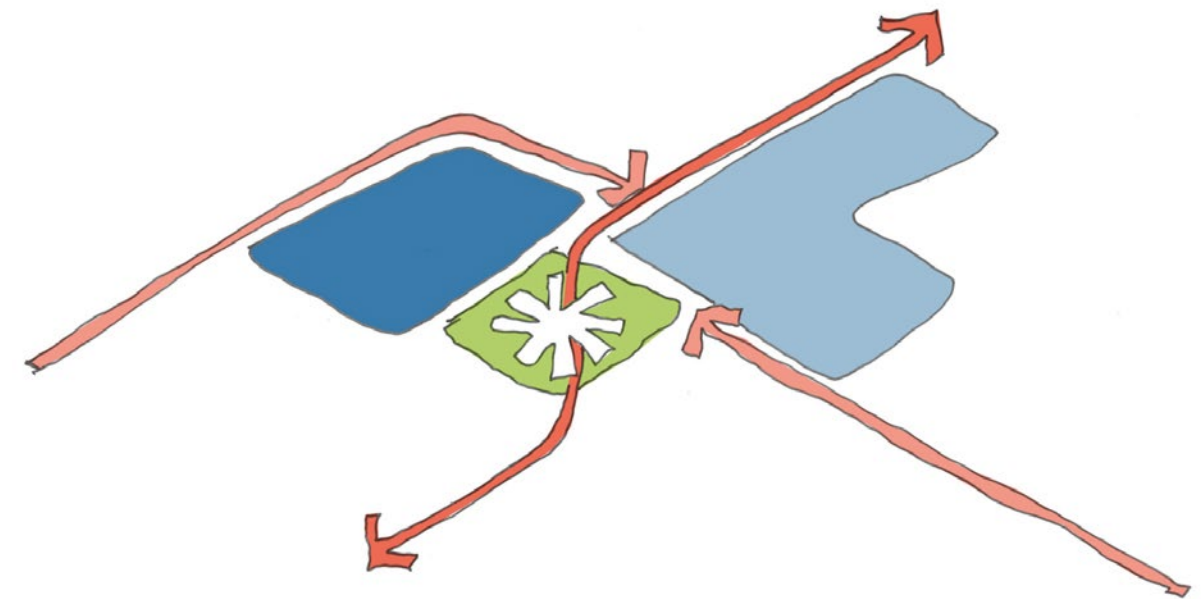


02 Development Application Illustrated Design Principles



Master Plan

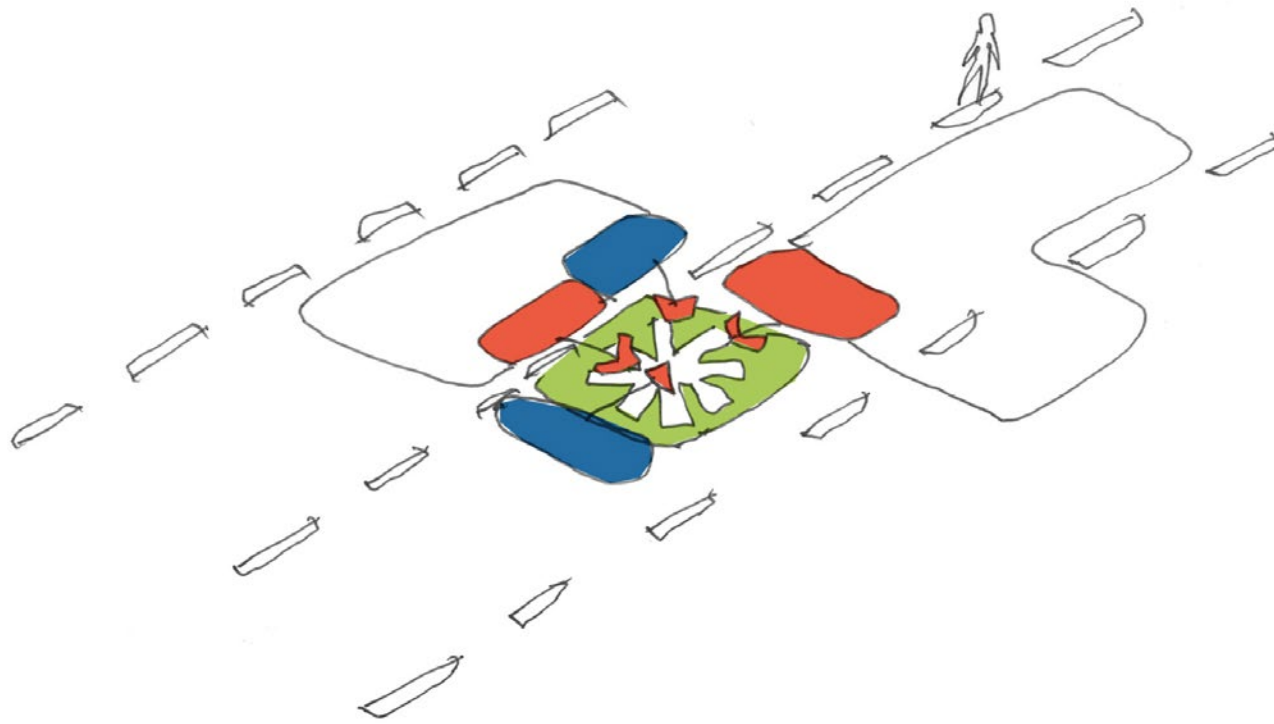
2 Buildings clustered around a public square



Movement

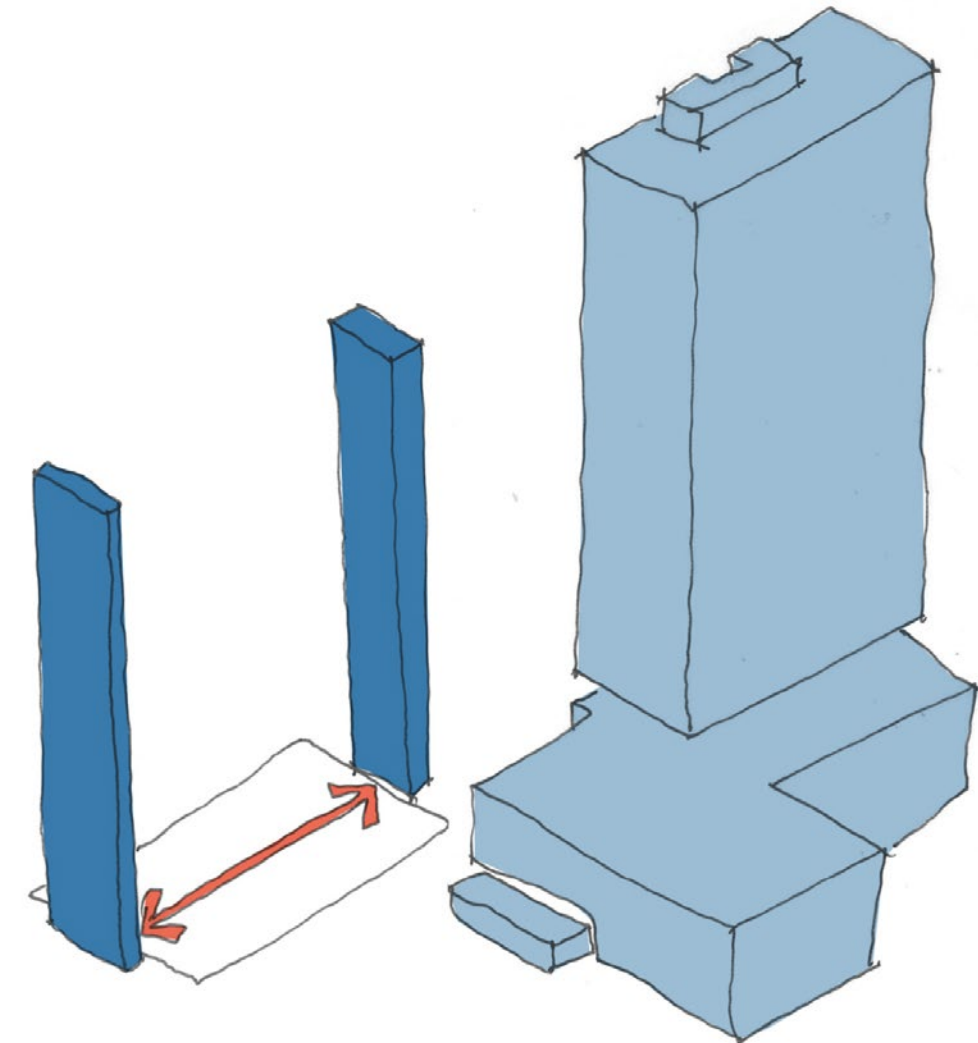
A defined link with 2 secondary links supporting the square

02 Development Application Illustrated Design Principles



Active

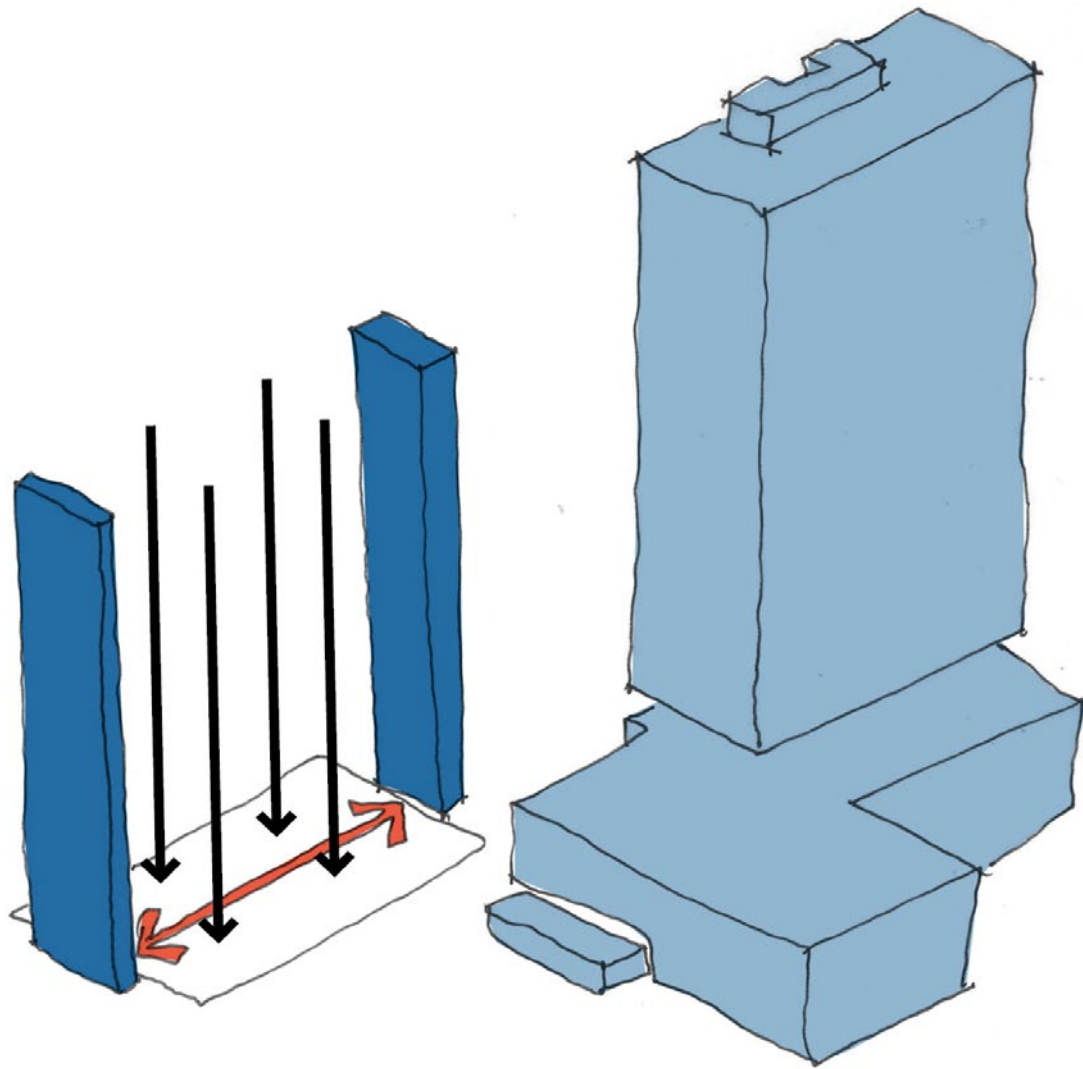
A active pedestrian focused spine with vehicles to the edge



Split

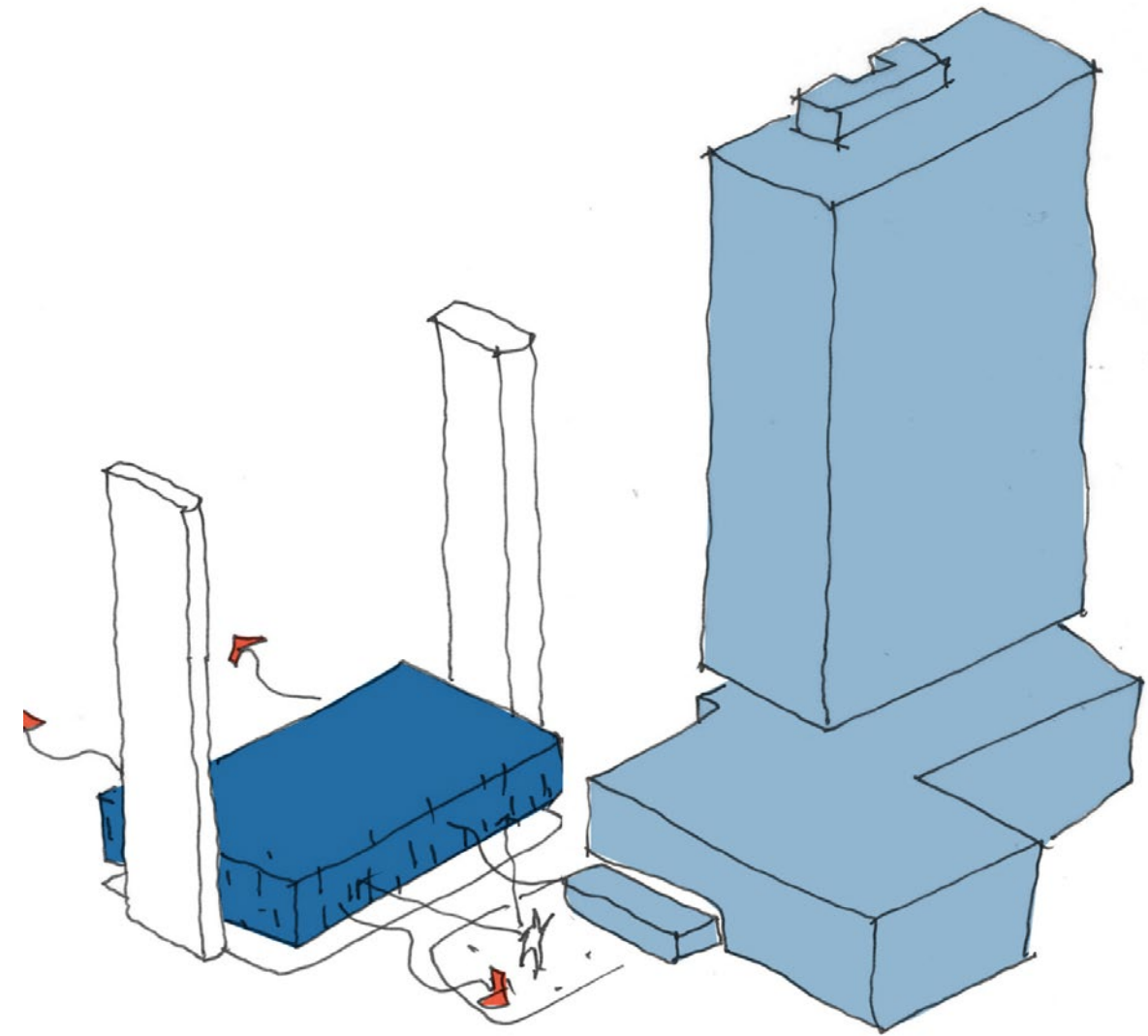
Locate cores out of the building form to increase efficiency

02 Development Application Illustrated Design Principles



Align

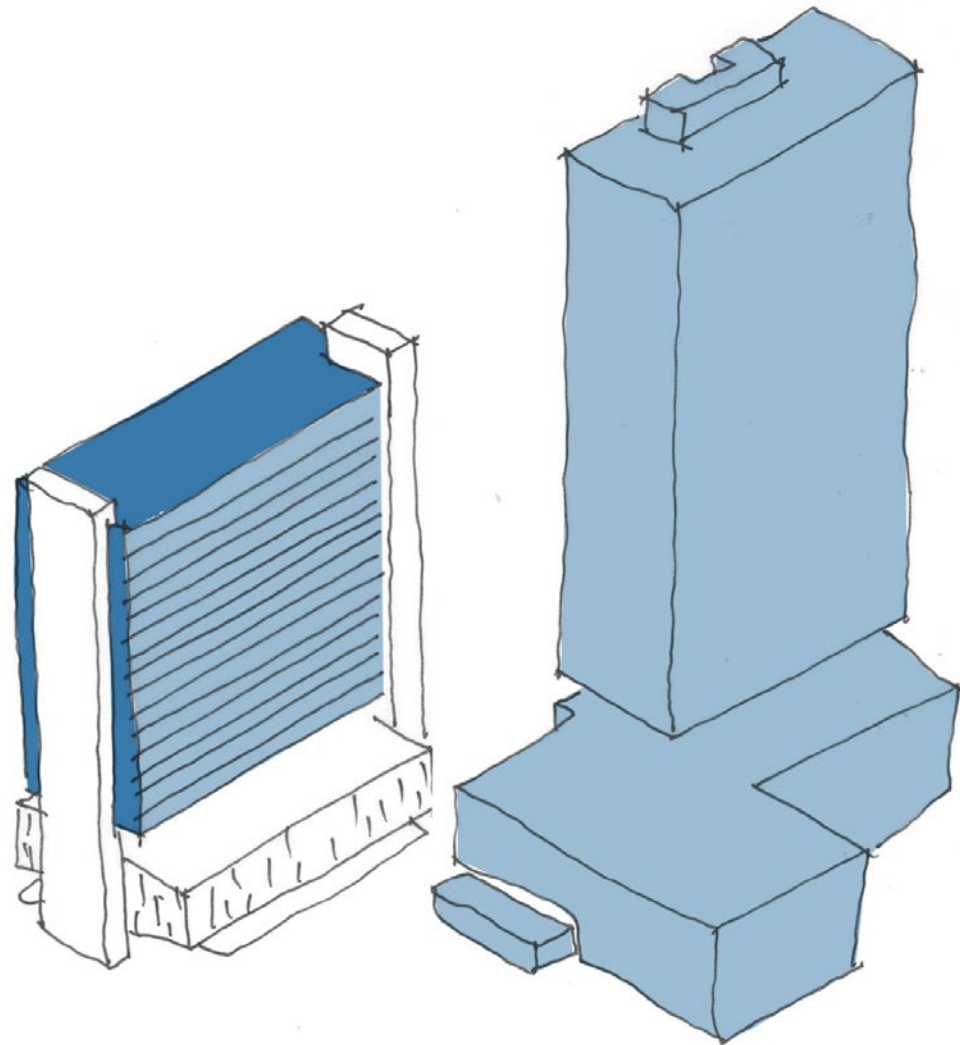
Align structure from roof to ground



Podium

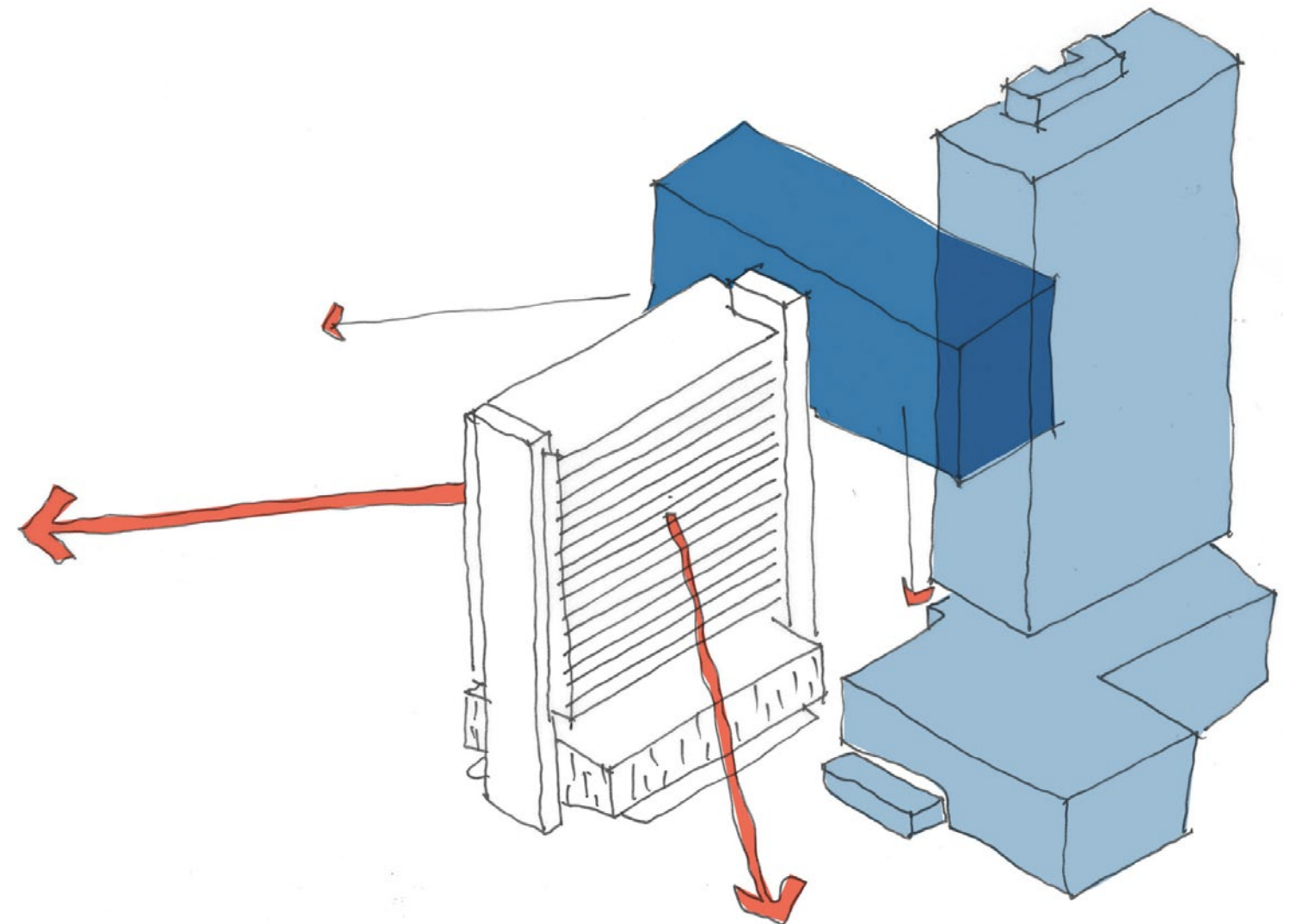
Enable podium carparking with full cross ventilation

02 Development Application Illustrated Design Principles



Tower

A residential tower between the cores

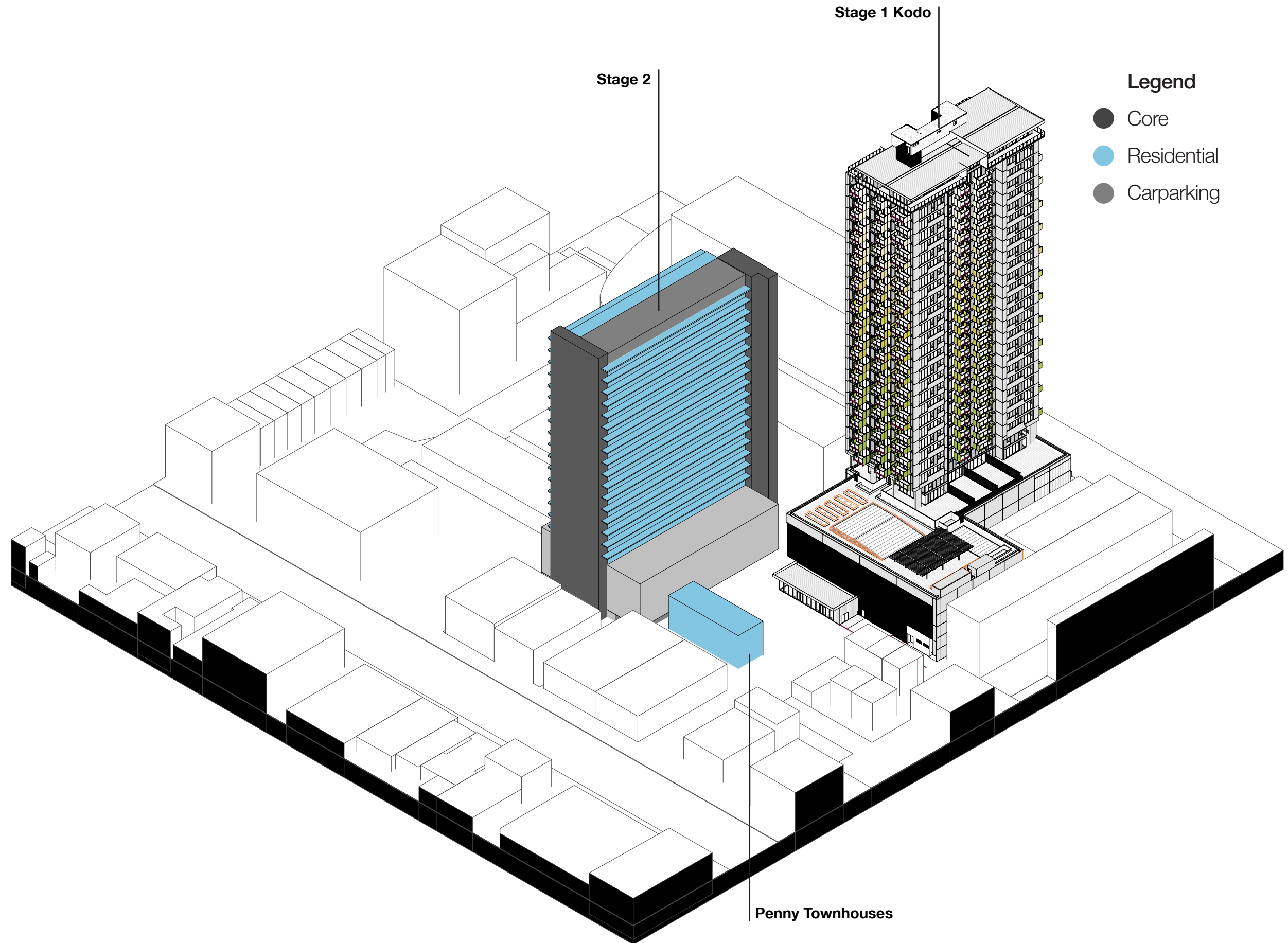


View

Controlled views towards the south away from neighbours

02 Development Application

Building Massing



03 Design Response

03 Development Application Design Response

Public Realm

As part of the master plan, the public realm is conceived as a sequence of connected spaces, providing a layered and unique experience. Pedestrian access forms the central core of the site with penny square providing the destination. The main entry of the building, retail and resident amenity is orientated to support the square. Unlike the first stage of the master plan, penny place limits the amount of amenity provided within the building preferring to further activate the ground plane by creating shared facilities that support Penny Square. Vehicles are pushed to the perimeter of the precinct with access for the apartment residents from Nelson Street. Discreet access for the Townhouses is provided from Penny Place.



PENNY SQUARE LOOKING TOWARDS STAGE 1 KODO



ANGAS STREET LOOKING TOWARDS STAGE 1 KODO ENTRY

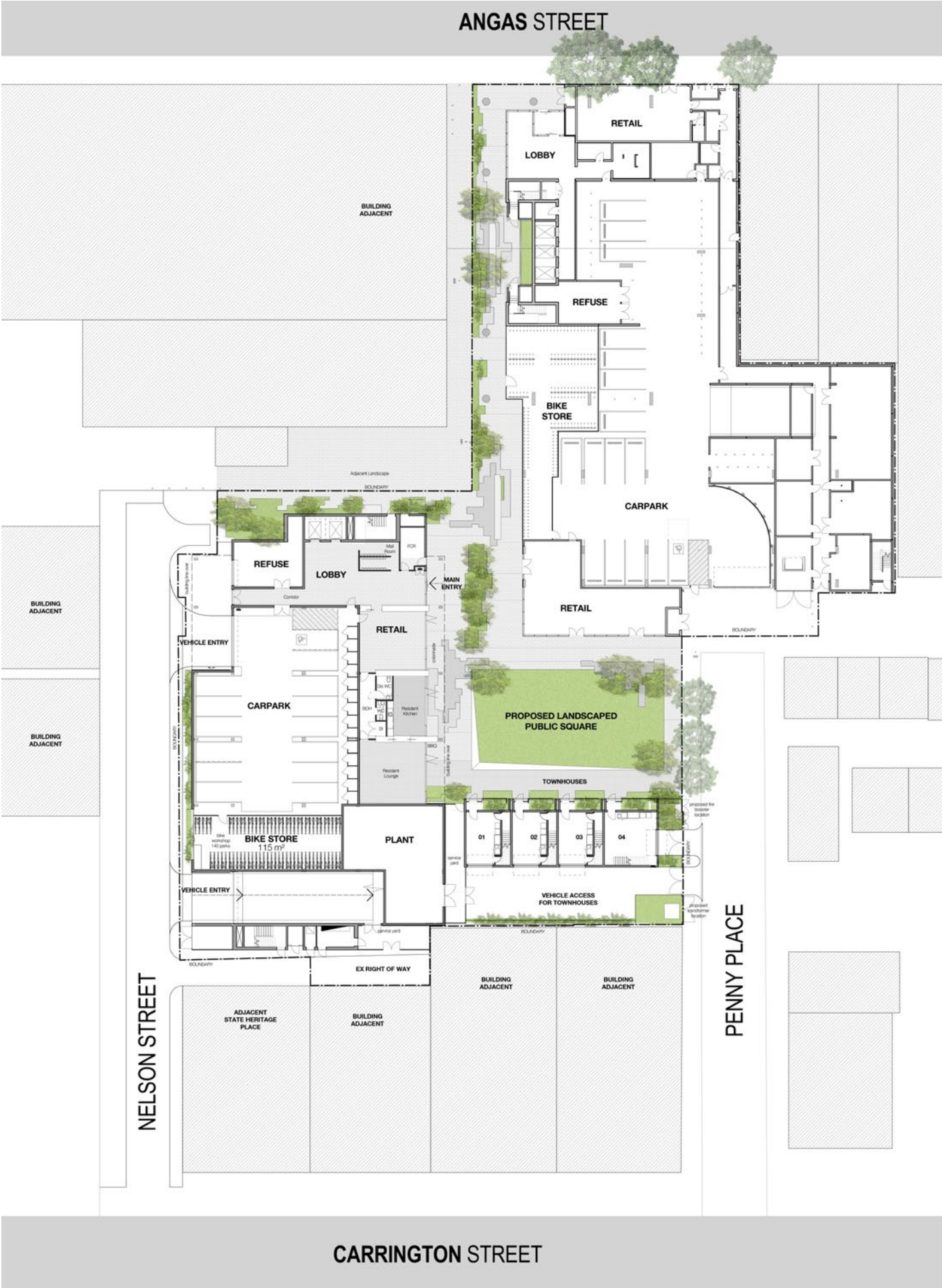
03 Development Application
Design Response



LOOKING TOWARDS PENNY TOWNHOUSES



PENNY SQUARE



PRECINCT PLAN

03 Development Application Landscape Design Concept



PATTERN WITH THE MULTIPLE
PAVING SIZES

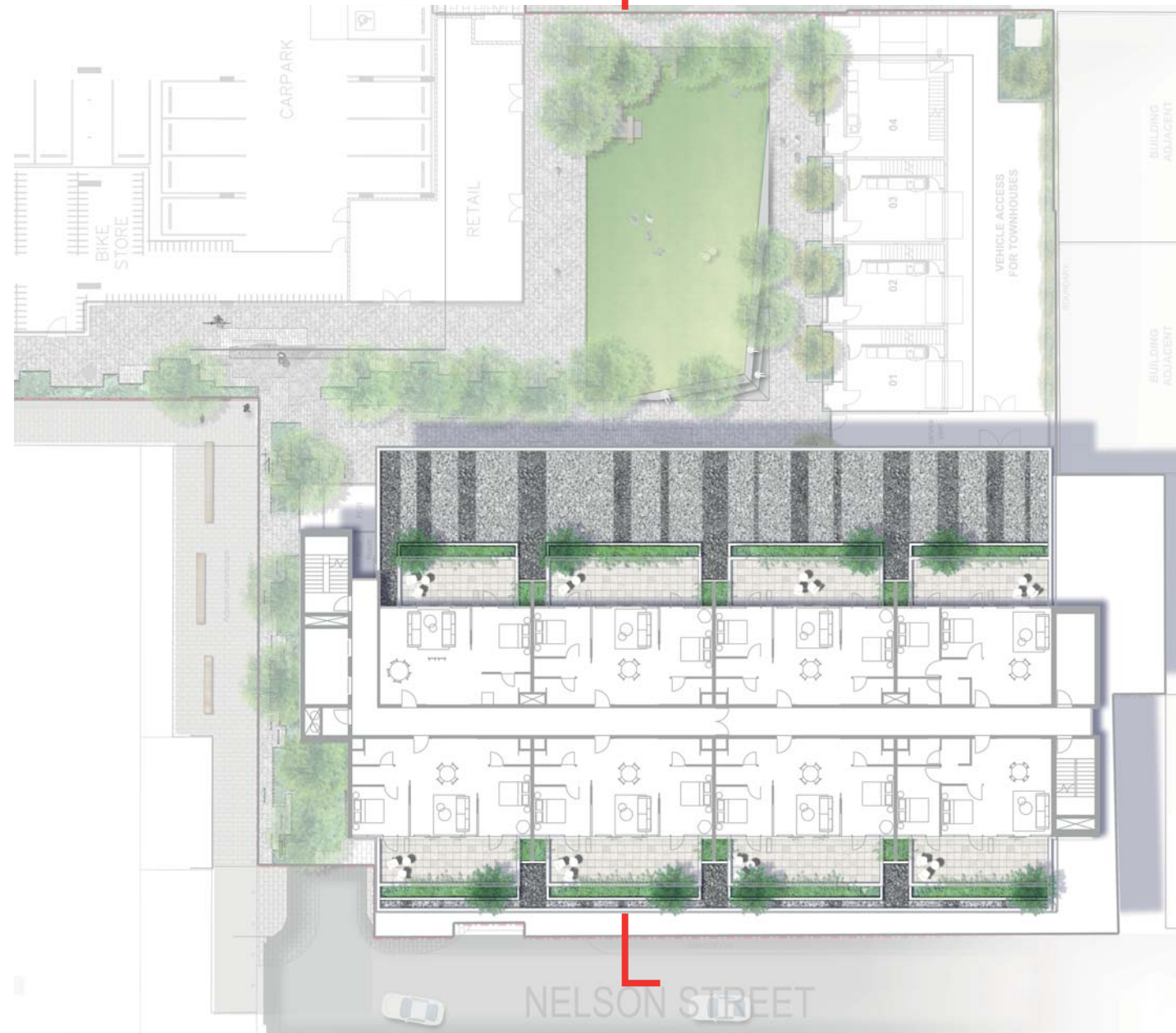


BLACK GRANITE PAVING

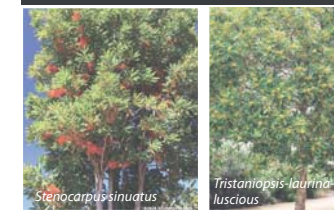


FEATURE LIGHTING

03 Development Application Landscape Design Concept



Laneway Trees



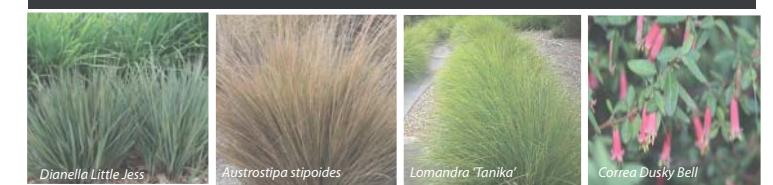
Shrubs



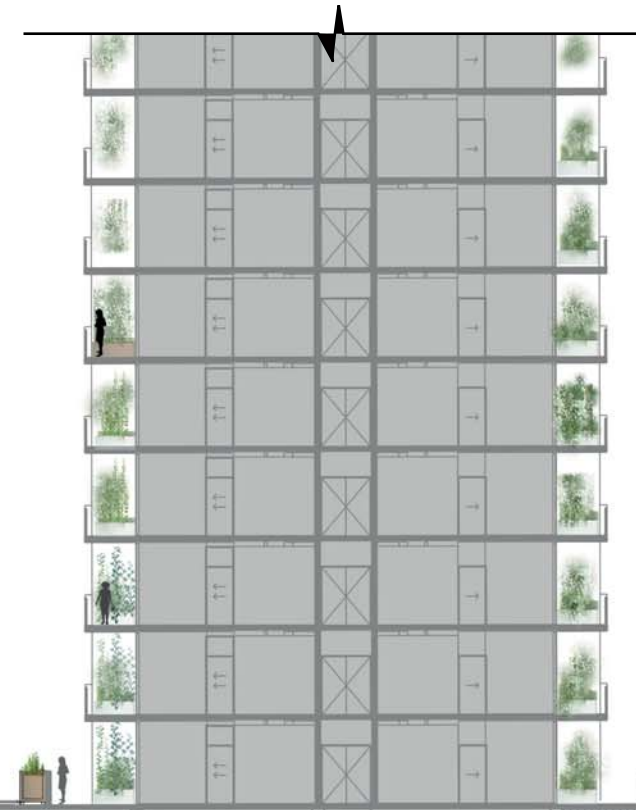
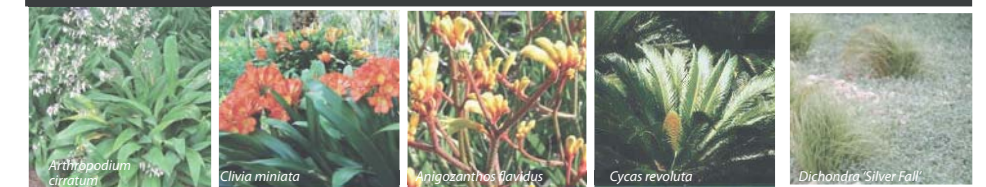
Ferns



Tussocks & Ground cover



Tussocks & Ground cover



03 Development Application Design Response

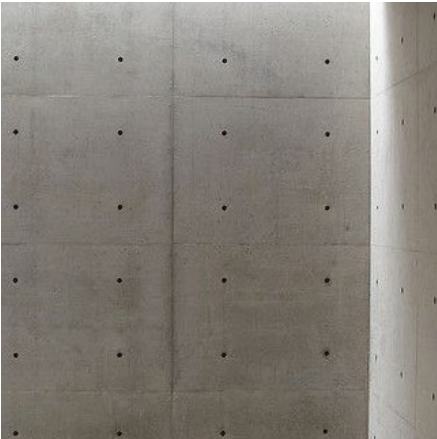
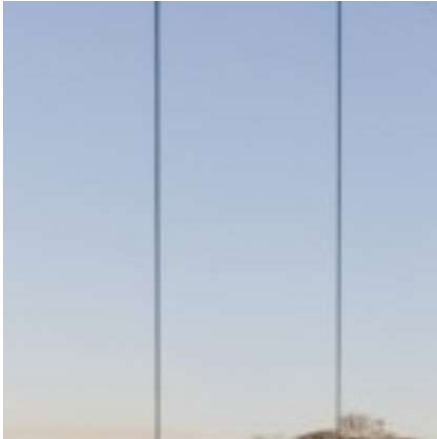

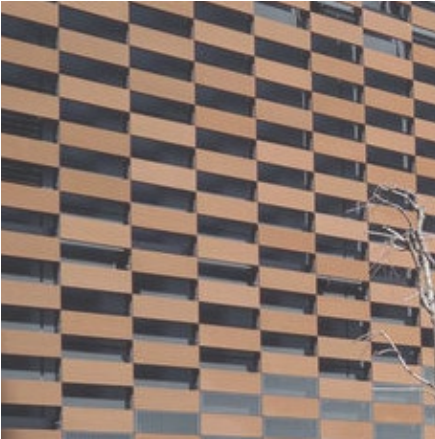

Architectural Expression

The architectural expression is a direct correlation of the SMARTER principles which form the overall concept of the project. Façade elements are both decorative, pragmatic and an honest representation of the buildings internal layouts. Materiality is to be robust and easy to maintain while forming a harmonious connection with the adjacent context.



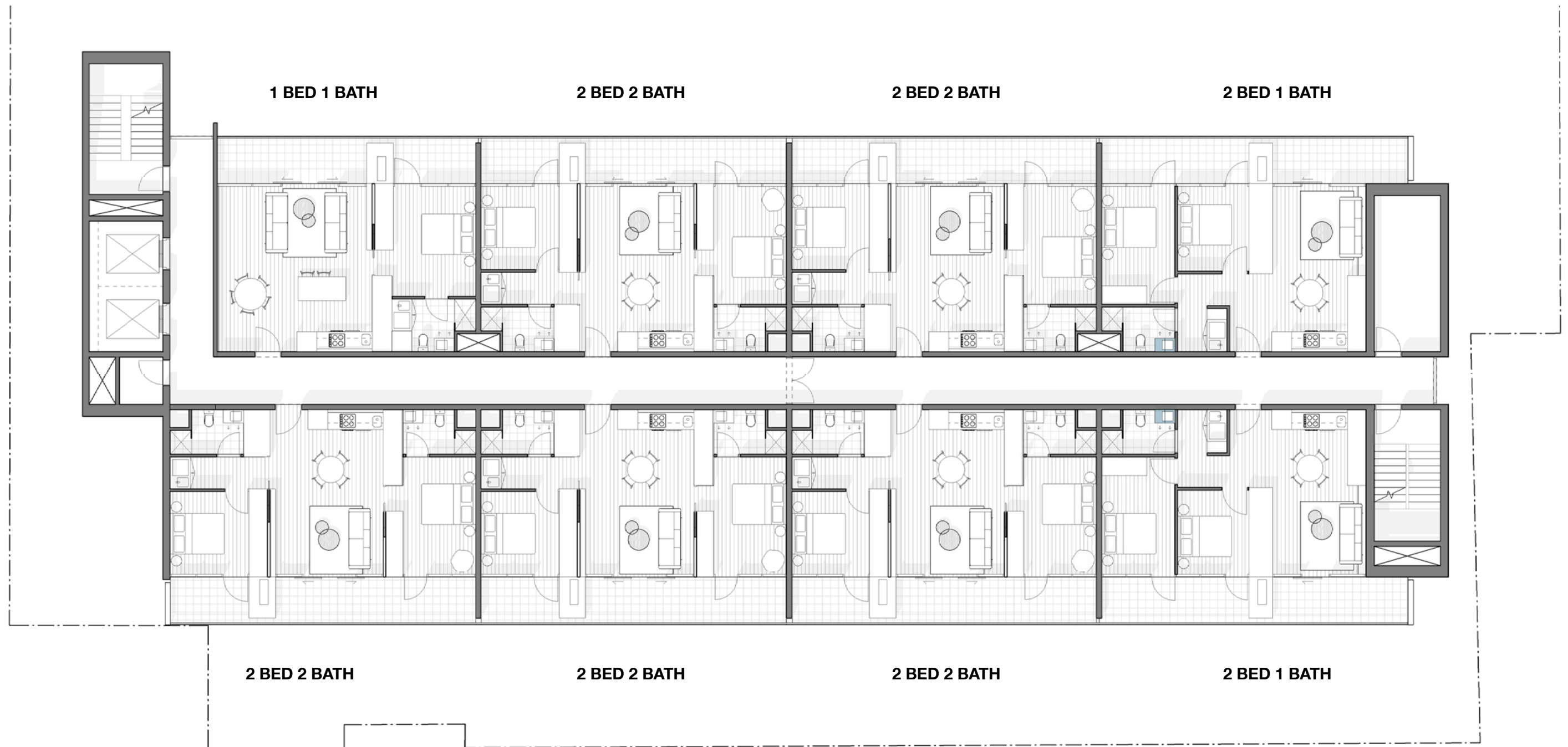
CARRINGTON STREET VIEW

General Materials

CE:01	W:01	CL:01	CL:02	MA:01	MA:02
					
<u>Insitu Concrete</u> Location: Core Walls	<u>Glass Facade</u> Location: Apartment facades	<u>White Cladding</u> Location: Balcony Soffits	<u>Prefinished Fibre Cement</u> Location: Apartment facade and AC enclosure frontal (Colour Varies)	<u>Brick Screen Facade</u> Location: Tower Podium and town houses	<u>Concrete Block Facade</u> Location: Ground level back of house areas

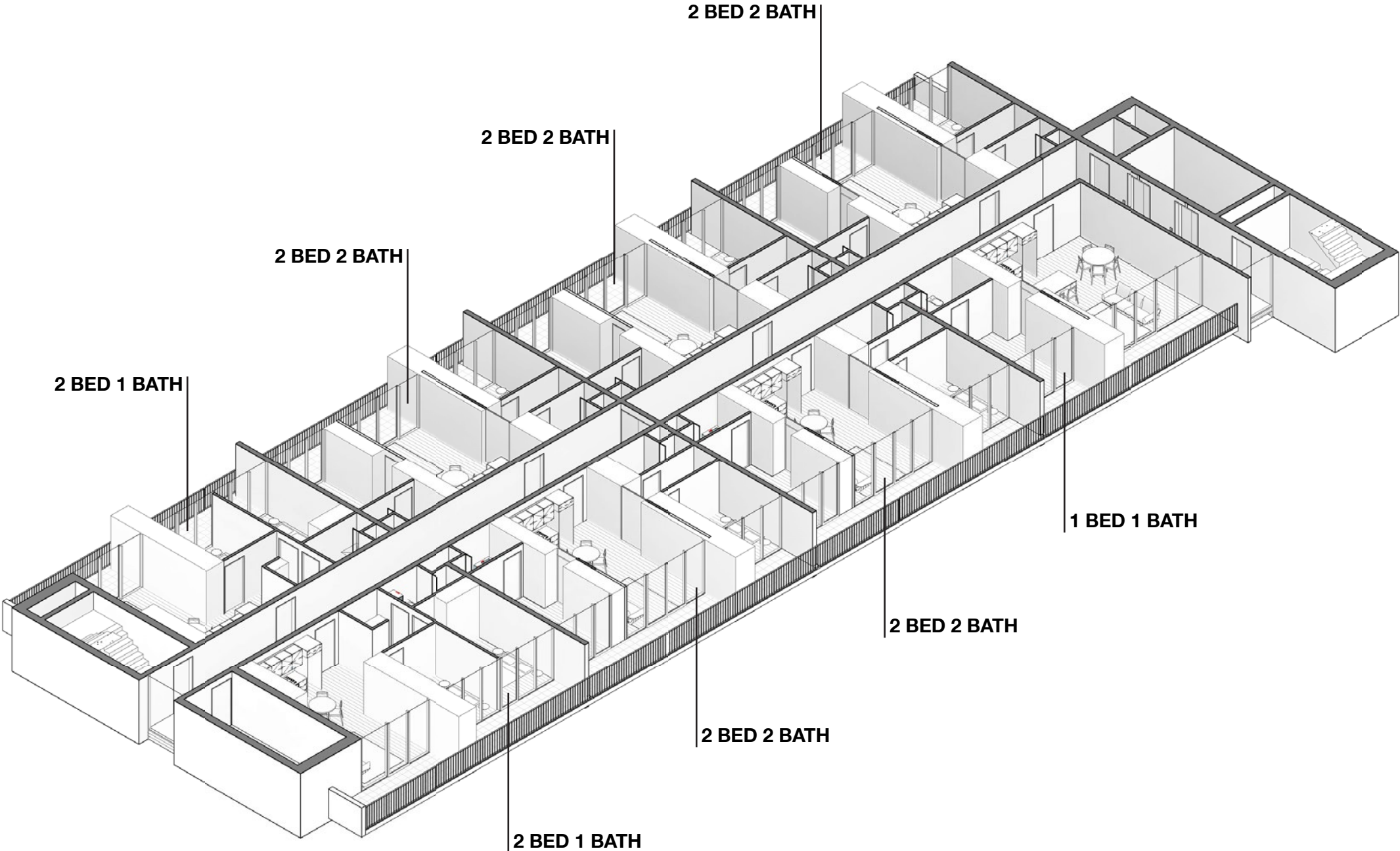


Typical Apartment Level Floor

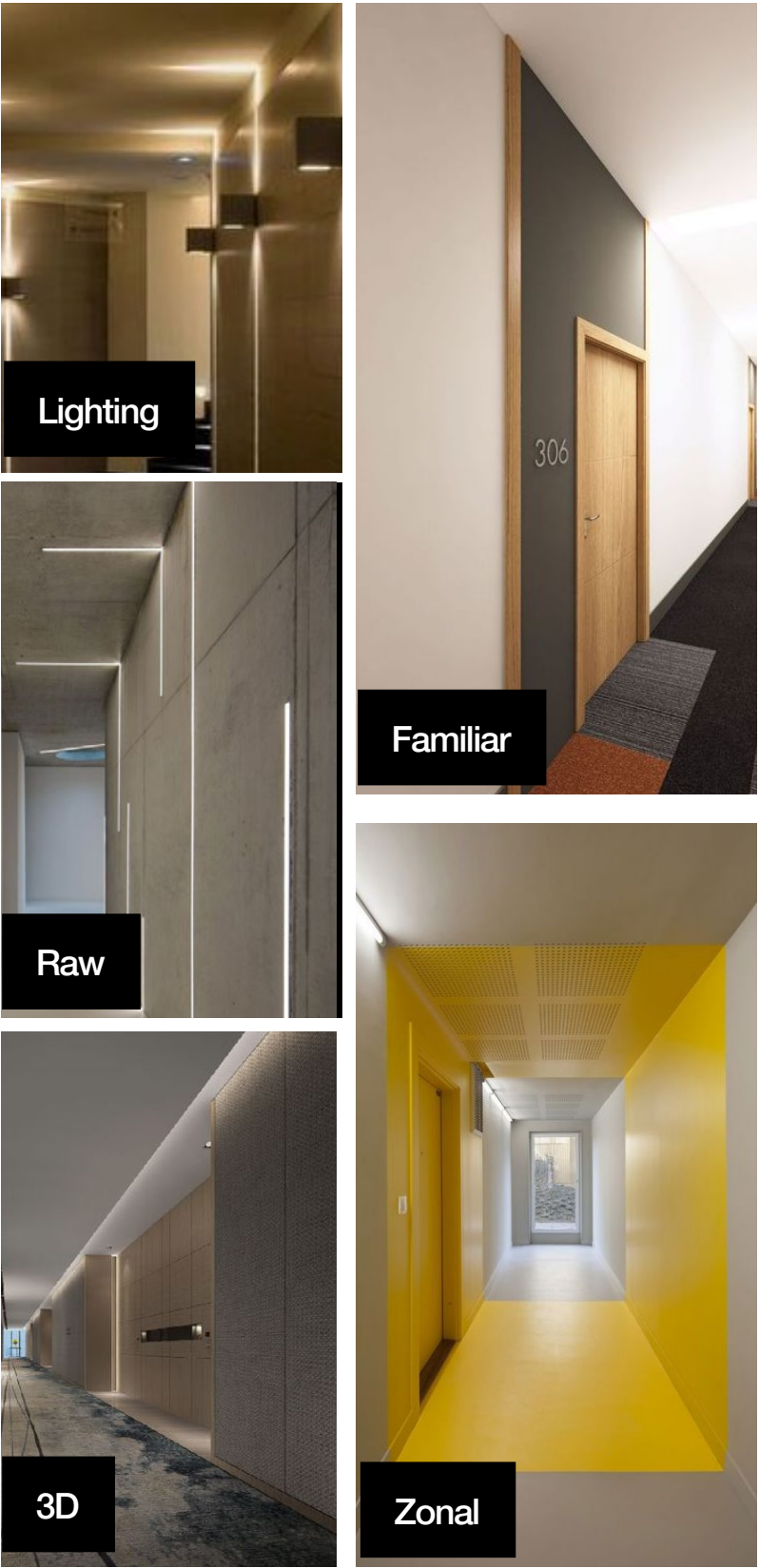


TYPICAL PLAN

03 Development Application
Residential Design

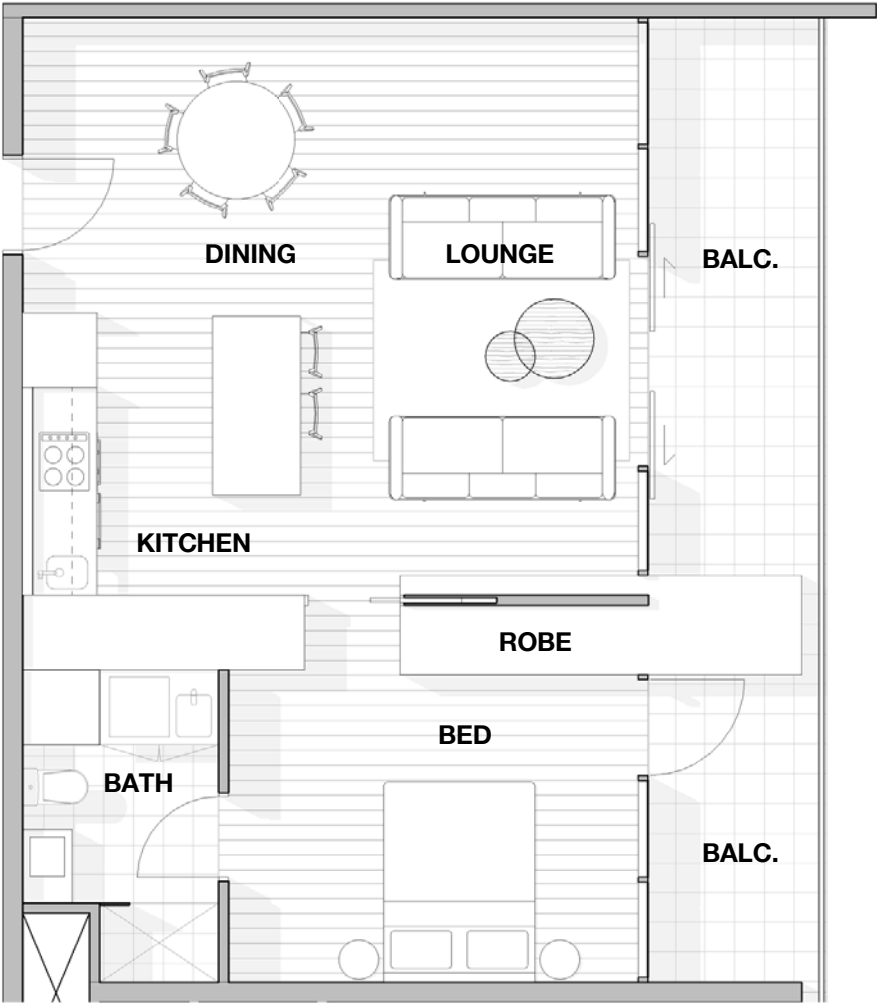


TYPICAL AXONOMETRIC

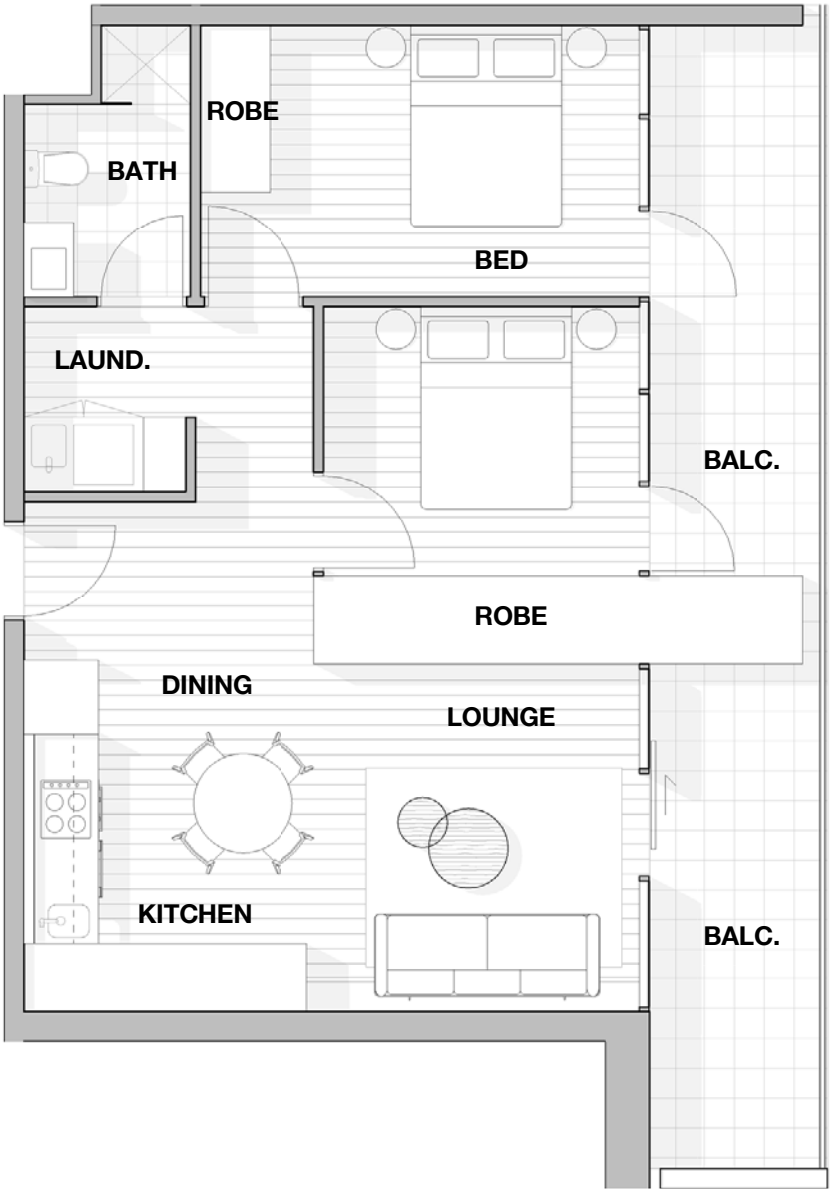


CIRCULATION TREATMENT

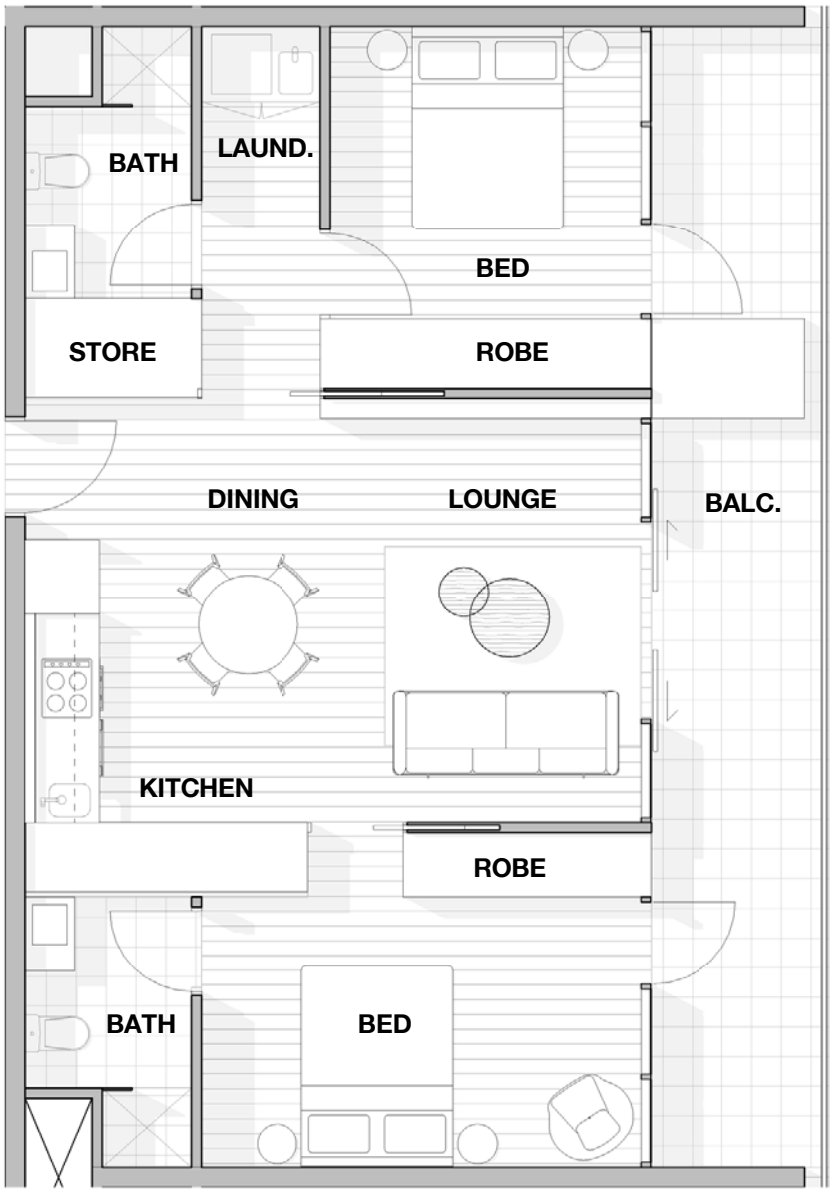
Apartment Mix



1 BED PLAN NTS

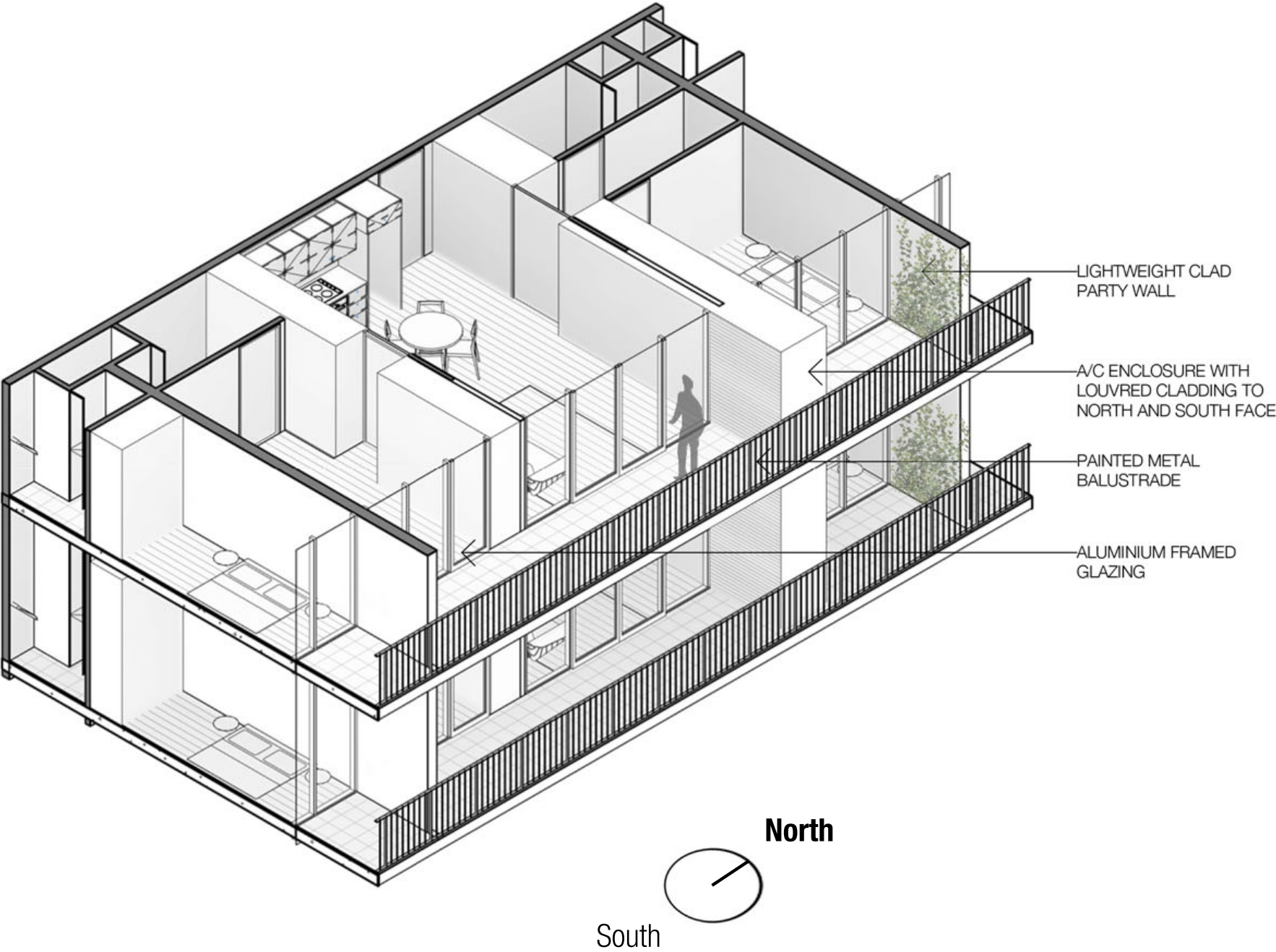


2 BED 1 BATH PLAN NTS



2 BED 2 BATH PLAN NTS

03 Development Application
Residential Design



2 BED 2 BATH AXO

03 Development Application

Shadow Diagrams and Thermal Performance



WINTER SOLSTICE 9AM

WINTER SOLSTICE 12PM

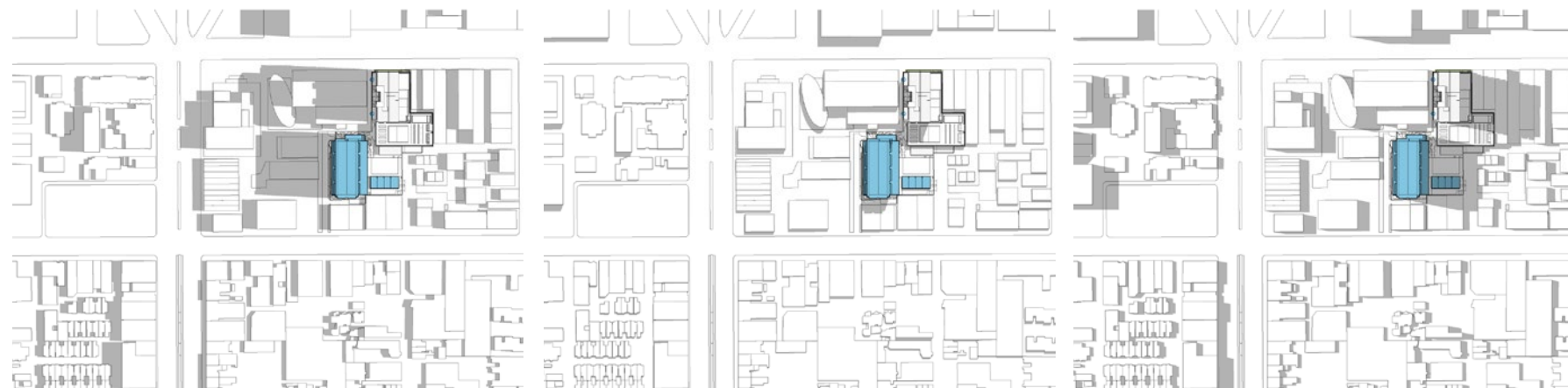
WINTER SOLSTICE 3PM



EQUINOX 9AM

EQUINOX 12PM

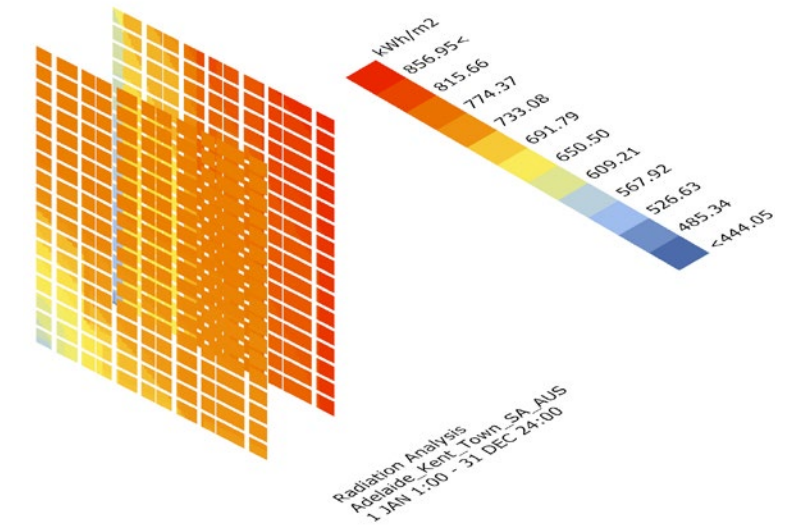
EQUINOX 3PM



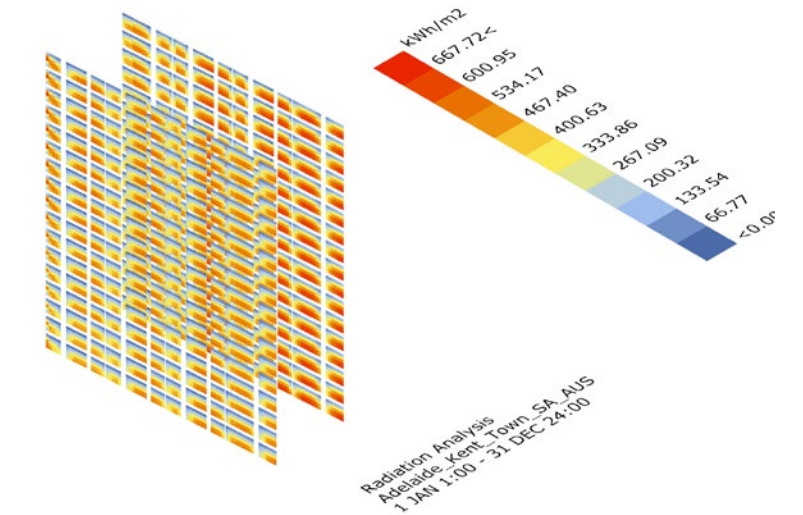
SUMMER SOLSTICE 9AM

SUMMER SOLSTICE 12PM

SUMMER SOLSTICE 3PM



NO SHADING



WITH SHADING

Sun shading average annual radiation gain 308 Kwh/m2

No Sun shading average annual radiation gain 739 Kwh/m2

SHADING PROVIDES 41%

REDUCTION IN RADIATION GAIN



Penny Place Stage 2 Nelson Street, Adelaide Transport Impact Assessment

Client //	Premier Capital Developments
Office //	SA
Reference //	S132540
Date //	27/10/2017

Penny Place Stage 2

Nelson Street, Adelaide

Transport Impact Assessment


Issue: B 27/10/2017

Client: Premier Capital Developments

Reference: S132540

GTA Consultants Office: SA

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	27/10/2017	Final	Timothy Jones	Paul Froggatt	Paul Froggatt	PFR
B	27/10/2017	Final – amended	Timothy Jones	Paul Froggatt	Paul Froggatt	

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Melbourne | Sydney | Brisbane
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1. Introduction

1.1 Background

A development application is currently being sought for Stage 2 proposed residential and retail tower on land located between Angas Street and Carrington Street in the Adelaide CBD. The proposed development incorporates the construction of 136 apartment dwellings, 61 sq. m of ground floor retail and 4 townhouses adjacent to the apartment building.

GTA Consultants was commissioned by Premier Capital Developments on behalf of Flagship (Penny Place) Pty Ltd in July 2017 to undertake a transport impact assessment of the proposed development.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- i existing traffic and parking conditions surrounding the site
- ii parking demand likely to be generated by the proposed development
- iii suitability of the proposed parking in terms of supply (quantum) and layout
- iv traffic generation characteristics of the proposed development
- v proposed access arrangements for the site
- vi public transport, walking and cycling services and facilities within proximity of the development
- vii transport impact of the development proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

- o Adelaide City Council Development Plan (consolidated 20 June 2017)
- o Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- o Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002
- o Australian Standard / New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009
- o plans for the proposed development prepared by Woods Bagot dated 13 October 2017
- o traffic and car parking surveys undertaken by GTA Consultants as referenced in the context of this report
- o various technical data as referenced in this report
- o an inspection of the site and its surrounds
- o other documents as nominated.

2. Existing Conditions

2.1 Subject Site

The subject site is to be Stage 2 of the proposed residential and retail tower on land located between Angas Street and Carrington Street in the Adelaide CBD. Stage 2 is located between Penny Place and Nelson Street. Stage 2 has frontages of approximately 33m to Penny Place and 55m to Nelson Street.

The site is located within the Capital City zone and is currently occupied by a public paid car park and site office for Stage 1 of the development.

The surrounding properties include a mix of residential, educational, commercial and government uses including the Commonwealth Law Courts which bound the site to the west.

The location of the subject site and the surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and its Environs



(PhotoMap courtesy of NearMap Pty Ltd)

2.2 Road Network

2.2.1 Adjoining Roads

Nelson Street

Nelson Street is a no through access lane, aligned in a north/south direction. It is configured with a 5.5m single-lane carriageway set in a 7.7m road reserve (Approx.). Kerbside parking spaces are marked on the eastern side of the carriageway and are subject to time and permit restrictions. A 2-hour parking zone (2 car capacity) is located at the southern end of the street, with the remaining on-street parking spaces being a permit zone for police vehicles.

Nelson Street carries less than 500 vehicles per day¹ and is subject to the default urban speed limit of 50km/h.

Penny Place

Penny Place is a no through access lane, aligned in a north/south direction. It has one vehicle lane in each direction. Kerbside parking spaces are marked either side of the carriageway and are subject to time restrictions. A permit zone for police vehicles and a 10 minute loading zone are located at the northern end of the street on the western side of the carriageway. Penny Place is subject to the default urban speed limit of 50km/h.

Carrington Street

Carrington Street functions as a two-way road aligned in an east-west direction. It is configured with one vehicle lane in each direction, set within an approximately 20 metre wide road reserve. Kerbside parking spaces are marked on both sides of the carriageway and are subject to time restrictions.

Carrington Street carries approximately 6,500 vehicles per day and is subject to the default urban speed limit of 50km/h.

2.2.2 Surrounding Intersections

The following intersections currently exist in the vicinity of the site:

- Nelson Street/Carrington Street (un-signalised)
- Penny Place/Carrington Street (un-signalised).

2.2.3 Traffic Volumes and Pedestrian Movements

GTA Consultants undertook traffic and pedestrian movement counts at the intersection of Carrington Street/Nelson Street/Nelson Place on 7th September 2017 during the following peak periods:

- 8:00am - 9:00am
- 5:00pm - 6:00pm.

The AM and PM peak hour traffic volumes are shown in Figure 2.2 and Figure 2.3, respectively.

¹ Based on the peak hour traffic counts undertaken by GTA in September 2017 and assuming a peak-to-daily ratio of 10%.

The diagram illustrates the intersection of Carrington St (W), Carrington St (E), Nelson St, and Nelson Pl. Vehicle movements are indicated by blue arrows with counts: Carrington St (W) has 2 left-turn, 404 through, and 15 right-turn movements; Carrington St (E) has 6 left-turn, 265 through, and 14 right-turn movements; Nelson St has 2 left-turn, 0 through, and 10 right-turn movements; Nelson Pl has 0 left-turn, 0 through, and 2 right-turn movements. Pedestrian movements are shown with green arrows: 21 southbound and 16 northbound on Carrington St (E).

LEGEND

- VEHICLE MOVEMENTS (Blue Arrow)
- PEDESTRIAN MOVEMENTS (Green Arrow)

The diagram illustrates the intersection of Carrington St (W) and Carrington St (E) with Nelson St and Nelson Pl. It shows vehicle movements (blue arrows) and pedestrian movements (green arrows) with associated counts.

Legend:

- VEHICLE MOVEMENTS (Blue Arrow)
- PEDESTRIAN (Green Arrow)

Vehicle Movements:

- Carrington St (W) to Nelson St: 337 (Through), 1 (Left Turn), 1 (Right Turn)
- Carrington St (E) to Nelson St: 242 (Through), 3 (Left Turn), 0 (Right Turn)
- Nelson St to Carrington St (W): 3 (Left Turn), 0 (Through), 6 (Right Turn)
- Nelson St to Carrington St (E): 18 (Left Turn), 0 (Through), 12 (Right Turn)

Pedestrian Movements:

- Nelson St to Carrington St (E): 13 (Southbound), 13 (Northbound)

It was observed that the traffic entering Nelson Street during the AM period was predominantly accessing the public car park, with a small number accessing the laneway at the rear of the BAR Chambers. It was noted that the car park was full, and the vehicles that entered Nelson Street were required to exit back onto Carrington Street. The balance of vehicles exiting Nelson Street were observed to be from vehicles exiting the Kent Street entry 'Police Only' parking.

During the PM period, it was observed that the majority of traffic exiting Nelson Street was vehicles exiting the Kent Street entry 'Police Only' parking. It was also noted that vehicles were entering the site to access the parking facilities and the small laneway at the rear of the BAR Chambers.

2.2.4 Accident Statistics

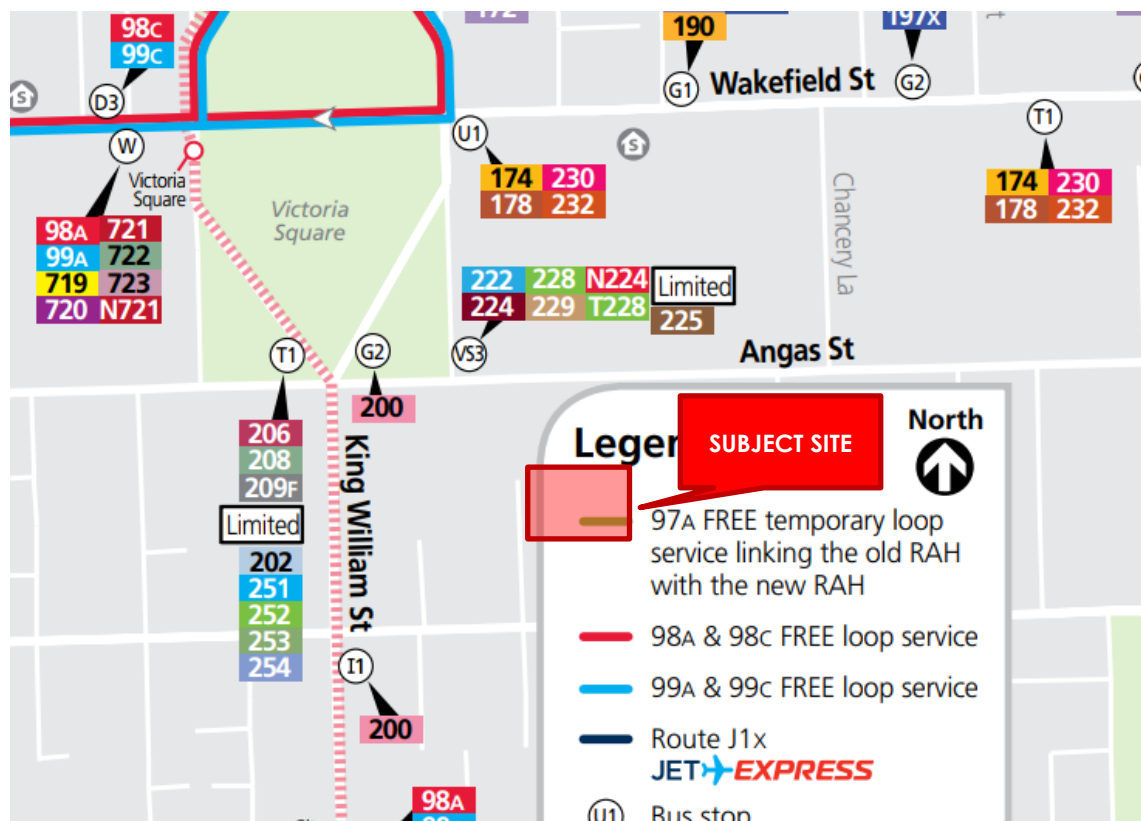
A review of the reported accident casualty history for the roads and intersections adjoining the subject site has been sourced from the DPTI accident database. There were no recorded incidents at the Carrington Street intersection with Nelson Street and one "hit fixed object" crash within Nelson Street at the police parking exit.

2.3 Sustainable Transport Infrastructure

2.3.1 Public Transport

Figure 2.4 shows the subject site in relation to existing public transport routes within its vicinity.

Figure 2.4: Public Transport Map



The subject site is well connected to public transport services with the nearest bus stop located less than 200m walking distance from the subject site. In addition, the free city loop bus services and tram service are located in Victoria Square approximately 350m walking distance from the

site. The combination of tram and bus services provides regular access to most areas of the Adelaide CBD and wider metropolitan area.

2.3.2 Pedestrian Infrastructure

Pedestrian footpaths are located along both sides of Nelson Street providing links between Angas Street and Carrington Street via the path around the Law Courts.

During the traffic movement counts, it was observed that Nelson Street is utilised as a pedestrian route between Angas Street and Carrington Street with pedestrian desire lines to and from the east along Carrington Street.

Pedestrian crossing facilities are included within the Angas Street and Carrington Street traffic signal intersections with King William Street and a Pedestrian Actuated Crossing (PAC) traffic signal to the east of the site on Angas Street.

2.3.3 Cycle Infrastructure

No dedicated bicycle lanes are provided along Penny Place, Carrington Street or Nelson Street. Angas Street provides bicycle lanes adjacent Stage 1 of the development, allowing for connection to the subject site via the existing pedestrian links.

3. Development Proposal

3.1 Land Uses

The proposal includes the construction of a mixed-use tower comprising of 136 apartments, 4 townhouses and 61 sq.m of ground floor retail, as well as associated bicycle parking, car parking and amenities.

3.2 Car Parking

Apartments

A total of 136 car parking spaces will be located within the site across 4 levels as summarised in Table 3.1.

Table 3.1: Proposed Car Parking Supply

Parking Location	Number of Proposed Spaces
Ground	14 spaces
Level 1	40 spaces
Level 2	40 spaces
Level 3	42 spaces
Total	136 Spaces

Townhouses

The proposed townhouses will include one garage parking space for each dwelling.

Impact on on-street Parking

As part of the development the existing car parking on Nelson Street will need to be adjusted. There are currently 6 permit parking spaces and 2 time-restricted (2 hour) parking spaces. To accommodate the proposed site accesses and design vehicles, including removal of existing accesses, up to 5 on-street parking spaces are likely to be feasible.

3.3 Vehicle Access

Vehicle access to the proposed tower will be via Nelson Street. The proposed crossover at the northern end of the site will provide access for vehicles parking at the ground floor, as well as for refuse and delivery vehicles. Access for vehicles entering car parking spaces on Level 1 to Level 3 will be provided via a ramp access at the southern end of the site.

The proposed townhouses will be accessible from Penny Place.

3.4 Bicycle Facilities

A total of 140 secure bicycle parking spaces will be provided in a bicycle storage along with a bicycle workshop on the ground floor for use by residents. Visitor bicycle parking will be available within the public realm area to be developed as part of the Stage 1 Kodo Apartments project. Employee bicycle parking for the retail use will be available within either the ground floor storage room, the retail tenancy itself or using nearby visitor bicycle parking.

Further bicycle parking opportunities are available within the storage areas for each apartment and within the apartments themselves.

3.5 Pedestrian Facilities

Pedestrian footpaths are provided on Nelson Street and Penny Place. The existing vehicular access point to the Kodo Apartments site from Angas Street will be closed and modified into a pedestrian and cyclist connection as part of the Stage 1 project. A connection from the proposed Stage 2 development to Penny Place will also be provided, which will be available following completion of Stage 1.

3.6 Loading Areas

It is proposed that refuse collection will occur adjacent to the waste storage room at the northern end of the site. Council refuse collection vehicle and other delivery vehicles will enter Nelson Street in a forward direction and reverse into the loading area from the end of Nelson Street. Bins would be wheeled from the nearby bin storage room to the loading area for collection. The refuse vehicle will exit to Nelson Street in a forward direction.

4. Car Parking

4.1 Development Plan Car Parking Requirements

The proposed development is located within the Primary Pedestrian Area in the Capital City zone as specified in Adelaide City Development Plan. A review of the Adelaide City Development Plan (Table Adel/7) has found that the proposed development is not subject to a minimum car parking requirement. However, a maximum off-street parking requirement for the proposed apartment applies as follows:

"Medium to High Scale Residential:

- 1 space for each dwelling with a total floor area less than 75 square metres;
- 2 spaces for each dwelling with a total floor area between 75 and 150 square metres;
- 3 spaces for each dwelling with a total floor area greater than 150 square metres;
- 1 visitor space for each 6 dwellings."

No rate is provided in Table Adel/7 applicable to townhouses (low scale residential) and the proposed development's non-residential (retail) component.

On the above basis, the maximum number of off-street parking spaces that the proposed development can provide is summarised in Table 4.1.

Table 4.1: Development Plan Car Parking Assessment

Land Use	Type	Rate	Number of dwellings	Maximum Spaces Allowable
Residential	Dwelling less than 75sq.m	1 space per dwelling	51	51
	Dwelling between 75sq.m and 150sq.m	2 spaces per dwelling	85	170
	Dwelling greater than 150sq.m	3 spaces per dwelling	0	0
	Visitor	1 space per 6 dwellings	136	23
Total				244

Based on the results in Table 4.1, the proposed development generates a maximum parking allowance of 244 spaces for all uses.

4.2 Adequacy of Parking Supply

The proposed supply of 136 spaces does not exceed the development plan maximum and is considered an appropriate provision having regard to the good walking, cycling and public transport connectivity within close proximity of the site.

The proposed one garage parking space for each townhouse is considered appropriate for the townhouses.

GTA understands that no parking spaces will be allocated for the retail use, which GTA considers will be largely ancillary to the development and surrounding buildings.

4.3 Disabled Car Parking

The Adelaide (City) Development Plan requires that 1 car parking space in every 30 spaces be reserved for the exclusive use of people with disabilities. On this basis, 5 car parking spaces should be marked as disability parking spaces.

The development proposes 1 formal disability parking spaces in accordance with the Australian Standards on the ground floor.

Given the primarily residential nature of the development, the provision of 1 formal disability parking spaces is considered appropriate for the anticipated demand.

GTA notes that the provision is in excess of the Building Code of Australia requirements for disability parking which does not require any spaces for residential developments.

4.4 Car Parking Layout

The proposed car parking layout is generally consistent with the guidelines set out within the Australian / New Zealand Standards for off-street car parking (AS/NZS2890.1:2004). Some of the key design features are described below:

Apartment Car Parking

- 90 degree angled parking spaces that are generally 2.4m wide and 5.4m long, set within a minimum 6.0m wide aisle, which meet the minimum requirements as per the AS/NZS2890.1:2004 for user class 1A;
- Columns and obstructions greater than 150mm high have been placed outside of the design envelope in accordance with AS/NZS2890.1:2004;
- Minimum 1.0m blind aisle extensions have been provided where required to provide adequate manoeuvring space for vehicles;
- Minimum 5.5m circulation roadways have been provided, with additional 300mm clearances to adjacent walls and columns;
- Ramp grades have been provided in accordance with AS/NZS2890.1:2004.

Townhouse Car Parking

- Garage openings are generally 3.0m wide, set within a 6.3m wide apron, which exceeds the minimum dimensions as per the AS/NZS2890.1:2004;
- The ability for a B99 vehicle to access Townhouses 1 and 3 has been undertaken using Auto-turn Software. The results of the assessment are shown in Figure 4.1 through Figure 4.4.

Figure 4.1: Townhouse 1 Ingress

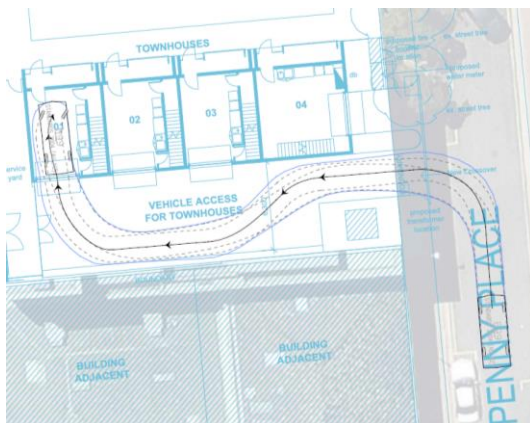


Figure 4.2: Townhouse 1 Egress

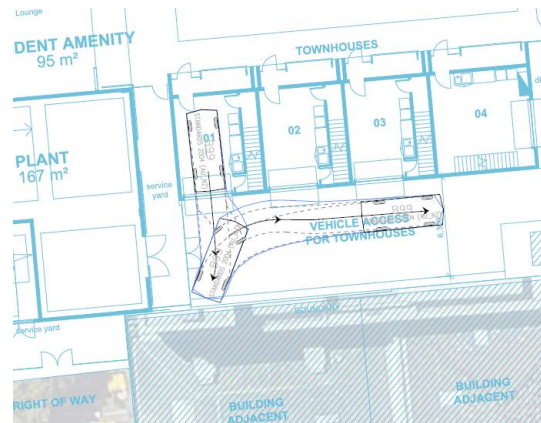


Figure 4.3: Townhouse 3 Ingress

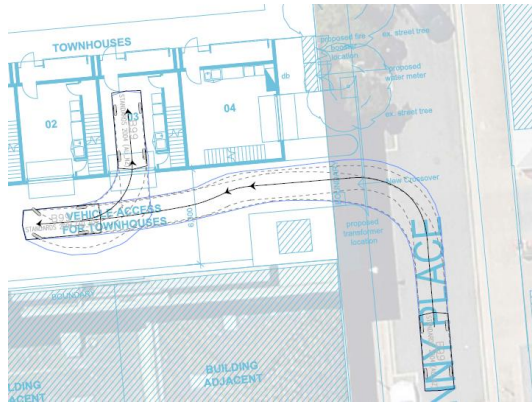
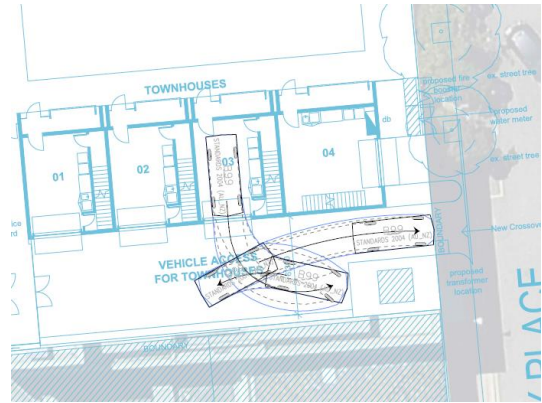
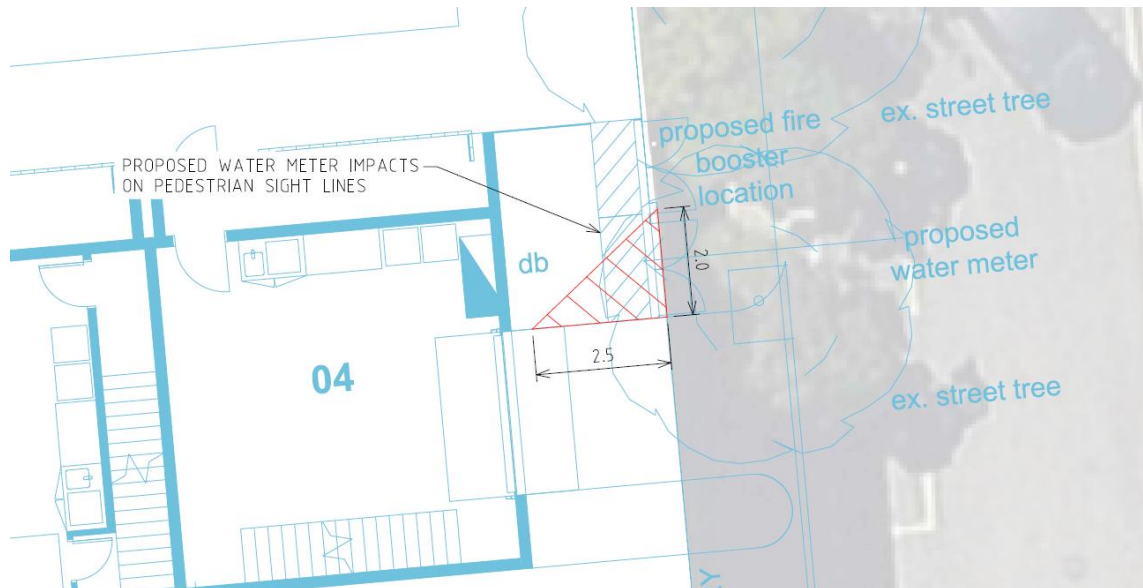


Figure 4.4: Townhouse 3 Egress



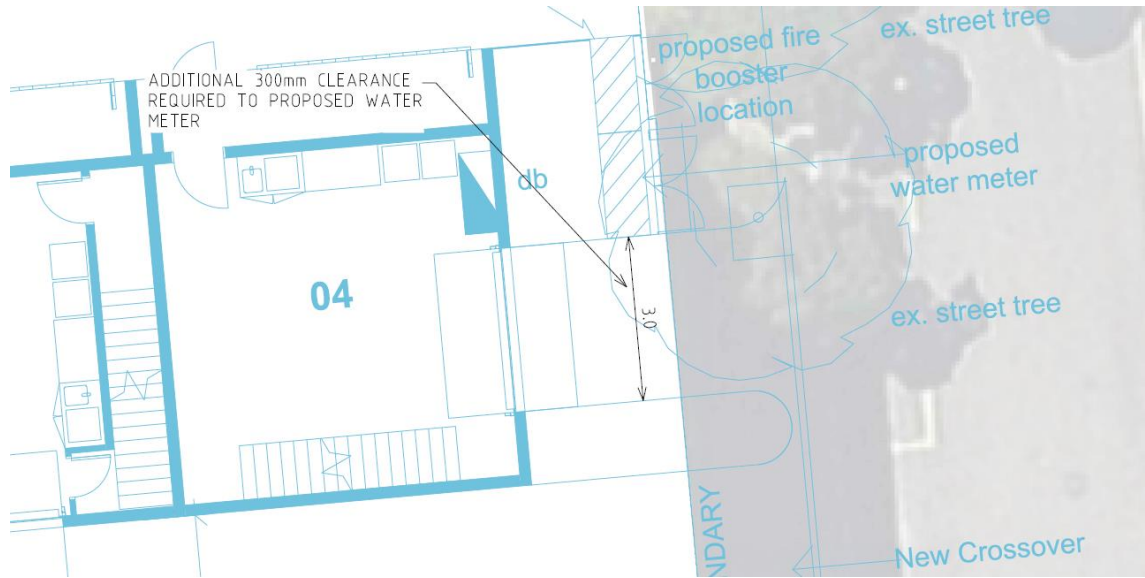
- Pedestrian sight plays as per the AS/NZS2890.1:2004 are achieved at the access of Townhouse 1 – 3. Figure 4.5 demonstrates that the proposed water meter restricts the required sight plays at the crossover of Townhouse 4. The pedestrian sight plays and final location and configuration of the water meter can be addressed in Detailed Design.

Figure 4.5: Townhouse 4 Pedestrian Sight Plays



- The location of the proposed water meter does not allow for the additional 300mm clearance to the 3.0m wide access, as shown in Figure 4.6. The proposed location and configuration of the water meter can be addressed in Detailed Design to provide the minimum required clearances.

Figure 4.6: Townhouse 4 Access Width



5. Sustainable Transport Infrastructure

5.1 Bicycle End of Trip Facilities

The Adelaide (City) Council Development Plan provides guidance on the provision of bicycle parking within Table Adel/6. The development plan rates applicable to the proposed land uses are as follows:

Retail (staff):	1 per 300 square metres of gross leasable floor area
Retail (customer):	1 per 600 square metres of gross leasable floor area
Residential (resident):	1 per dwelling/apartment with floor area less than 150m ²
Residential (resident):	2 per dwelling/apartment with floor area greater than 150m ²
Residential (visitors):	1 for every 10 dwellings

Based on the parking rates presented above, Table 5.1 presents the development plan bicycle parking requirements.

Table 5.1: Development Plan Requirement for Bicycle Facilities

Use	Size	Development Plan Rate		Development Plan Requirement	
		Employee/ Resident	Visitor	Employee/ Resident	Visitor
Retail	61 sq.m	1/300sq.m	1/600sq.m	1	1
Residential <150sq.m	136	1/dwelling	1/10 dwellings	136	14
Total				137	15
				152	

The table above indicates the proposed development generates a development plan bicycle parking requirement of 152 spaces consisting of 137 spaces for residents and employees and 15 spaces for visitors.

The proposed development will provide 140 bicycle parking spaces on ground level within a secure bicycle storage area, which can adequately accommodate the development plan parking requirement of 137 spaces for residents and employees. Visitor bicycle parking will be available within the public realm area to be developed as part of the Stage 1 Kodo Apartments project to accommodate visitor parking demands for both Stage 1 and Stage 2.

On this basis, GTA considers there to be sufficient bicycle parking spaces to meet the bicycle parking requirements set out in the Development Plan.

It should be noted that the total of 140 bicycle parking spaces does not include the capacity for bicycle parking within individual apartments that may also occur, and that actual bicycle parking demand is likely to be less than the development plan requirement.

GTA also notes that bicycle parking facilities are available in all U-Park facilities in Adelaide free of charge or with a small cost depending on individual security requirements. The Central Market U-Park is located less than 400 metres from the subject site. Bicycle parking rails are also provided close to the site on Angas Street in front of the Adelaide Magistrates Court.

The Adelaide City Bicycles can also be hired free of charge in the Adelaide City Council area and used throughout Adelaide for up to 30 days. The nearest hire location is located approximately 400m away on Carrington Street.

5.2 Walking and Cycling Network

The proposed development is located within the Primary Pedestrian Area of the Adelaide City Council Development Plan. As suggested by the zoning, the area is located within a highly walkable area with strong pedestrian links to nearby services and facilities.

The proposed site is accessible from Angas Street by a north-south pedestrian and cyclist connection proposed in Stage 1 along the western side of the proposed Kodo Apartment building. Nelson Street and Penny Place will provide pedestrian and cyclist connection to Carrington Street.

5.3 Public Transport

The site is accessible by public transport with a bus stop located in the south-east corner of Victoria Square less than 200m to the west of the site. In addition, tram services are located approximately 350m west of the site in Victoria Square.

6. Loading Facilities

6.1 Development Plan Requirements

The Adelaide (City) Development Plan provides the following general requirements with regard to development loading facilities:

“Objective 70: *Adequate off-street facilities for loading and unloading of courier, delivery and service vehicles and access for emergency vehicles.”*

In addition, the following Principle of Development Control (PDC) is also provided:

PDC 241: *“Facilities for the loading and unloading of courier, delivery and service vehicles and access for emergency vehicles should be provided on-site as appropriate to the size and nature of the development. Such facilities should be screened from public view and designed, where possible, so that vehicles may enter and leave in a forward direction.”*

6.2 Proposed Loading and Refuse Collection Collections

A refuse and bin storage area for the residential and retail uses is proposed to be located on ground level at the northern end of Nelson Street. The proposed loading and refuse collection area is located at the entrance to the ground level car park adjacent to the bin storage. To minimise disruption to traffic, refuse collection will be scheduled to occur outside of peak pedestrian and traffic periods where possible.

Refuse vehicles would enter the loading area from the south along Nelson Street in a forward direction, reverse into the loading area in the car park from the end of Nelson Street and then exit in a forward direction. The ability for a typical 10.0m long refuse vehicle to perform this manoeuvre is shown in Figure 6.1 and Figure 6.2. The turning movements shown would require two existing permit parking spaces on Nelson Street to be removed.

Figure 6.1: 10.0m Refuse Vehicle Reverse into Ground Floor Car Park Entry

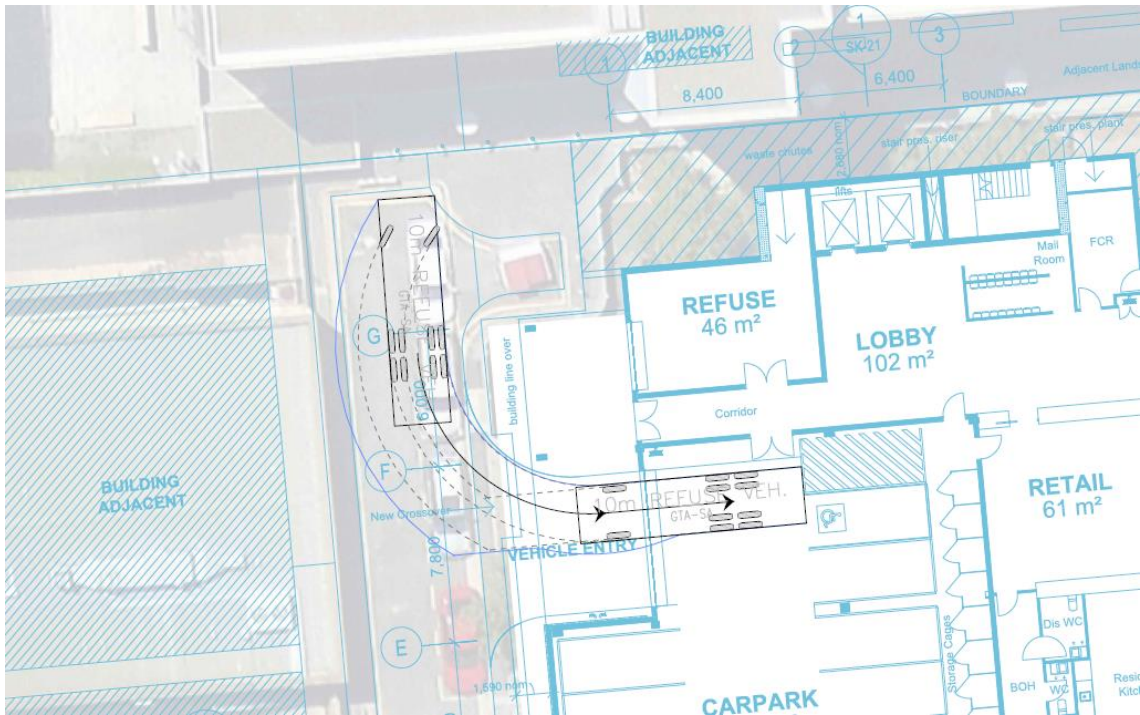
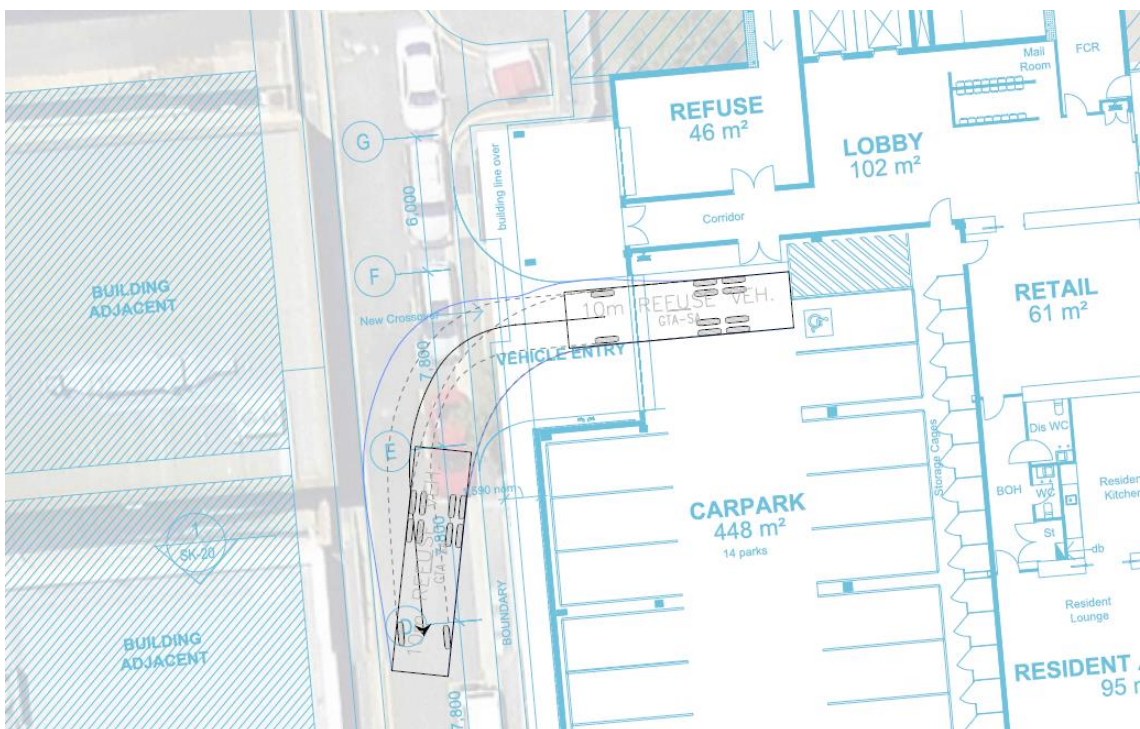


Figure 6.2: 10.0m Refuse Vehicle Exiting in Forward Direction



GTA has performed swept path analysis to explore the impact of refuse vehicles occupying the car park entry on vehicles accessing the ground floor car parks. Vehicles will still be able to enter and exit the subject site if a refuse vehicle is undertaking collection on site, as shown in Figure 6.3 and Figure 6.4.

Figure 6.3: Swept Path of Entering Vehicle

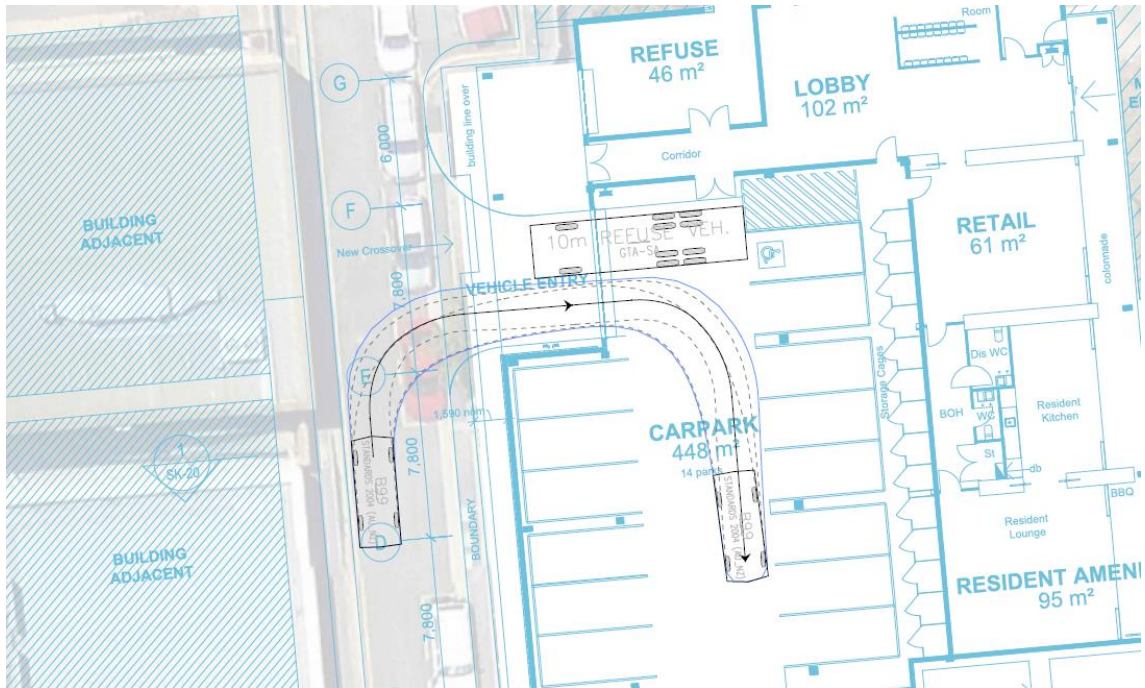
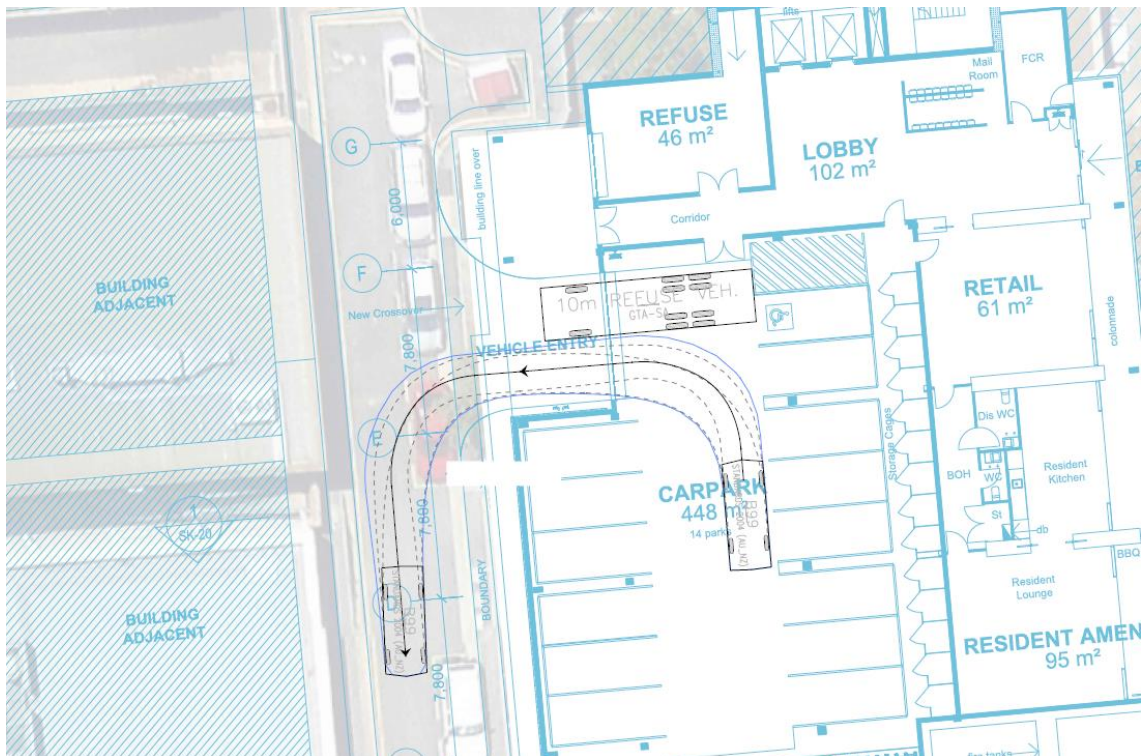


Figure 6.4: Swept Path of Exiting Vehicle



As there are only 14 parking spaces on the ground floor, the risk of a vehicle needing to enter or exit the car park whilst the refuse vehicle is in position is considered to be very low.

7. Traffic Impact Assessment

7.1 Traffic Generation

7.1.1 Design Rates

Apartments

Traffic generation estimates for the proposed development have been sourced from the NSW RMS 'Guide to Traffic Generating Developments – Updated August 2013'. Given that no parking spaces are to be allocated to the retail use, there will generally be no traffic movements associated with the retail use other than a small number of movements by loading and waste collection vehicles. The retail use has therefore been excluded from the traffic generation assessment.

Estimates of peak hour and daily traffic volumes resulting from the proposal are set out in Table 7.1.

Table 7.1: Estimated Traffic Generation

Period	Design Generation Rates	Number of Car Spaces	Traffic Generation Estimates
AM Peak Hour	0.15 vehicle movements / car space	136	20
PM Peak Hour	0.12 vehicle movements / car space	136	16
Daily	1.34 vehicle movements / car space	136	182

Table 7.1 indicates the proposed development could be expected to generate up to 20 vehicle movements in a peak hour period and up to 182 movements over the entire day.

Townhouses

Traffic generation estimates for the four townhouses as part of the Stage 2 development have been sourced from the NSW RTA's 'Guide to Traffic Generating Development 2002'. Rates for medium density residential flat building is shown as follows:

Daily Vehicle Trips = 5.0-6.5 per dwelling

Weekday Peak Hour Vehicle Trips = 0.5-0.65 per dwelling

Using the above rates, the four townhouses would generate up to 2 vehicles in peak hour and up to 20 trips a day in total.

7.1.2 Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposed development will be influenced by several factors, including the:

- i configuration of the road network in the immediate vicinity of the site;
- ii surrounding employment centres, retail centres and schools in relation to the site;
- iii configuration of access points to the site.

Having consideration to the above, for the purposes of estimating vehicle movements, the following directional distributions have been assumed for both the apartments and townhouses:

- o Carrington Street (west) – 50%
- o Carrington Street (east) – 50%

In addition, the directional split of traffic (i.e. the ratio between the inbound and outbound traffic movements) has been assumed as 20:80 in the AM peak period, 80:20 in the PM peak period and 50:50 over the entire day.

Based on the above, Figure 7.1 and Figure 7.2 have been prepared to show the estimated marginal increase in turning movements, in the vicinity of the subject property, following full site development.

The only other additional traffic in Nelson Street will be limited to the occasional refuse or commercial vehicle. This is not anticipated to occur during the peak periods and is therefore not shown on the traffic distribution figures.

Figure 7.1: AM Peak Hour Site Generated Traffic Volumes

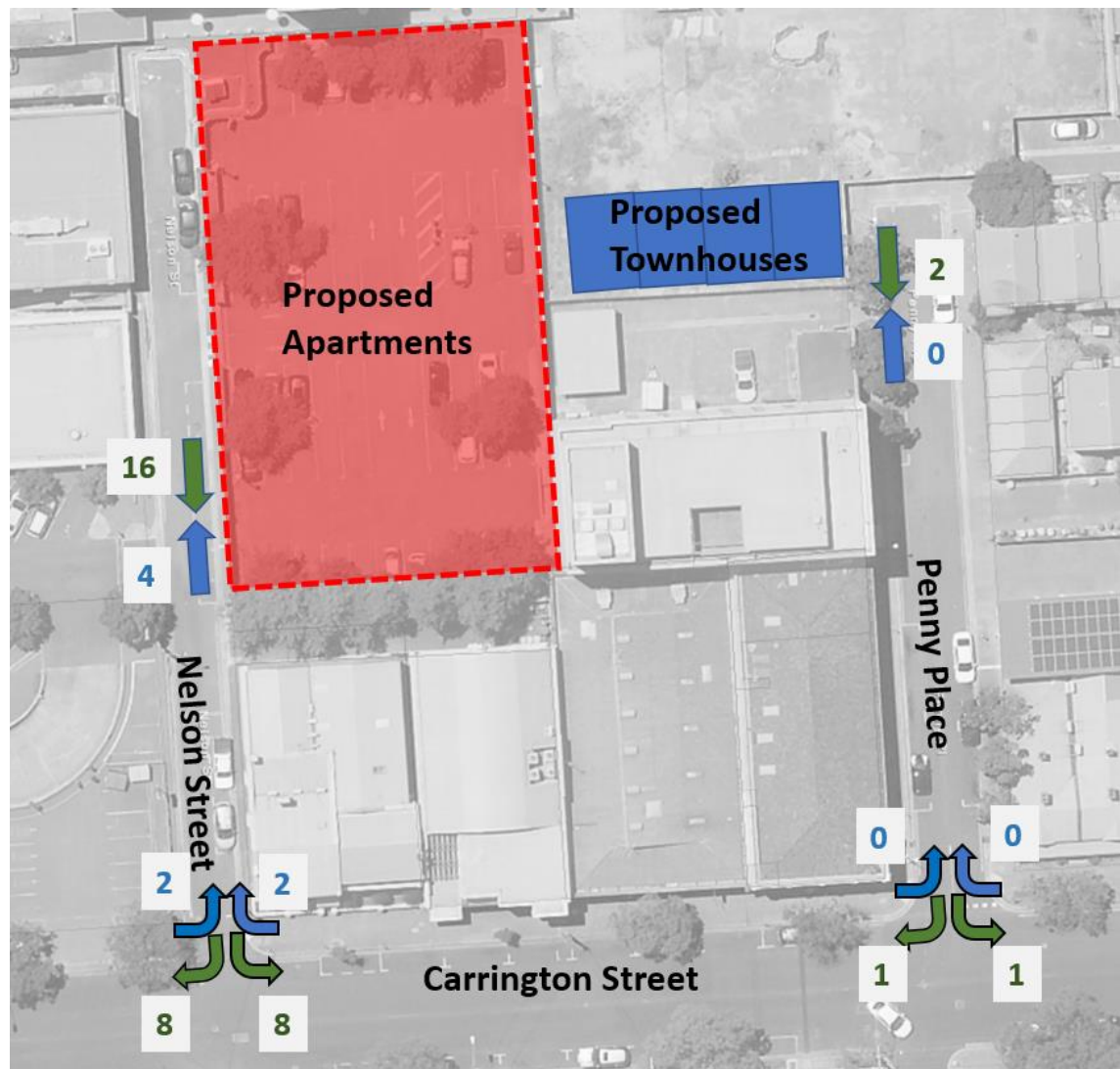
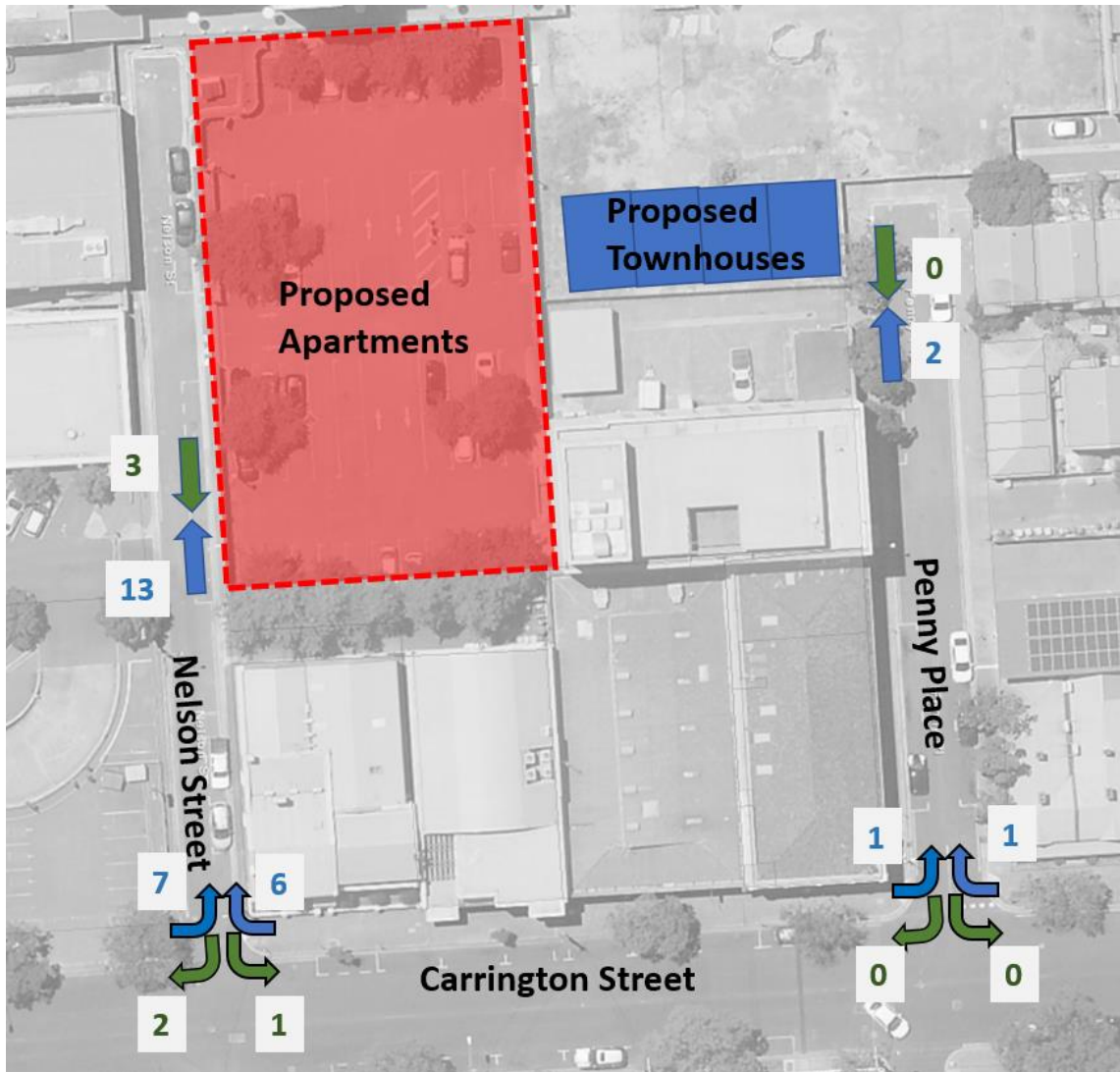


Figure 7.2: PM Peak Hour Site Generated Traffic Volumes



7.2 Traffic Impact

Against existing traffic volumes, in the vicinity of the site, the low volume of additional traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

8. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i The proposed development generates a maximum development plan car parking requirement of 244 spaces.
- ii The proposed supply of 136 spaces does not exceed the development plan maximum and is considered appropriate for the proposed development.
- iii The proposed parking layout is consistent with the dimensional requirements as set out in the Australian/New Zealand Standards for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009).
- iv The provision of 140 on-site bicycle parking spaces is considered adequate for the proposed development.
- v The proposed development is well located in relation to existing pedestrian routes, bicycle lanes and bus and tram based public transport.
- vi The proposed refuse collection arrangements from Nelson Street are considered appropriate.
- vii The site is expected to generate up to 20 and 182 vehicle movements in any peak hour and daily respectively.
- viii There is adequate capacity in the surrounding road network to cater for the traffic generated by the proposed development.

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PREMIER CAPITAL DEVELOPMENTS

PENNY PLACE STAGE TWO DEVELOPMENT APPLICATION ACOUSTIC REPORT

OCTOBER 2017



Question today *Imagine tomorrow* Create for the future

Penny Place Stage Two Development Application Acoustic Report




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EXECUTIVE SUMMARY

The following report provides an acoustic assessment of the proposed Penny Place Stage 2 development, located between Penny Place and Nelson Street, Adelaide.

Proposed design criteria for the project utilises the legislative requirements stated in Adelaide City Council Development Plan and the South Australian EPA Environment Protection (Noise) Policy 2007.

Design advice is based on an environmental noise survey conducted at the proposed site and the adjacent surroundings.

The report concludes that the proposed Penny Place Stage 2 development will be able to comply with the acoustic requirements outlined in the Adelaide City Council Development Plan, as follows:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

1 PROJECT BACKGROUND

1.1 INTRODUCTION

WSP was commissioned by Premier Capital Developments to conduct an acoustic assessment as part of the Development Application relating to the proposed development located between Penny Place and Nelson Street, Adelaide.

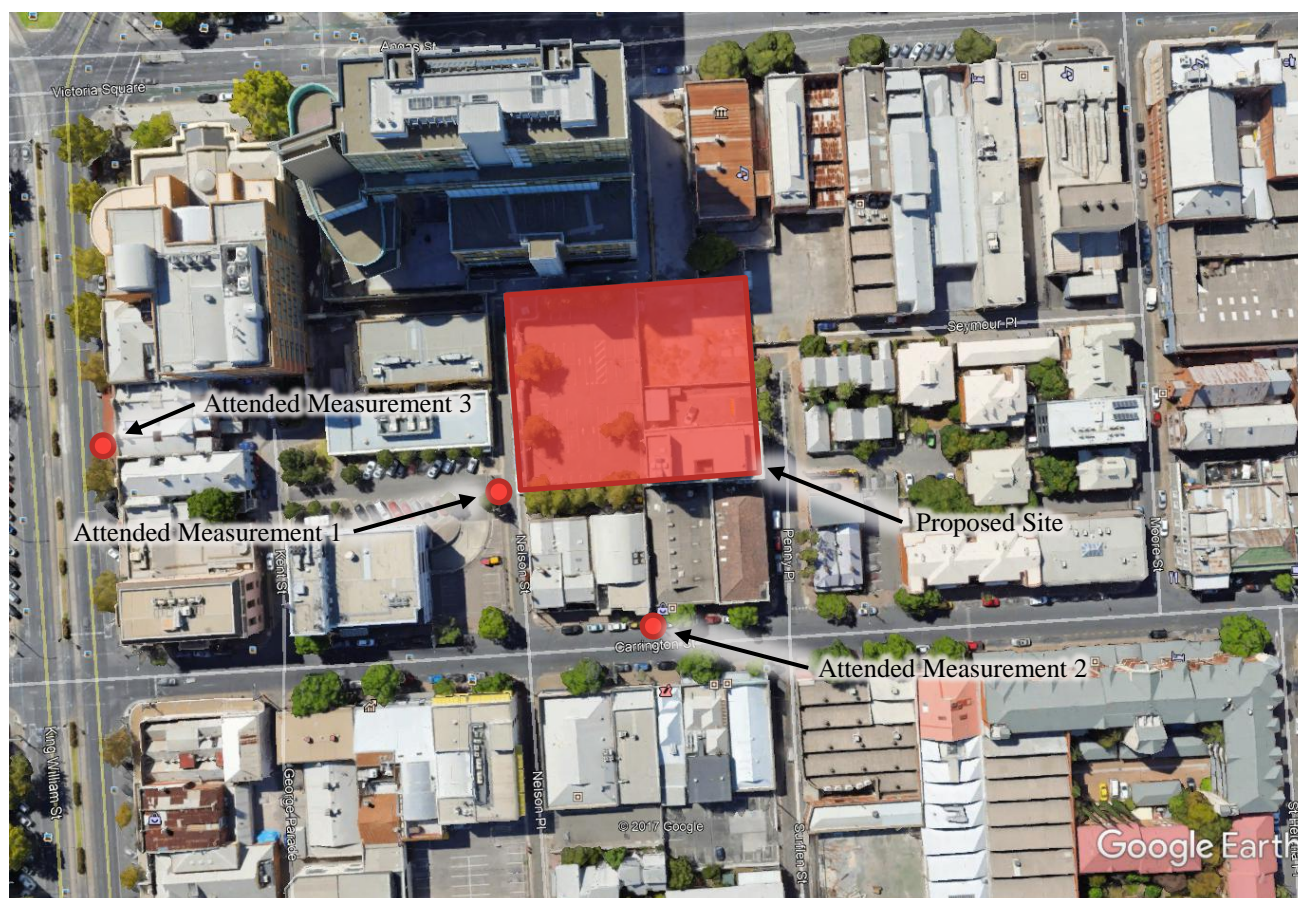
The acoustic assessment has been conducted in accordance with the requirements of the Adelaide City Council Development Plan and the South Australian EPA Environment Protection (Noise) Policy 2007.

This report provides information regarding:

- An overview of the proposed development works.
- Acoustic criteria applicable to the proposed development.
- Façade glazing recommendations.
- Recommendations to control noise emissions from the site.

2 SITE DESCRIPTION

The proposed development site is located between Penny Place and Nelson Street, Adelaide. An aerial photograph illustrating the proposed development site location and surrounding area is presented in Figure 2.1.



Imagery © 2016 Google, Map data ©2016 Google

Figure 2.1 Development site aerial photo and measurement locations

The background noise environment for the proposed site is controlled by road traffic noise (including trams) from King William Street to the West and Carrington Street to the South. Some noise is also attributed to noise emissions from nearby buildings with external plant, and from an automatic roller door on the eastern side of the SAPOL building located at 20 Carrington Street.

The project as understood comprises of a new mixed use development consisting of:

- 20 storey tower comprising:
 - Retail space at ground level.
 - Under cover car parking from ground to level 3.
 - Apartments on levels 4-20.
- Four townhouses located between the tower and Penny Place.
- Landscaped public square.

The closest noise sensitive receptors are located on the corner of Seymour and Penny Place, along Seymour Place and Moore Street, the City South Apartments on Carrington Street and the future Kodo apartment building located on Angus Street. All these buildings are residential dwellings except for some retail space at ground level.

2.1 ENVIRONMENTAL NOISE SURVEY

An attended short-term environmental noise survey was conducted at the development site between 16:30 – 17:15 hours on 27 September and 06:45 – 07:30 hours on 28 September 2017 to determine the existing ambient noise levels.

All measurements were taken with a type 1 sound level meter within valid laboratory calibration. Calibration measurements were taken out before and after the measurements and showed no significant drift in readings. The sound level meter and calibration information is presented in Table 2.1. Calibration certificates for the equipment are available upon request.

Table 2.1 Equipment details

EQUIPMENT	MANUFACTURER	MAKE	SERIAL NUMBER	CALIBRATION STATUS
Sound Level Meter	Brüel & Kjær	2250	2749881	Current
Acoustic Calibrator	Brüel & Kjær	4231	2385016	Current

A number of measurement locations were selected as follows (shown in Figure 2.1):

- Location 1 – Nelson Street, at the south west corner of the site.
- Location 2 – Carrington Street, approximately 7m from the centreline of the road.
- Location 3 – King William Street, approximately 15m from the centreline of the road.

The attended noise measurements were approximately 5-10 minutes in duration at each location, which was long enough for the equivalent noise level to settle and provide a good representation of the background noise environment.

2.2 MEASUREMENT RESULTS

The results for the attended noise measurements are shown in Table 2.2.

Table 2.2 Attended measurement results summary

SURVEY MEASUREMENT	DATE / TIME	L _{AEQ} dB	L _{A10} dB	L _{A90} dB	L _{AMAX(F)} dB
Location 1	27/9/17 16:38	59	62	54	73
	28/9/17 06:53	57	60	53	72
Location 2	27/9/17 16:52	66	70	52	80
	28/9/17 07:01	67	72	54	78
Location 3	27/9/17 17:00	68	72	61	79
	28/9/17 07:09	66	70	57	79

3 NOISE CRITERIA

3.1 ADELAIDE CITY COUNCIL DEVELOPMENT PLAN

3.1.1 COUNCIL WIDE PRINCIPLES OF DEVELOPMENT CONTROL

The Adelaide City Council Development Plan (Consolidated 20 June 2017) provides the following council wide Principles of Development Control (PDC) that are applicable to this development:

Noise Sources

93 *Mechanical plant or equipment should be designed, sited and screened to minimise noise impact on adjacent premises or properties. The noise level associated with the combined operation of plant and equipment such as air conditioning, ventilation and refrigeration systems when assessed at the nearest existing or envisaged noise sensitive location in or adjacent to the site should not exceed*

- (a) *55 dB(A) during daytime (7.00am to 10.00pm) and 45 dB(A) during night time (10.00pm to 7.00am) when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.*
- (b) *50 dB(A) during daytime (7.00am to 10.00pm) and 40 dB(A) during night time (10.00pm to 7.00am) in or adjacent to a City Living Zone, the Adelaide Historic (Conservation) Zone, the North Adelaide Historic (Conservation) Zone or the Park Lands Zone when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.*

94 *To ensure minimal disturbance to residents:*

- (a) *ancillary activities such as deliveries, collection, movement of private waste bins, goods, empty bottles and the like should not occur:*
 - (i) *after 10.00pm; and*
 - (ii) *before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.*
- (b) *typical activity within any car park area including vehicles being started, doors closing and vehicles moving away from the premises should not result in sleep disturbance when proposed for use after 10.00pm as defined by the limits recommended by the World Health Organisation.*

Noise Receivers

95 *Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise sources such as major transport corridors (road, rail, tram and aircraft), commercial centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.*

96 *Noise sensitive development in mixed use areas should not unreasonably interfere with the operation of surrounding non-residential uses that generate noise levels that are commensurate with the envisaged amenity of the locality.*

97 *Noise sensitive development adjacent to noise sources should include noise attenuation measures to achieve the following:*

- (a) *satisfaction of the sleep disturbance criteria in the bedrooms or sleeping areas of the development as defined by the limits recommended by the World Health Organisation;*

- (b) *the maximum satisfactory levels in any habitable room for development near major roads, as provided in the Australian/New Zealand Standard AS/NZS 2107:2000 - 'Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors';*

98 *Attached dwellings/serviced apartments should be designed to minimise the transmission of sound between dwellings/serviced apartments and should particularly protect bedrooms from possible noise intrusion.*

Design Techniques (these are ONE WAY of meeting the above Principle)

98.1 *Appropriate stacking and horizontal location of rooms, eg bedrooms over bedrooms and bedrooms next to bedrooms.*

98.2 *Bedrooms of any dwelling/serviced apartment:*

- (a) *not sharing a wall with a living room* or a garage of another dwelling; and*
- (b) *not located above or below a living room* of another abutting dwelling.*

** Living room means a room used for social interaction, relaxation or dining, including a living room, lounge room or open eating area linked to a kitchen, but does not include a bedroom.*

99 *The number of dwellings/serviced apartments within a development sharing a common entry should be minimised to limit noise generation in internal access ways.*

Design Techniques (these are ONE WAY of meeting the above Principle)

99.1 *Common entries servicing a maximum of 10 dwellings/serviced apartments on each floor level.*

99.2 *Incorporation of acoustic core filled doors with airtight rubber seals for all entry doors into common access ways.*

3.1.2 ADELAIDE CITY COUNCIL ZONING

The proposed development site is located within the Adelaide City Council “Capital City” zone, policy area 13. The surrounding noise sensitive receivers are in the following zones:

- Residences located on the corner of Penny and Seymour Place are in the “Capital City” zone (no policy area).
- Residences located along Seymour Place and Moore Street are in the “City Living” zone, policy area 32.
- The City South Apartments located on Carrington Street are in the “City Living” zone, policy area 32.
- The future Kodo Apartment building located on Angus Street is in the “Capital City” zone (no policy area).

The Capital City zone (no policy area) promotes a mix of commercial, retail, professional services, hospitality, entertainment, educational facilities and medium and high density living. It is noted that policy area 13 of the Capital City zone primarily promotes commercial land use, which is supported by educational, hospitality and entertainment activities and increased opportunities for residential, student and tourist accommodation.

The City Living zone primarily promotes residential land use, along with related non-residential uses that are compatible with residential amenity. Additional requirements for policy area 32 note that the area provides for medium scale residential development supported by a range of uses including shops, offices and consulting rooms, as well as community service and education, that maintain the areas residential amenity.

3.2 AUSTRALIAN STANDARD AS/NZS 2107:2016

The Adelaide City Council, council wide PDC 97 (b) refers to Australian/New Zealand Standard AS/NZS 2107:2000, however we note that the 2000 version of this standard has been superseded with the 2016 version which was released in October 2016. Therefore, for the purpose of this assessment we have utilised the 2016 version of the standard.

Australian/ New Zealand Standard AS/NZS 2107:2016 – *Acoustics—Recommended design sound levels and reverberation times for building interiors* (AS/NZS 2107) provides internal design sound levels for spaces based on the occupancy of that space. For residential buildings, AS/NZS 2107 provides internal design sound levels for houses and apartments in inner city areas or entertainment districts or near major roads, summarised in Table 3.1

Table 3.1 Internal Noise Design Criteria

TYPE OF OCCUPANCY	DESIGN SOUND LEVEL RANGE, $L_{Aeq,T}$ dB
Apartment common areas (e.g. foyer, lift lobby)	45 to 50
Living areas	35 to 45
Sleeping areas (night time)	35 to 40
Work areas	35 to 45

3.3 SLEEP DISTURBANCE CRITERIA

The World Health Organisation (WHO), *Guidelines for Community Noise* report (Berglund, Lindvall, Schwela) was developed based on the outcome of a WHO expert task force meeting held in London, UK in April 1999.

This document has been used widely to define guideline values for sleep disturbance (among other things), and has generally been accepted for use in Australia. The guideline values for sleep disturbance are reproduced in Table 3.2.

Table 3.2 Sleep Disturbance Criteria

SPECIFIC ENVIRONMENT	CRITICAL HEALTH EFFECT	L_{Aeq} dB	$L_{Amax(F)}$ dB
Inside bedrooms	Sleep disturbance, night time	30 (8 hour)	45

It is noted that the WHO internal L_{Aeq} noise criteria is more stringent than the AS/NZS 2107 criteria listed in Table 3.1. However, it should be noted that the WHO criteria is based on an 8 hour average, whereas the AS/NZS 2107 criteria is based on a measurement time to appropriately characterise the noise source. For this assessment we have adopted the AS/NZS 2107 criteria and for the purpose of assessing traffic noise ingress, have applied it to the typical worst case (highest) 1 hour noise level.

3.4 ENVIRONMENT PROTECTION (NOISE) POLICY

The South Australian *Environment Protection (Noise) Policy 2007* (Noise EPP) provides criteria for noise sources, which if complied with will satisfy the General Environmental Duty under Section 25 of the Environment Protection Act 1993.

The Noise EPP sets noise criteria based on the land uses principally promoted for the noise source and sensitive receivers by the relevant council development plan. For this development, the Adelaide City Council Development Plan principally promotes the following land uses for the noise source and nearest sensitive receivers. Where more than one land use is principally promoted for a zone, the Noise EPP requires that an average of the Indicative Noise Factors be taken for that zone. Similarly, where different land uses are promoted for the noise source and sensitive receivers, the Noise EPP requires an average of the Indicative Noise Factors be taken for the noise source and receiver.

A summary of the Indicative Noise Factors derived for each zone are presented in Table 3.3.

Table 3.3 Summary of Indicative Noise Factors for each Zone

COUNCIL ZONE	LAND USES PRINCIPALLY PROMOTED	INDICATIVE NOISE FACTOR, L _{AEQ,15MIN} dB	
		Day (7am – 10pm)	Night (10pm – 7am)
Noise Source – proposed development			
Capital City, policy area 13	Commercial	62	55
Sensitive Receivers			
Capital City (no policy area)	Commercial and residential	57	50
City Living, policy area 32	Residential	52	50

Based on the Indicative Noise Factors derived for each zone in Table 3.3, we are able to derive noise criteria for each of the noise sensitive receivers surrounding the site. Note that as this is a development authorisation application, the Part 5, Section 20 of the Noise EPP requires the predicted noise level to not exceed the Indicative Noise Factor less 5 dBA. The applicable noise criteria derived from the Noise EPP are presented in Table 3.4.

Table 3.4 Summary of Noise EPP Criteria

NOISE SENSITIVE RECEIVER	NOISE EPP CRITERIA, $L_{Aeq,15MIN}$ dB	
	Day (7am – 10pm)	Night (10pm – 7am)
Penny Place Stage 2	57	50
Residences corner of Penny and Seymour Place	55	48
Residences along Seymour Place and Moore Street	52	45
City South Apartments located on Carrington Street	52	45
Kodo Apartment building located on Angas Street	55	48

The derived Noise EPP criteria are applicable for all noise sources from the proposed development, which will consist of mechanical plant and car park noise. In addition to this it is noted that the Adelaide City Council PDC 93 (b) requires that mechanical plant in or adjacent to a City Living zone also achieve noise criteria of 50 dBA during the day and 40 dBA at night.

3.5 NOISE CRITERIA SUMMARY

A summary of the applicable noise criteria for the Penny Place Stage 2 development are presented in Table 3.5.

Table 3.5 Noise Criteria Summary, dB

LOCATION	TIME PERIOD	
	Day (7am – 10pm)	Night (10pm – 7am)
Noise Ingress (Internal Receiver Locations)		
Apartment common areas (e.g. foyer, lift lobby)	$L_{Aeq,1hr}$ 50	N/A
Living areas	$L_{Aeq,1hr}$ 45	N/A
Sleeping areas (night time)	N/A	$L_{Aeq,1hr}$ 40 $L_{Amax(f)}$ 45
Work areas	$L_{Aeq,1hr}$ 45	N/A
Noise Emissions (External Receiver Locations)		
Penny Place Stage 2 (apartments and town houses)	$L_{Aeq,15min}$ 57 (overall)	$L_{Aeq,15min}$ 50 (overall)
Residences corner of Penny and Seymour Place	$L_{Aeq,15min}$ 55 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 48 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
Residences along Seymour Place and Moore Street	$L_{Aeq,15min}$ 52 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 45 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
City South Apartments located on Carrington Street	$L_{Aeq,15min}$ 52 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 45 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
Kodo Apartment building located on Angas Street	$L_{Aeq,15min}$ 55 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 48 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)

4 ASSESSMENT

4.1 NOISE INGRESS

4.1.1 TRAFFIC NOISE INGRESS

Based on an external façade noise level of 59 dB L_{Aeq} during the day and 57 dB L_{Aeq} at night, we predict the following internal noise levels for various glazing options in Table 4.1.

Table 4.1 Predicted Internal Noise Levels

ROOM	GLAZING TYPE	PREDICTED INTERNAL NOISE LEVEL dB L_{Aeq}	CRITERIA dB L_{Aeq}	COMPLIES?
Living Room	IGU 6/12/6 (R_w 33)	37	45	Yes
	IGU 6/12/10.38 lam (R_w 39)	31		Yes
	6.38mm laminated (R_w 32)	36		Yes
	10.38mm laminated (R_w 34)	33		Yes
Bedroom	IGU 6/12/6 (R_w 33)	36	40	Yes
	IGU 6/12/10.38 lam (R_w 39)	30		Yes
	6.38mm laminated (R_w 32)	34		Yes
	10.38mm laminated (R_w 34)	32		Yes
Bedroom ($L_{Amax(f)}$)	IGU 6/12/6 (R_w 33)	46	45	No
	IGU 6/12/10.38 lam (R_w 39)	39		Yes
	6.38mm laminated (R_w 32)	44		Yes
	10.38mm laminated (R_w 34)	42		Yes

Based on the results summarised in Table 4.1, all of the proposed glazing types are predicted to be compliant, with the exception of the 6mm glass /12mm air space /6mm glass IGU when used on the bedroom façade. The predictions assume that the doors to balconies are of the same glazing type as the façade, and the door assemblies include good quality acoustic seals that does not significantly degrade the acoustic performance of the façade glazing.

4.1.2 CONDENSER NOISE INGRESS

The proposed air conditioning arrangement for the apartment building will consist of single condensing unit installed on the balcony of each apartment, which serves multiple indoor units within the apartment.

Given that the condenser unit on each apartment balcony is controlled by the occupant of that apartment, for the purpose of the Development Application noise ingress into the apartments from individual condenser units has not been assessed. Note that as the design is progressed we will endeavour to achieve the internal noise criteria for the noise produced by the condenser units, however we note that there is no legislative requirement to achieve the internal noise criteria from condenser units for the apartment that it is serving.

4.1.3 CAR PARK NOISE INGRESS

Noise emissions resulting from short term noise sources within the Level 3 car parking area has been assessed for its impact on the Level 4 apartments. Maximum short term noise emissions from the car park will likely be due to a car door closing.

The resultant noise level from a car door closing within the car parking area is predicted to be 79 dB $L_{Amax(f)}$. Based on a minimum 150mm thick floor slab for the Level 4 apartments that are located above the car parking area, the predicted noise level within the bedroom areas is 31 dB $L_{Amax(f)}$, which is compliant with the 45 dB $L_{Amax(f)}$ sleep disturbance criterion.

4.2 NOISE EMISSIONS

4.2.1 CONDENSER NOISE EMISSIONS

We have based the following condenser noise emission calculations on a preliminary condenser selection undertaken for the project. The preliminary condenser selection is a 14kW Daikin RXYMQ5AV4A with a published sound power level of 71 dBA re $10^{-12}W$. We understand that the air conditioning system is designed with a diversity factor of 60%, meaning that as a worst case up to 60% of the units will be simultaneously operating at full load. Furthermore, the condenser units will be located within an enclosure that will provide approximately 1 dBA noise reduction.

4.2.1.1 PENNY PLACE APARTMENTS

We have calculated the noise from the operation of a condenser unit on the neighbouring apartment balcony. The predicted noise level on the adjoining balcony is 48 dB L_{Aeq} . This is compliant with the 50 dB L_{Aeq} noise criteria.

4.2.1.2 PENNY PLACE TOWN HOUSES

We have calculated the noise from the operation of 60% of the apartment condenser units on the neighbouring Penny Place Town Houses. The predicted noise level at the Penny Place town houses is 44 dB L_{Aeq} . This is compliant with the 50 dB L_{Aeq} noise criteria.

4.2.1.3 RESIDENCES ON PENNY AND SEYMOUR PLACE AND BEYOND

We have calculated the noise from the operation of 60% of the apartment condenser units on the noise sensitive receivers (residences) located on Penny and Seymour Place. The predicted noise level at the residences is 40 dB L_{Aeq} . This is compliant with the 40 dB L_{Aeq} noise criteria for mechanical plant. Noise levels at receivers beyond this (i.e. Moore Street and City South Apartments) are expected to be lower than this and as such comply with the mechanical plant noise criteria.

4.2.1.4 KODO APARTMENTS

We have calculated the noise from the operation of 60% of the apartment condenser units on the noise sensitive receivers (residences) located at the Kodo Apartment building (currently in construction). The predicted noise level at the Kodo Apartments is 39 dB L_{Aeq} . This is compliant with the 40 dB L_{Aeq} noise criteria for mechanical plant.

4.2.2 OTHER MECHANICAL PLANT

Other mechanical plant will be required for the Penny Place Stage 2 development, such as car park ventilation fans, smoke spill fans and stair pressurisation fans. The design of these systems has not yet developed to a stage where a detailed assessment of the noise emissions can take place.

It is noted that these systems will be designed and located, and incorporate necessary acoustic attenuation (such as attenuators and screens) to ensure that the mechanical plant noise criteria are not exceeded at any of the noise sensitive receivers.

4.2.3 CAR PARK NOISE

Noise emissions from the car park has been assessed. The traffic report by GTA Consultants “Penny Place Stage 2, Nelson Street, Adelaide, Transport Impact Assessment”, draft dated 3 October 2017, notes that the traffic generation from the on-site car parking are 21 movements during the am peak hour and 17 movements during the pm peak hour. Based on these assumptions, we have calculated an internal reverberant noise level of 60 dB $L_{Aeq,15min}$ within the car park during the busier am peak hour.

Assuming that the Penny Place Stage 2 town houses do not have western facing windows or balconies; the predicted noise emissions from the car park at the most affected noise sensitive receivers are as follows:

- 54 dB $L_{Aeq,15min}$ at the closest Penny Place town house.
- 44 dB $L_{Aeq,15min}$ at the residences located on the corner of Penny Place and Seymour Place.

The predicted noise emission levels are less than the overall day time noise criteria for the Penny Place town houses (criterion 57 dB $L_{Aeq,15min}$) and residences located on the corner of Penny Place and Seymour Place (criterion 55 dB $L_{Aeq,15min}$).

5 CONCLUSION

WSP has undertaken an acoustic assessment for the proposed Penny Place Stage 2 development in order to support the development application.

Based on the assessment, it has been demonstrated that:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

As such, WSP are of the opinion that the proposed Penny Place Stage 2 development will be able to comply with the acoustic requirements outlined in the Adelaide City Council Development Plan.



Robert
Bird
Group

Stormwater Management Plan Penny Place Stage 2

Issue: A - Draft

18 October 2017

Prepared For: Flagship (Penny Place) Pty Ltd

Project No.: 17453

Document No.: 17453-REP-stormwater

Report Amendment Register

[illegible]

REVIEWER:

Reviewer of Issue / Amendment
Signing for and on behalf of
Robert Bird Group Pty Ltd

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1.0 Introduction

A new 20 level apartment building is proposed for the site between Nelson Street and Penny Place, Adelaide. The site is at the northern end of the streets and is currently a car park.

The site is shown in Figure 1.



Figure 1 – Subject site

1.1 Site description

The site is currently a asphalt car park and a vacant site that has asphalt surfacing in poor condition.

The site is approximately 58 metres by 52 metres and is generally level.

2.0 Existing conditions

2.1 Stormwater network

Neither Nelson Street nor Penny Place have underground stormwater infrastructure. There is a side entry pit at the southern ends of the streets adjacent Carrington Street.

The site currently discharges stormwater to the street kerb and gutter through standard Adelaide City Council steel channel drains with steel floor plate covers at footpath level.

There is no evidence of stormwater treatment systems to remove contaminants from the storm water.

2.2 Pre-construction flows

The current site is generally impermeable.

The total area of the site is 2187 square metres.

3.0 Proposed conditions

3.1 Proposed site layout

The proposed developed of the site includes a 20 level apartment building, 4 townhouses, landscaped public square and the balance paved areas.

The post development areas are shown in Table 1.

Table 1 – Post development areas

ITEM	AREA (square metres)
Apartment	1387
Townhouses	168
Landscaped area	273
Hard stand (balance)	359
TOTAL	2187

It can be considered that the landscaped area will have some absorption into the soil and that the run-off from the site overall will be less with the post development configuration than the current site.

For the purposes of this report it is considered that the post development flow is the same as the pre-development flow.

3.2 Apartment building

The apartment building has box gutters at roof level. The box gutters discharge to ten (10) downpipes. Eight (8) of the downpipes collect stormwater run-off from the eight (8) apartment balconies.

The downpipes and box gutters have been designed to accommodate the 5 minute 100 year ARI event in accordance with AS 3500.3.

The areas contributing to each downpipe has been configured such that the maximum flow is 16 litres per second.

The 8 downpipes are collected into 4 pits at ground level (inside the building car park). The pits discharge using standard Adelaide City Council steel channels with steel floor plate lids at footpath level to Nelson Street. The pits have grated lids as the kerb and gutter in Nelson Street will not accommodate the 100 year ARI event. The overflow from the pits will flow to Nelson Street.

3.3 Townhouses

The townhouses will have roof box gutters that discharge to four (4) downpipes. The downpipes will be collected in pits and discharged to a standard Adelaide City Council steel channels with steel floor plate lid at footpath level in Penny Place.

3.4 Landscaped area

The landscaped area will have sub soil drainage that will be collected in a pollution control device before being discharged into a standard Adelaide City Council steel channels with steel floor plate lid at footpath level.

Details of the landscaped area are not sufficiently developed at this stage to provide complete details.

3.5 Hard stand

The levels of the hard stand areas will be set so that overland flow paths lead to the cross overs on Penny Place. The Penny Place cross overs will have a grated trench drain that will discharge to an

adjacent pit and then to a standard Adelaide City Council steel channel with steel floor plate lid at footpath level.

3.6 Quality of discharge

The storm water from the apartments will be directly discharged to Nelson Street.

The storm water from the Townhouses will be directly discharged to Penny Place.

The storm water from the landscaped area will be treated to remove contaminants.

The storm water from the hard stands will be directly discharged to Nelson Street, There is no car parking on the hard stand areas.

4.0 Summary

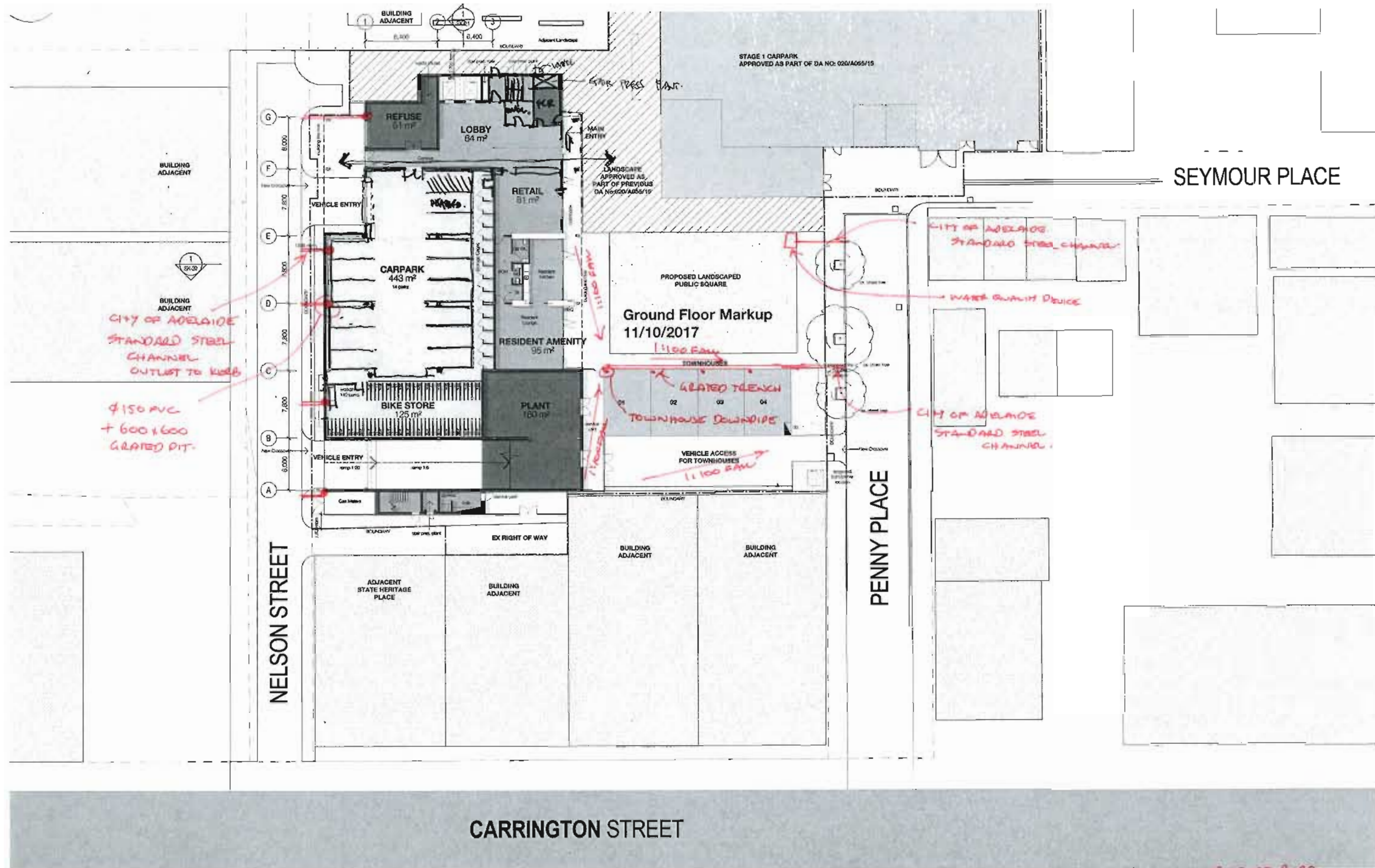
The discharge rates and volumes from the proposed development are less than the pre-development flows.

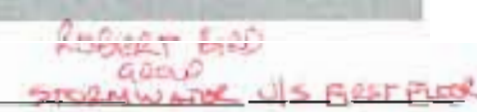
The water quality will be improved from the current pre-development discharge from the car parking areas.

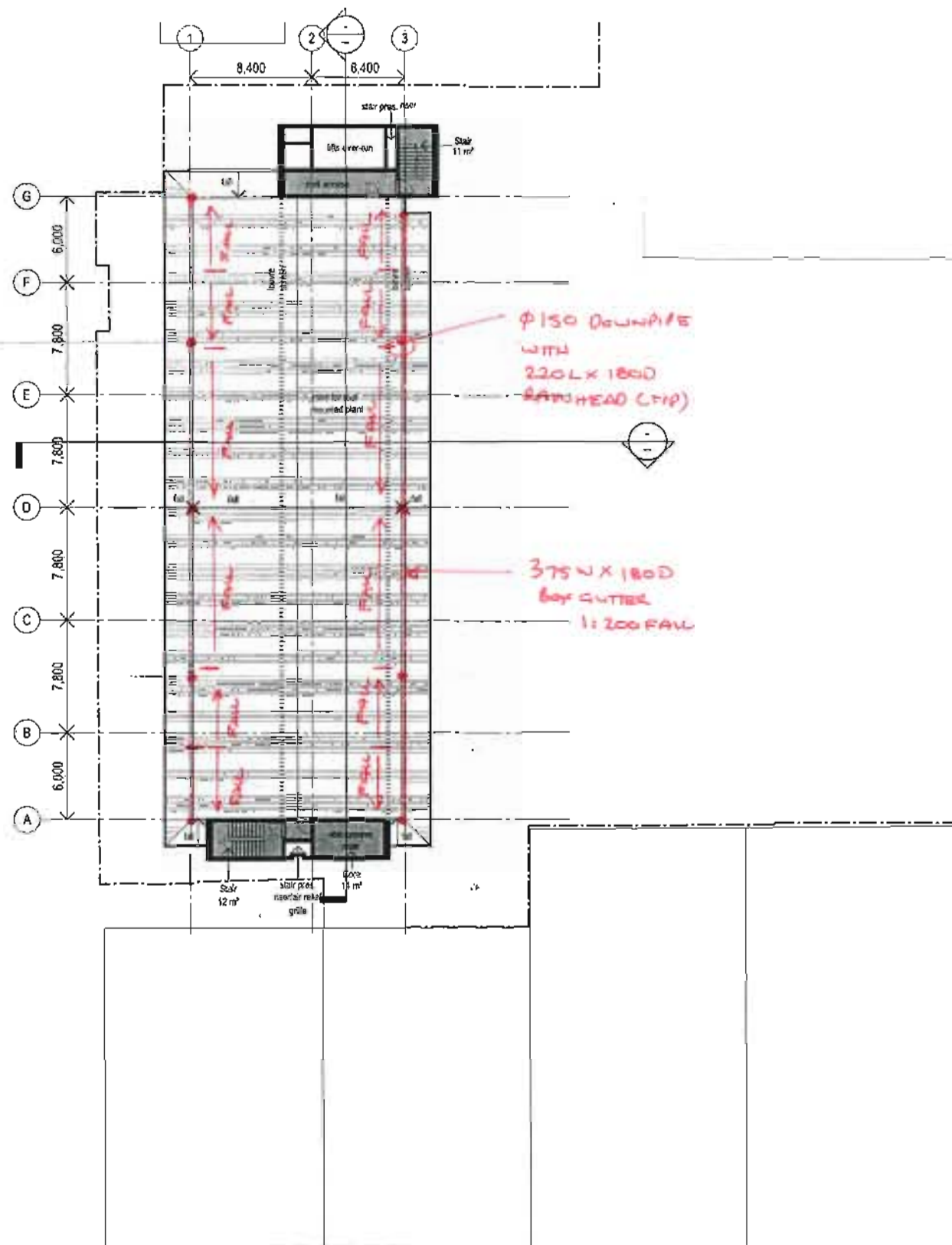
The discharge to the kerb and gutter will be by standard Adelaide City Council steel channels as there is no storm water infrastructure in Nelson Street or Penny Place.

Appendix A

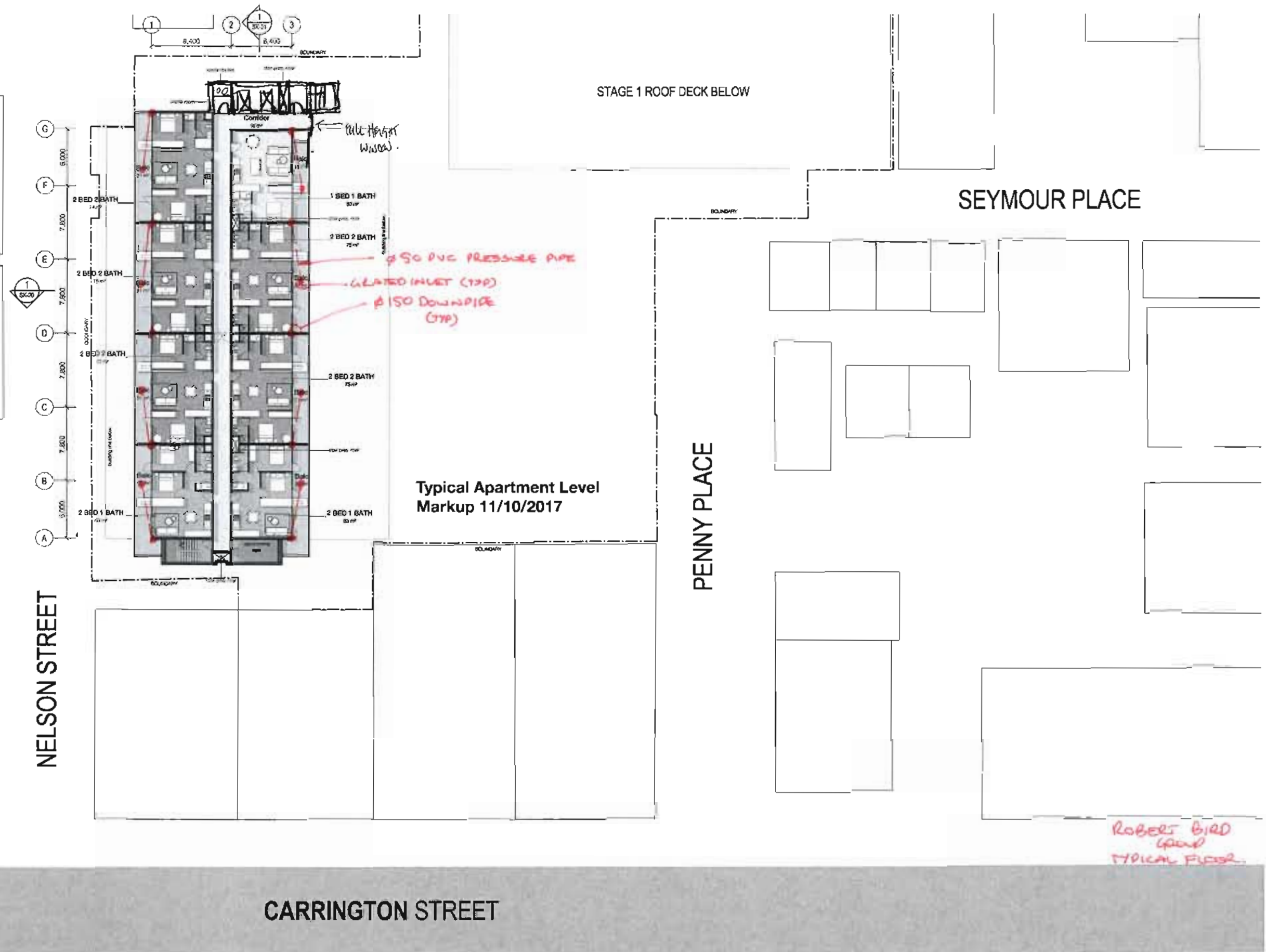
Drawings







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ROOF STORMWATER





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Waste Management Plan

Proposed Development:

Penny Place Stage 2 (Adelaide)

Prepared for: Intro Design & Woods Bagot

FINAL

26 October 2017

- IMPORTANT NOTES-

This document has been prepared by Colby Industries for a specific purpose and client (as named in this document) and is intended to be used solely for that purpose by that client.

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Document verification

Description	Waste Management Plan for Penny Place Stage 2 (Adelaide)		
Version	FINAL		
Issued	25 October 2017		
Verification	Prepared by	Checked by	Approved by
Name	C. Colby	Clients/Woods Bagot/Intro	C Colby
Signature			

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1 Introduction

This document provides a waste management plan (WMP) to support planning approval for the proposed development (Development): Penny Place Stage 2, between Nelson St and Penny Place off Carrington St in the City of Adelaide (see Figure 3-1 overleaf). The Development is in the Adelaide City Council area (Council).

The WMP describes the waste management system (WMS) proposed for the Development, and explains how the WMS will manage waste to achieve regulatory and design objectives. The content of the WMP is aligned to that recommended by the South Australian Better Practice Guide – Waste Management in Residential or Mixed-Use Developments (Zero Waste SA, 2014) (viz. Appendix D).

2 Status of this document

This WMP is based on most recent building plans and information provided by the Project Architect (see Table 3-1 below). It may need to be updated if the design for the Development is changed.

3 Development

3.1 Developer (& project design team)

The table below provides the name and contact details for the Developer and relevant members of the project design team.

Table 3-1: Developer & relevant project design team members

Developer:	Premier Capital Development (C/O Intro Design – see below)
Architect:	Woods Bagot (11 Waymouth St, Adelaide SA 5000)
Planner:	Intro Design (11/44 Waymouth St, Adelaide SA 5000)
Traffic Engineer:	GTA Consultants (Level 1 136 The Parade, Norwood SA 5067)

3.2 Land use details

The Development is Stage 2 of an existing development – see Figure 3-1 overleaf. Stage 1, a mixed-use multi-storey residential building, has previously been approved and is already under construction. The Stage 2 site is approximately 2,637m² in area and will comprise:

- **Apartment Building** – Multi-storey (21 level) apartment building (facing onto Nelson St), which will include:
 - 17 residential levels with 136 apartments;
 - 4 car parking levels;
 - Ground level with access lobby, car parking, retail tenancy, residential amenity area, and building services' areas.
- **Townhouses** – Separate building (adjacent to Penny Place) with 4 (3-bedroom) townhouses; and
- **Public Square** – A 270m² landscaped public square.

Table 3-2 two pages overleaf summarizes the expected Development metrics by Land Use based on data and Building Plans (dated 27 October 2017) provided by the Project Architect.

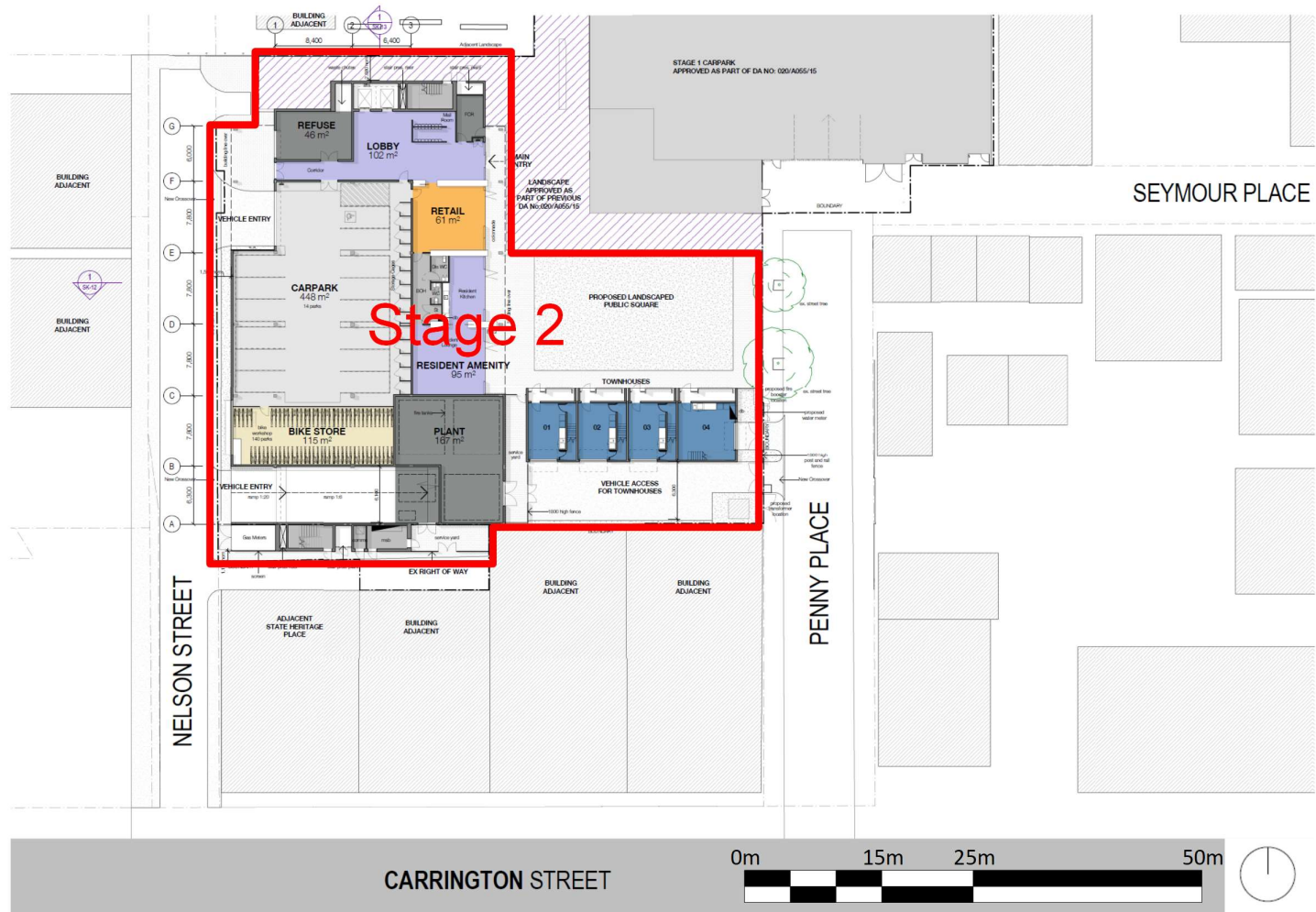


Figure 3-1: Ground Level site plan for the Development. Reproduced from plans provided by Project Architect, dated 27 October 2017

Table 3-2: Development metrics – summary

Land Use	Location	Activity	WRGR Description*	Development Metric(s)	
Residential	Apartment Building	Apartment Living	High Density Residential Dwelling	136	Dwellings
				255	Bedrooms
		Residential Amenity: Kitchen & Lounge	Hotel or Motel - Dining Areas	60	m2 (Dining Area only)
	Townhouses	Residential Living	High Density Residential Dwelling	4	Dwellings
				12	Bedrooms
Commercial	Apartment Building, Ground Level	Retail	Retail < 100m2	61	m ² GFA^
Public Areas	Apartment Building, Ground Level	Access Lobby	Showrooms	102	m ² GFA
	Public Square	Public Place (exc. Garden Maintenance)		270	m ² GFA
	Other Public Areas	Various other Building Access Areas, Pedestrian Paths, etc.		150	m ² GFA (provision)

* Per WRGR classifications in State Guide (Zero Waste SA, 2014)

^ This is the part of this area where dining may occur, which is used for design purposes

4 Design assumptions

4.1 Regulatory, Policy &/or Planning considerations

Development of the proposed waste management system (WMS) in this WMP has considered:

- The South Australian Environment Protection (Waste to Resources) Policy 2010 (W2REPP) (Government of South Australia, 2011), e.g.
 - *Waste must subject to resource recovery processes, which can include source separation, before disposal to landfill.*
 - *A weekly collection of general waste from residential premises is expected.*
- Adelaide (City) Development Plan (DPTI, 20 June 2017), which includes requirements for waste management in new developments, e.g.
 - *Medium to High Scale Residential/Serviced Apartment:*
 - *80 Site facilities should be readily accessible to each dwelling/serviced apartment ... and should include: areas for the storage and collection ... of refuse and waste including facilities to enable the separation of recyclable materials as appropriate to the size and nature of the development and screened from public view.*
 - *94 To ensure minimal disturbance to residents: ... movement of private waste bins should not occur: (i) after 10.00pm; and (ii) before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.*
 - *Waste Management:*
 - *101 A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.*
 - *103 Development greater than 2 000 square metres of total floor area should manage waste by:*
 - (a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;*
 - (b) on-site storage and management of waste;*
 - (c) disposal of non-recyclable waste;*
- Adelaide City Council, Waste and Recycling Services, Operating Guideline (Adelaide City Council, 30 July 2014), which:
 - *Outlines out the availability of Council's newly introduced Residential Waste Management Service (RWMS) – High Density and Mixed Use.*
- South Australian Better Practice Guide – Waste Management in Residential or Mixed-Use Developments (Zero Waste SA, 2014), which:
 - *Provides guidance on expected design and operation of waste management systems for medium to high density residential and mixed-use developments.*

4.2 Stakeholder consultation

A meeting (on 12 September 2017) was held with the Project Architect to identify market and end-user requirements or preferences for the Waste Management System (WMS) in the Development.

A site meeting was held (on 19 September 2016) with Project Architect and Traffic Engineer, to review proposed waste collection access arrangements. This review included considering the opportunity for Council collection of residential waste from the Apartment Building using Council's newly introduced bulk bin collection services for high-density developments: Residential Waste Management Service (RWMS) – High Density and Mixed Use (Adelaide City Council, 30 July 2014).

Following this meeting, proposed collection access arrangements were drawn up and submitted to Council by email (Colby Industries, 20 September 2017), to confirm whether Council could provide waste collection services to the apartment building. A positive response to this request from Council's Coordinator – Operations Support & Waste Management (Bland, 25 September 2017) was received.

4.3 Collection services

Based on stakeholder consultation, collection services at the Development would be delivered by:

- **Council –**
 - **Apartment Building** – Residential (Apartment-derived) waste & recycling (Bulk bin collection service + Hard Waste collection)
 - **Townhouses** – Residential waste & recycling (Standard kerbside collection + Hard waste collection)
- **Private / Commercial Contractor**
 - Apartment Building –
 - Retail tenancy waste & recycling
 - Public place waste & recycling
 - Residential Amenity Area waste & recycling

4.4 Design & operating provisions

The following site design and /or operational requirements or provisions for waste management at the Development were identified based on Stakeholder Consultation and Regulatory, Policy &/or Planning considerations.

- **Apartments Building:**
 - **Residential Apartments –**
 - Routine Services provided:
 - General waste
 - Comingled recycling
 - Food waste
 - Local disposal
 - 2×waste chutes, one with e-diverter (for General Waste / Recycling)
 - General waste and Recycling chutes would be fitted with a chute compactor¹ to reduce waste volume
 - Waste Storage – Ground Level waste storage area
 - Presentation (for Council collection) – in above Waste storage area
 - Collection – Council bulk bin service, on-property parking, access via Nelson St
 - Bin washing – Temporary area on site
 - Hard waste – Council at-call collection (per their service for Residential sites with 7 or more dwellings²)

¹ The compaction ratios (based on gross volume) would be: General waste – Min. 2.5×; Recycling – 1.5× (lower value to minimise glass breakage and fines during resource recovery and identical to Council collection truck compaction ratio)

² See: <http://www.cityofadelaide.com.au/city-living/home-property-management/waste-recycling/hard-refuse/>

- **Residential Amenity area –**
 - Local disposal bins & waste storage – MGBs for:
 - General waste
 - Comingled recycling
 - Food waste
 - Collection – Commercial contractor, pull-in pull-out service
- **Public place areas** (e.g. Lobby, access corridors, other public place bins) –
 - Local Disposal – General waste bins only
 - Waste Storage – Separate bulk bin, co-located in main waste storage area with above residential bins
 - Collection – Commercial contractor, pull-in pull-out service
- **Retail tenancy**
 - Services – General Waste & Recycling (inc. Paper & Cardboard)
 - Local Disposal & Waste Storage – located in-tenancy
 - Collection – Commercial contractor, pull-in pull-out service
- **Townhouses –**
 - Council Service – Standard Council kerbside collection
 - Local Disposal & Waste Storage – Council standard bin set
 - General waste – 140L MGB
 - Comingled recycling – 240L MGB
 - Food waste – 240L MGB (unless smaller, e.g. 140L MGB, available)
 - Presentation – Kerbside, Penny Place
- **Public Square –**
 - Local Disposal – General waste only
 - Waste Storage – to Residential Apartment Public place bulk bin, co-located in Residential Waste Storage Area
 - Collection – Commercial contractor, pull-in pull-out service

5 Waste Management System

5.1 Services

Table 5-1 below summarizes the proposed waste and recycling collection services to the Development. They are classified into different service categories, which determine how they will be provided:

- **Routine** - Picked up on a regular basis (e.g. weekly, fortnightly, etc.)
- **On-Call** – Collected only when required (or as needed by calling in a waste contractor)
- **External Drop-off** – Residents or tenants can take these waste/recyclable materials to an external drop off point (e.g. printer cartridges can be dropped off at an Officeworks store)
- **Maintenance Services** – The waste materials may be collected and disposed of by maintenance staff (e.g. lighting, sanitary, etc.)

Table 5-1: Proposed services for Development

Service Type	Apartment Building				Townhouses	Public Square
	Residential Apartments	Residential Amenity Area	Retail tenancy	Public Place		
Routine (regularly scheduled)	<ul style="list-style-type: none">General WasteRecyclingFood Waste		<ul style="list-style-type: none">General WasteRecycling / Paper	<ul style="list-style-type: none">General Waste	<ul style="list-style-type: none">General WasteRecyclingFood Waste	<ul style="list-style-type: none">General Waste
On-call (as needed)	<ul style="list-style-type: none">Hard/E-waste (Council)	<ul style="list-style-type: none">Hard-waste (Commercial)			<ul style="list-style-type: none">Hard/E-waste (Council)	<ul style="list-style-type: none">Hard-waste (Commercial)
Maintenance (waste removed by contractor)	<ul style="list-style-type: none">Lighting (where applicable)Sanitary (for public/commercial ablutions where present)					<ul style="list-style-type: none">Lighting (where applicable)Garden Waste
External (by resident/tenant off-site)	<ul style="list-style-type: none">LightingPrinter CartridgesBatteries					

5.2 Sizing (generation volumes)

Table 5-2 overleaf summarizes estimated (uncompacted) waste and recycling volumes for different land uses in Litres/week.

- These volumes are based on generation rates recommended by the South Australian Better Practice Guide (SABPG) – Waste Management in Residential or Mixed-Use Developments (Zero Waste SA, 2014), assuming the most relevant ‘Land Use Activity’ Classification (viz. Appendix C).
- The waste and recycling volumes for the Kitchen Amenity Area are assumed to be a component of the volumes that would ordinarily be generated by Residents in their Apartments (i.e. included in their WRGR).
- Volumes for Sanitary waste, Lighting waste, Printer Cartridge/Battery waste are not able to be estimated (NE) as no metrics are readily available for this purpose. Volumes for these items, however, will be small relative to other waste / recycling services, and as these are supported by maintenance services or via external drop-off, no on-site storage is required.
- The volume of garden waste generation from the Public Square was not estimated, this will be a maintenance service by external contractor(s) that will take away the waste for off-site disposal; and hence, no separate on-site waste storage provision is required.

Table 5-2: Estimated waste & recycling volumes (in uncompacted Litres/week)

Waste / Recycling Service	Apartment Building				Townhouses	Public Square
	Residential Apartments	Residential Amenity Area	Retail tenancy	Public Place		
	L/week	L/week	L/week	L/week	L/week	L/week
General Waste	7650		190	930	360	990
Recyclables	6380		90		300	
Food Waste	2550				120	
Garden Waste	Not applicable: Maintenance Service, Nil on-site storage needed					NE: Maintenance Service^
Hard waste	1785		4.0	10	84	10
E-waste	319		0.7	4	15	4
Sanitary	NE: Maintenance Service^					
Lighting waste	NE: External Drop-off^					
Printer Cartridges/Batteries	NE: External Drop-off^					
TOTAL	18684		285	943	879	1004

^ These services do not require separate on-site storage, volumes are not estimated (NE)

5.3 Storage & Presentation

Key waste storage (and presentation) areas at the Development are listed below. All are located at Ground Level and marked in Figure 5-1 overleaf. Figure 5-2 and Figure 5-3 two pages overleaf provided more detailed concept layouts for the Apartment Building and Townhouse storage and/or presentation areas, respectively. These detailed concept layouts illustrate potential arrangements and bin configurations in each of these (key waste storage and presentation) areas, to demonstrate that recommended number of bins and other equipment and/or infrastructure can be accommodated. Table 5-3 three pages over includes a Site Schedule that identifies recommended bins to store waste / recycling in each of these areas (for Routine Services) based on proposed collection frequencies.

- **Apartment Buildings Residential waste chute and bin storage – refer Figure 5-2**

- Bin storage for waste / recycling from apartment waste chutes, with provision for:
 - General waste (compacted) – 3×1,100L skip bins
 - Recycling (partially compacted) – 4×1,100L skip bins
 - Food waste – 4× 660L skip bins
- Discharge area for apartment waste chutes with one bin each underneath
- Storage of 1×1,100L bin for Public Place waste

- **Retail tenancy waste storage – refer Figure 5-2**

- In-tenancy bin storage for:
 - General waste – 1×240L MGB
 - Recycling – 1×240L MGB
 - Spare area – for other waste/recycling items if needed

- **Kitchen Amenity waste storage – refer Figure 5-2**

- Local bin storage in this area for:
 - General waste – 2×240L MGBs
 - Recycling – 2×240L MGBs
 - Food waste – 1×240L MGB

{Cont. three pages over}

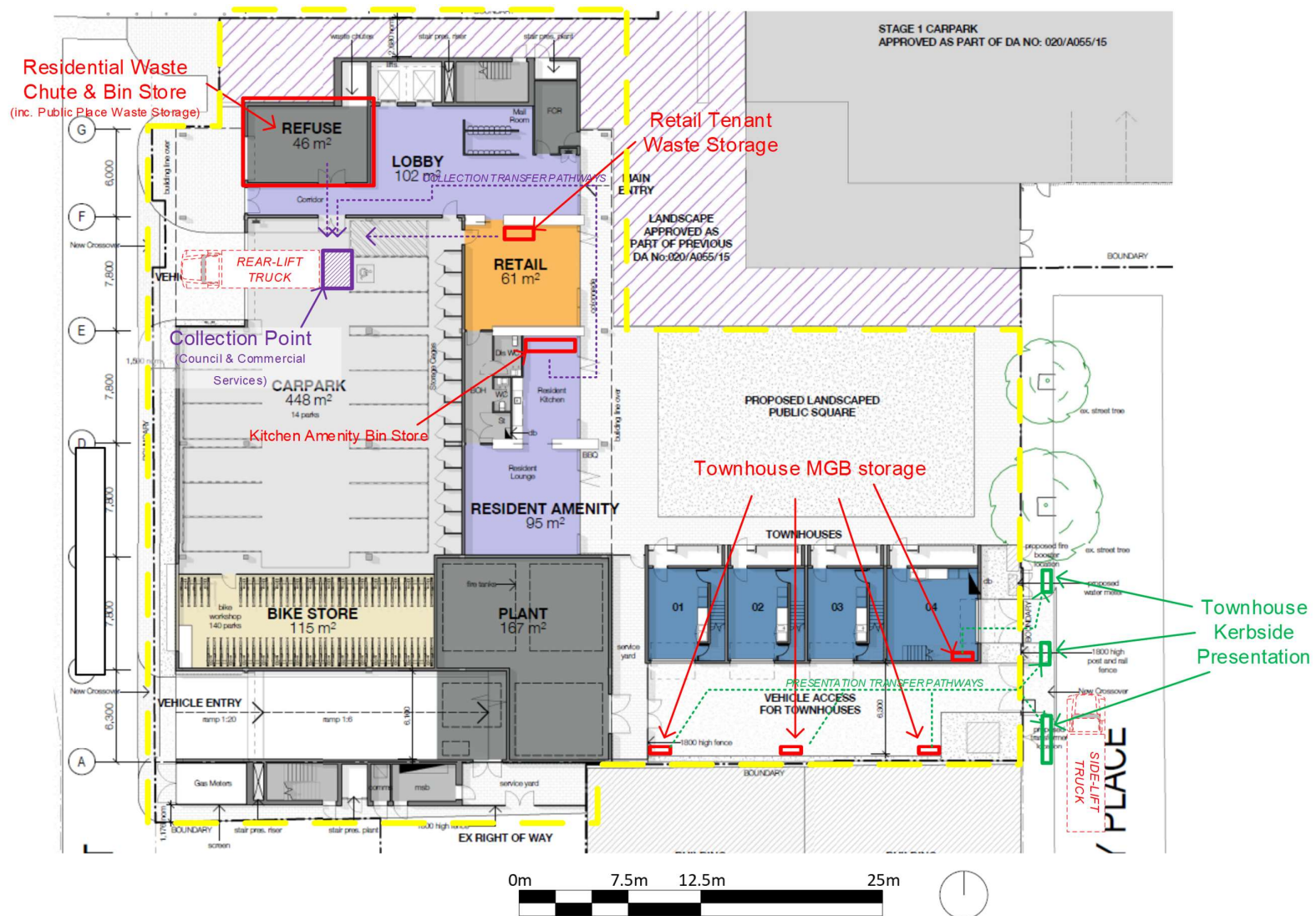


Figure 5-1: Locations of Waste Storage Areas, presentation areas and/or collection points and transfer pathways at Ground Level across the Development– Concept only

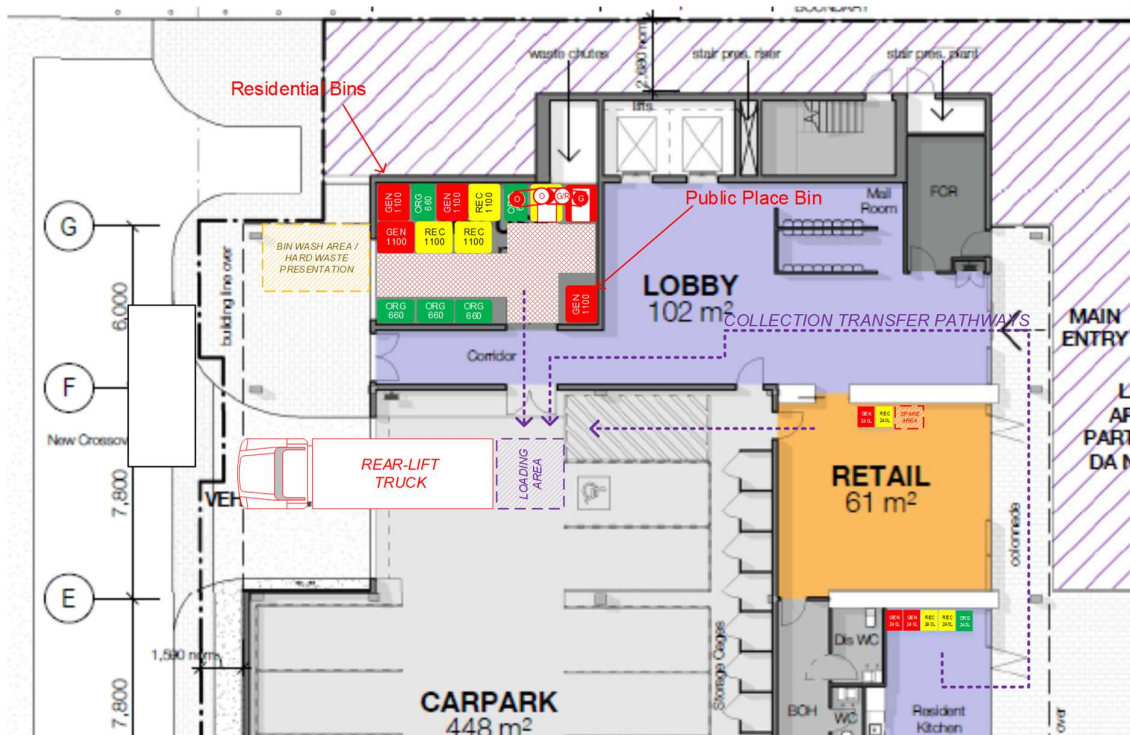


Figure 5-2: Apartment Building Residential, Retail, Kitchen Amenity and Public Place Waste Storage areas – Concept only

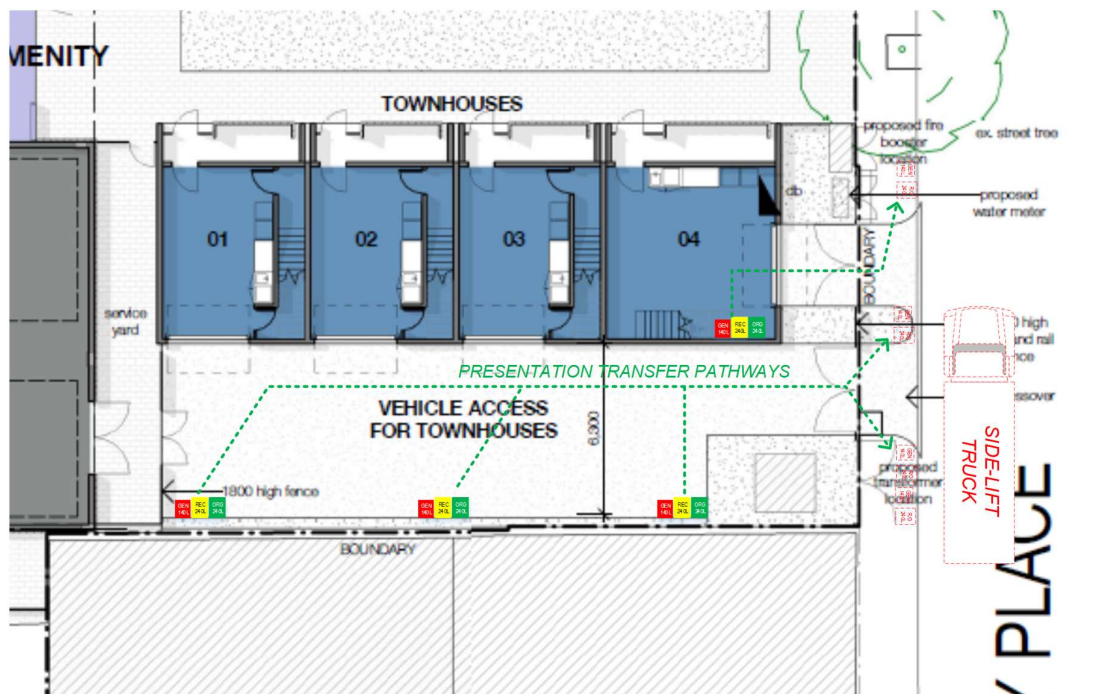


Figure 5-3: Townhouse Waste Storage and kerbside presentation areas – Concept only

- **Townhouse waste storage – refer Figure 5-3**
 - External or in-garage storage of Council standard kerbside bin set by each townhouse:
 - General waste – 1×140L MGB
 - Recycling – 1×240L MGB
 - Food waste – 1×240L MGB
- **Apartment Building (temporary) hard waste presentation area – refer Figure 5-2**
 - External temporary on-site presentation area (just outside waste room roller door) that can be cordoned off when in use.
- **Townhouse (temporary) hard waste presentation areas – refer Figure 5-3**
 - These would be kerbside areas on front of development on Penny Place (as negotiated and confirmed with Council when these townhouses become operational).

Table 5-3: Routine Services – Summary of waste volumes, collection service provider, and number of bins stored and collected. Note: Volumes for General Waste and Recycling in Apartment Building – Residential take into account compaction (by chute compactors)

Land Use	Storage Location	Service	Volume (estimated) (L/week)	Provider	Bins Collected (up to, per event)			Frequency
Apartment Buildings - Residential	Residential Waste Chute Discharge & Storage Room	General Waste (compacted)	2754	Council (Rear-lift / Bulk bin)	3	1,100	L Skip	Weekly
		Recyclables (partially compacted)	3828		4	1,100	L Skip	
		Food Waste	2295		4	660	L Skip	
Public Place - Apartment Building & Public Square		General Waste	1920		1	1,100	L Skip	Twice Weekly
Apartment Building - Residential Amenity Area	Residential Amenity Area	General Waste	765	Private / Commercial	2	240	L MGB	Twice Weekly
		Recyclables	638		2	240	L MGB	
		Food Waste	255		1	240	L MGB	
Apartment Building - Retail tenancy	Retail Tenancy	General Waste	190		1	240	L MGB	Weekly
		Recyclables	90		1	240	L MGB	
Townhouses - Residential	External Car Parking Area or Garage	General Waste	360	Council (Standard Kerbside Service)	4	140	L MGB	Weekly
		Recyclables	300		4	240	L MGB	Fortnightly
		Food Waste	120		4	240	L MGB	Fortnightly

5.4 Operation

5.4.1 Routine services

The following sections summarise operation by each land use activity of the proposed WMS for Routine Services.

5.4.1.1 Apartment Building – Apartments

Residents would be provided with kitchen bins, e.g. see Figure 5-4 below:

- a) General waste bin – at least 20L in size
- b) Commingled recycling waste bin - at least 40L in size
- c) Food organics bin (as specified or otherwise agreed with Council)



Figure 5-4: Examples of waste and recycling kitchen bins suggested by Council (Adelaide City Council, 2016)

These bins would be equipped with handles allowing easy carriage by residents from their apartments to a local disposal room with chute access disposal points on each (residential) level – see Figure 5-5 overleaf:

- General waste / Recycling – Dual-selector chute (see Figure 5-6 overleaf)
- Organics – Standard chute for Organics

Waste and recycling (disposed into chutes) would discharge into bins located in the Residential Waste Chute and Waste Storage Room at Ground level (see Figure 5-2).

This system would be equipped with level monitoring of bins, and when full, an alert would be sent (e.g. by SMS, email) to Property Management. Property Management would then swap full bins under chutes with an empty from the adjacent bin storage area.

On designated collection days (as agreed with Council), Council's waste contractor would collect full bins from the waste storage room, take them to the collection point (in the adjacent Ground Level car parking area, per Figure 5-1), empty the bins, then return them to the waste storage room. Property Management would provide Council's waste contractor with a key or code for access to the waste storage room for this purpose.

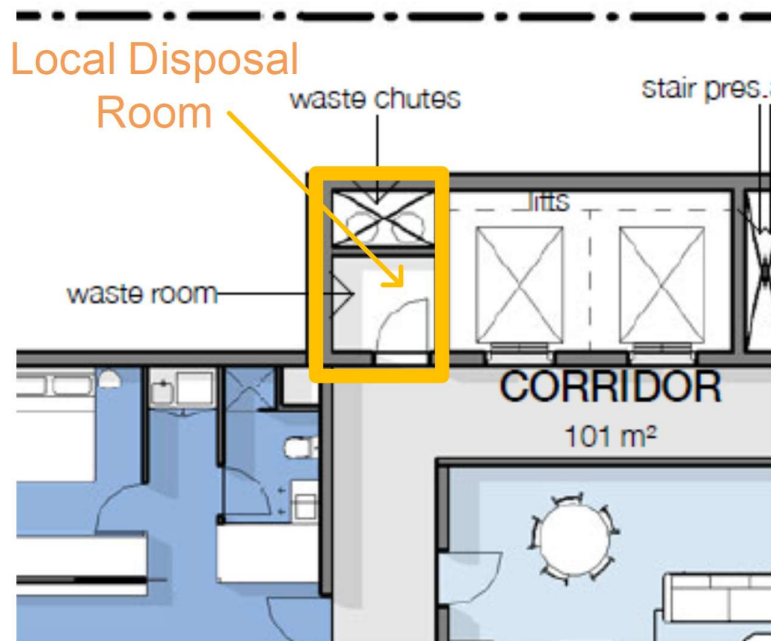


Figure 5-5: Example of Local disposal room on each level (at Northern end of main corridor) for Apartment residents, with access to chute disposal points (1×Dual-selector chute for General waste / Recycling, 1×standard chute for Organics). Source: Plans provided by Project Architect (dated 27 October 2017). NTS



Figure 5-6: Example of e-diverter disposal access point in Residential local disposal rooms for waste / recycling disposal on residential levels. Source: <http://www.elephantsfoot.com.au/products/chutes/waste-and-recycling-diverter>

5.4.1.2 Apartment Building – Retail tenant

The Retail tenant would install local waste/recycling bins suitable for their purposes, to be decided at time of tenancy fit-out. The Retail tenant would dispose of waste and recycling from these local bins into 240L waste or recycling MGB in its in-tenancy waste storage area (see Figure 5-2). A private / commercial waste contractor would (on designated collection days) collect these bins (pull-in, pull-out service) from the in-tenancy waste storage area, take them to the collection point (in the Ground Level car parking area, per Figure 5-1), empty the bins, then return them to the in-tenancy waste storage area.

5.4.1.3 Apartment Building – Resident Amenity area

The Resident Amenity area would have its own set of MGBs installed locally (e.g. see Figure 5-2). Residents using the kitchen or lounge area would dispose their waste or recycling directly to these bins. A private / commercial waste contractor would (on designated collection days) collect these MGBs (pull-in, pull-out service) from this local waste storage area, take them to the collection point (in the Ground Level car parking area, per Figure 5-1), empty the bins, then return them to the local waste storage area.

5.4.1.4 Townhouses – Residential dwellings

Like the Apartment residents, the townhouse residents will have kitchen bins (e.g. see Figure 5-4). They will carry these bins to the (on-property) storage location for their own Council supplied bin sets (i.e. see Figure 5-3) to empty/dispose of their waste and/or recycling.

The storage locations for these bin sets will be in the car parking access area for three of these townhouses, the other townhouse will have its bin set located in its garage (see Figure 5-3).

On Council's standard kerbside collection days for Penny Place, townhouse residents will transfer the relevant bins to the kerbside presentation area on the road verge (see Figure 5-3). A Council kerbside collection service will empty the presented bins, after which the townhouse residents will retrieve the bins and return them to their (on-property) storage location.

5.4.1.5 Public Place Areas – Apartment Building & Public Square

There will be an appropriate number of general waste bins (e.g. 80L, bag lined) at suitable locations in these public place areas.

Cleaners and/or service staff engaged by Property Management will regularly (e.g. daily, very second day) inspect these bins, and if sufficiently full (or old), remove the bagged waste, and take and dispose of the bagged waste to the public place bin in the Residential Waste Chute and Waste Storage Room at Ground level (see Figure 5-2)

5.4.2 On-call

5.4.2.1 Hard waste/E waste – Apartment Residents

Apartment residents can access the Council hard waste service available to Residential sites with 7 or more dwellings: <http://www.cityofadelaide.com.au/city-living/home-property-management/waste-recycling/hard-refuse/>. Under this service:

- The property can access up to 12 collections per site per calendar year; and
- Bookings by residents would be made by the Property Manager (on behalf of The Body Corporate) to coordinate these collections.

A temporary hard waste area (multipurposed with bin wash area) adjacent to Nelson St and outside the Residential Waste Chute and Waste Storage Room has been provided for residents to present hard waste during these collection events (see Figure 5-2).

Property Management will supervise the presentation of hard waste during these collection events. This will include ensuring that:

- Residents adhere to Council's Hard Waste Collection Guidelines;
- Items are only presented on or the day before the collection event is scheduled; and
- A temporary cordon is erected around the presentation area.

The Building User Manual for Apartment residents would include advice on availability and booking these Hard /E-waste collection services.

5.4.2.2 Hard waste/E waste – Townhouse Residents

Townhouse residents can access the standard Council hard waste service available to City residents: <http://www.cityofadelaide.com.au/city-living/home-property-management/waste-recycling/hard-refuse/>. Under this service:

- Each household can book two (2) free collections per calendar year; and
- Bookings are made directly with Council's waste contractor via the contact number provided on Council's Web site.

The Building User Manual for the Townhouse residents would include advice on availability and booking these Hard /E-waste collection services.

5.4.2.3 Hard waste/E waste – All other Land Use Activities

The Retail tenant and Property Management (for hard waste from Public Place and Kitchen Amenity areas) will organise their own at-call hard waste collection services using a private contractor direct from their premises or location of the hard waste in the Development.

The private contractor's hard waste collection vehicle would use the collection point in the Apartment Building Ground Level car parking area (per Figure 5-1).

The Building User Manual for the Retail tenant would include advice on availability and booking these Hard /E-waste collection services.

5.4.2.4 Sanitary – Public toilets

The Development will have some public toilets, including those provided at Ground Level near the Retail tenancy (see Figure 5-2), which will have sanitary waste disposal receptacle. These services are usually provided by a specialist contractor with smaller collection vehicle. The contractor would use the collection point in the Apartment Building Ground Level car parking area (per Figure 5-2). This service would be coordinated by Property Management and is likely to be regularly scheduled (e.g. weekly collection).

5.4.3 External

Residents and tenants would be able to dispose of smaller waste items, such as printer cartridges, batteries and lighting, to publicly available external drop off points, which accept these materials.

The retail tenant may have their own on-site storage for these item (e.g. in the in-tenancy spare waste storage area allocated per Figure 5-2).

The Building User Manual for residents and tenants would include advice on external drop-off points for these items.

5.4.4 Maintenance

Commercial and/or residential areas would generate waste from maintenance activities (e.g. lighting, repair work, etc.). These waste materials would be handled and disposed of by the contractor undertaking these services. This includes garden waste from public areas at the Development. [Dedicated on-site storage for these waste materials is therefore not needed.]

5.5 Collection

5.5.1 Collection access

Apartment Building – Waste collection trucks (Council and private contractor) would use the collection point in the Ground Level car parking area (per Figure 5-2).

Townhouses – Council's waste collection vehicles would access kerbside presentation areas using Penny Place (per Figure 5-3).

5.5.2 Collection vehicles

Table 5-4 overleaf summarizes the type and size of collection trucks for collecting waste and/or recycling at the Development.

- **Apartment Building** – Dimensions for rear-lift and pan-tech/skip/flat-bed trucks in Table 5-3 allow for Council and typical private contractor rear-lift and hard waste collection trucks.
 - The clearance available in the Ground Level car parking area is a minimum of 3.8m (per Elevations in the Plans provided by the Project Architect (dated 27 October 2017)).
 - All trucks used by Council or private / commercial collection services would have travel and operating heights $\leq 3.7\text{m}$, and thus, can operate within this 3.8m clearance.
 - The Traffic Engineer has prepared swept path drawings for up to 10m waste collection vehicles, demonstrating that they will be able to reverse into the Ground level parking area from Nelson St, then exit in forward direction back onto Nelson St.
 - This modelling is presented in their Traffic Report (GTA Consultants, 26 October 2017).
- **Townhouses** – Table 5-3 gives the typical sizing of Council's side-lifting vehicles used for kerbside collection service to the townhouses.
 - These trucks would be operating in Penny Place when lifting the bins so there is practical constraint on the operating (overhead) clearance when lifting bins.
 - *Note: Council already delivers kerbside collection services to Penny Place.*

The Property Manager would confirm with Council and waste contractors when organizing services that their collection trucks are able to meet the access arrangements that have been provided for. Council has already confirmed they will support rear-lift and hard waste collection services to residents in the Apartment Building per the above arrangements (Bland, 25 September 2017).

Table 5-4: Typical dimensions and clearance requirements for largest waste trucks suitable at this development

Type of Vehicle	Rear-lift truck (Council or Private Contractor)	Pan-tech/skip/ flat-bed truck (Council or Private Contractor)	Council Side-lifting Truck – Townhouse kerbside collection
Vehicle Dimensions	3.5-3.7m (h) x 2.7m (w) x 8.2-10m (l) (final dimensions depend on waste contractor and/or truck selection)	≤3.7m (h) x 2.7m (w) x 8-10m (l) (final dimensions depend on waste contractor and/or truck selection)	Up to 4 m (h) x 3.3m (w) x Up to 10m (l) (final dimensions depend on truck selection)
Vehicle turning circle	18-25m (depending on truck selection)	15 -25m (depending on truck selection)	16-20m (depending on truck selection)
Travel/Access provisions:	See Vehicle Dimensions above Vertical Clearance: 3.5-3.7m (depending on truck selection)	See Vehicle Dimensions above Vertical Clearance: <3.9 m (depending on truck selection)	See Vehicle Dimensions above Vertical Clearance: 4 m (depending on truck selection)
Operating provisions (when parked & loading)	Parking Space Length: 10-12m Vertical Clearance: Up to 3.7m (depending on truck selection & allowing for rear loading)	Parking Space Length: 10-14m Vertical Clearance: Up to 3.7m (depending on truck selection & allowing for waste loading)	Vertical Clearance: Allow up to 5.8m (depending on truck selection)

5.5.3 Collection Frequency

Table 5-3 (on page 14) summarizes collections required for the main Routine/scheduled services to the Development. They include:

- Weekly Council collections via Nelson St to the Apartment Building to pick up residential waste.
- Twice weekly collection by private contractor via Nelson St to the Apartment Building to pick-up:
 - Retail tenancy
 - Public place waste
 - Kitchen amenity waste
- The Council standard kerbside collection services via Penny Place to the townhouses:
 - Weekly general waste collection
 - Alternating fortnightly collection for Recycling and Organic bins

Council would determine the days and timing of their bulk bin collection services to the Apartment Building and kerbside collection services to townhouses.

Property Management would organise the other private waste collection services to the Apartment Building. These would be coordinated to minimize collection events (i.e. same waste contractor(s), bins collected on same days, etc.)

A potential weekly collection schedule for the above arrangement is illustrated in Table 5-5 overleaf.

- There could be at most 2-3 collection events during a day (and none on other days) across the Development if collection services were optimally scheduled.

In addition, there would be periodic on-call collections for Hard/E-waste.

- There would likely be a monthly Council hard waste collection to the Apartment Building;
- There may be a hard waste collection by Council to the townhouses every 2-3 months; and
- There may be periodic private hard waste collections organised by retail tenant and/or Property Management for other land use activities at the Apartment Building.

Furthermore, there may be regular collections for sanitary waste (e.g. on a weekly basis).

Table 5-5: Example of waste collection scheduling and frequency for Routine Services over typical week

Scheduled Service	Bins Collected		Collection event						
	Location	Frequency	M	T	W	Th	F	S	Su
General waste	Apartment Buildings - Residential	Weekly (Council bulk bin service)	1						
	Apartment Building - Residential Amenity Area	Twice Weekly (Private collection)		1			1		
	Apartment Building - Retail tenancy								
	Public Place - Apartment Building & Public Square								
	Townhouse	Weekly (Council kerbside service)			1				
Recycling/Paper/Cardboard	Apartment Buildings - Residential	Weekly (Council bulk bin service)		1				1	
	Apartment Building - Residential Amenity Area	Twice Weekly (Private collection)							
	Apartment Building - Retail tenancy								
	Townhouse	Fortnightly (Council kerbside service)			1				
Organic waste	Apartment Buildings - Residential	Weekly (Council bulk bin service)					1		
	Apartment Building - Residential Amenity Area	Twice Weekly (Private collection)		1				1	
	Townhouse	Fortnightly (Council kerbside service)			*				
TOTAL			1	3	2	-	2	2	-

* Alternates fortnightly with recycling service

5.5.4 Collection Duration

Routine collection events to the Development may range from 10 to 20 minutes depending on the service being provided, number of waste contractor staff attending, and type and number of bins being collected and where from.

The duration of a Hard waste collection events may be up to 10-30 min depending on type and number of items being loaded and where they need to be collected from.

Sanitary collections may take 5-15 min depending on number of toilets and their locations across the site.

5.5.5 Collection scheduling

Council will determine the scheduling of its collection services to the Development.

For private collection services:

- These should be scheduled to occur outside of peak access hours along Nelson St to minimize associated traffic impacts.

- These collection times should be determined before the building becomes operational based on advice from the Traffic Engineer, in consultation with Council, private waste contractor(s), and other relevant authorities or stakeholders.
- Scheduling of collection should comply with the Environment Protection (Noise) Policy 2007 (South Australian Government, 2008) as well as the rubbish collection requirements of the Local Nuisance and Litter Control Act 2016 (South Australian Government, 2017) (commencing 1 July 2017), to minimise adverse impact on amenity.
- Final scheduling arrangements will be embedded into the waste collection contract agreement(s).

5.6 Transfer pathways

The transfer pathways for the WMS are described in Section 5.4 and relevant collection transfer pathways at Ground Level are also shown on Figure 5-1. The following is provided as a guide for sizing and designing these transfer pathways.

- *Disposal pathways –*
 - *User disposal – less than 30m and free of steps, no grades greater than 1:15, and cater for mobility impaired users.*
 - *Collection – less than 30m with no grades greater than 1:10 with appropriate gutter or kerb ramps at on-street collection point*
- *Corridor widths –*
 - *240L MGBs or smaller bins / loads – min. 900 mm (min. 1,200mm preferred)*
 - *660L or larger skips and/or waste loads – min. 1,500mm*
- *Doors –*
 - *Local disposal access – 800mm*
 - *Transfer pathways– Appropriate to the size of bin to be transported, e.g.*
 - *240L MGB – min. 850mm*
 - *660L skip – min. 1,200mm*
 - *1,100L skip – min 1,500mm*
- *Floors – Hard surfaces where bins and skips are to be carted*
- *Lifts – All lifts should be sized to allow for bulky hard waste items.*

All relevant transfer pathways should be reviewed and confirmed at detailed design stage to ensure they are appropriate.

5.7 Other facility design and operating requirements

5.7.1 Detailed design

The Developer will obtain appropriate engineering advice and design data for waste management equipment and associated infrastructure and building services (e.g. electrical, water, ventilation, transfer pathway surfaces, etc.) from relevant suppliers to finalize design specifications and spatial during building detailed design, to ensure that the WMS can be installed and function and operate as proposed in this WMP. This will include for the following design and operating requirements or outcomes.

5.7.2 Signage

Appropriate signage will be installed in all local waste disposal locations to ensure correct disposal of waste and recyclable materials. These signs will conform to the signage requirements recommended in the South Australian Better Practice Guide – Waste Management in Residential or Mixed-Use Developments (Zero Waste SA, 2014). Council may provide signage for this purpose.

5.7.3 Collection bin design and colours

Colours of bins used for collection to be those normally used by Council or otherwise conform to the Australian Standard for Mobile Waste Containers (AS 4213).

5.7.4 Waste chutes (Apartment Building)

Installation of waste chutes in the Apartment Building will conform to Building Code of Australia (BCA) requirements, including acoustic insulation to minimize noise impacts during operation, and provide for access by water and electrical services required for operation and maintenance (including cleaning) of the dual selector chute.

Waste chutes will include an extraction fan, so the system can operate under negative pressure, and in-situ cleaning system to keep tube surfaces clean.

The chute discharge areas (at Ground Level) will require suitable hard surfaces and installation of drains (to sewer) and grading of floors to capture wash water at the chute discharge points (from periodic chute cleaning).

The waste chutes will be subject to a regular inspection and maintenance schedule to ensure reliable operation.

5.7.5 Automatic Bin Monitoring (Apartment Building)

Automatic bin monitoring will be installed on the chute discharge bins in the Apartment Building to alert Property Management to when bins in the waste chute bin discharge area is full and need to be swapped over, to maximize bin utilization and avoid over-fill of bins.

5.7.6 Bin cleaning

An on-site bin wash area (multi-purposed with temporary hard waste presentation) is proposed (outside the Ground Level Residential Waste Chute and Storage area – see Figure 5-2) for bin washing. This area would have:

- Graded waterproof surface;
- Drain to sewer point with basket screen (which can be isolated when not in use, with rain run-off diverted to stormwater drainage system);
- Adjacent potable water supply with faucet and hose connection;
- 1Ø/240V power supply;
- Adjacent walls lined to water proof; and temporary barriers, curtains or screens that can be erected along other sides during bin wash events.

The Property Manager will be responsible for managing the bin wash area.

The Property Manager will be responsible for cleaning bins in the Apartment Building Residential waste storage area, and may provide this service (e.g. on annual basis, emergency requests) to retail tenant and townhouse residents if requested.

Bin cleaning may be contracted out to an external provider (to perform using the on-site bin wash area or also off-site by temporarily taking the bins away). *Note: This arrangement could be used in place of an on-property bin wash area.*

5.7.7 Vermin, hygiene & odour management

An inspection and cleaning regime will be implemented by Property Manager to ensure that surfaces and floors in the waste storage areas and transfer pathways across the Development are kept clean and hygienic and free of loose waste and recycling materials.

The Property Manager should:

- Surface clean and sanitize the Apartment Building waste storage area every 2-3 months.
- Ensuring that any spillages are cleaned up immediately and sanitized.
- Monitor and routinely clean the Apartment Building waste chutes in line with supplier's instructions and equipment/system provided.

To minimize odours emanating from open bins under the Apartment Building chutes, installation of a fixed or flexible shroud around the chute and above the bins will be considered.

All internal local disposal areas/rooms and waste storage areas at the Development where there will be putrescible matter present in general waste or food waste bins will be equipped with extraction fans, venting to atmosphere, to prevent odour build up. The vent locations will be selected to avoid impact on residents, tenants and/or neighbours. *[Note: The waste chutes can provide negative pressure to waste chute bin discharge rooms and local disposal rooms where chute access points are located.]* These waste storage areas will also be air-conditioned (if needed) to maintain them at moderate temperatures (<25°C) during hot weather conditions, to minimize odours that might be generated by putrescible matter.

5.7.8 Commercial tenants (Apartment Building)

The required site waste management arrangements and waste management practices to comply with this WMP will be specified by Property Management in the commercial lease with the retail tenant.

5.7.9 Handling Peak Periods (Apartment Building)

The Apartment Building WMS for residents and its storage area for waste has been designed to handle typical peak week generation rates of waste and recyclables. However, there may be some periods during the year (e.g. Christmas, Easter), when volumes might potentially exceed these design values. In these situations, additional collections can be scheduled.

5.7.10 Grease trap waste

This liquid waste stream is not considered in this report, and if relevant to the Development, will be addressed separately as part of Building Services assessment.

6 Operation and management

6.1 Management & Operating Responsibility

Property Management will be responsible for managing and operating the WMS for the Development, including liaising with Council to confirm and coordinate bulk bin and hard waste collection services provided for Apartment residents.

6.2 Communication strategy

Provision will be made to provide education and training in use of the WMS to residents and tenants as follows. Council may aid with providing communication advice on waste management for this purpose.

6.2.1 Residents

This will include:

- Waste management advice in residents' Building User Manuals located in each apartment and townhouse;
- First-day training by Property Management when new occupant or tenant arrives (including expected or required waste and recycling management and disposal practices);
- Annual follow-up reminder/refresher notices which may include results of audit/monitoring (if conducted).

6.2.2 Retail tenant

The retail tenant will be provided with similar advice and training about expected waste management requirements. This would include what waste management provisions are included in their lease agreements and/or what they should include in their cleaning and commercial waste collection contracts.

6.2.3 Property Management staff

A separate training and education program for Property Management staff should be undertaken, to ensure that they are able to effectively perform waste management responsibilities, including managing Hard/E-waste and other waste services required at the site.

6.3 Building User Manual

The Building User Manual for residents and tenants will include:

- Roles and responsibilities for residents, tenants, Property Manager and collection contractors
- Instructions for correctly disposing of waste and recycling (including access and correct use of local disposal and waste storage areas, bins and/or disposal points);
- Relevant health and safety advice; and
- Contact information for further information, questions and issues or to report problems and/or issues (including any spills).

6.4 Community/Strata title arrangements

Obligations for residents and/or property owners to comply with requirements for proper waste management (in line with this WMP) will be written into the Community/Strata plan lodged with the Lands Titles Office.

6.5 Emergency response plan

Property Management will develop an emergency response plan to manage waste or related issues at the Development, including for the following specific events.

- Waste chute failure(s)
- Collection service(s) not available

7 References

- Adelaide City Council. (2016, September 27). *Guide to waste & recycling bins*.
- Adelaide City Council. (30 July 2014). *OPERATING GUIDELINE - WASTE AND RECYCLING SERVICES*.
- Bland, D. (25 September 2017). *Email to Chris Colby, Colby Industries: RE: Penny place 2 Waste Management Layout*.
- Colby Industries. (20 September 2017). *Email to D. Bland (Coordinator Operations Support & Waste Management): FW: Penny place 2 Waste Management Layout*.
- DPTI. (20 June 2017). *Adelaide (City) Development Plan (Consolidated)*.
- Government of South Australia. (2011, November 24). *Environment Protection (Waste to Resources) Policy 2010*.
- GTA Consultants. (26 October 2017). *Traffic Report for Penny Place Stage 2 development*.
- South Australian Government. (2008). *Environment Protection (Noise) Policy 2007 under the Environment Protection Act 1993, Version: 31.3.2008*. Retrieved from <http://www.legislation.sa.gov.au/>
- South Australian Government. (2017). *Local Nuisance and Litter Control Act 2016*.
- Zero Waste SA. (2014). *South Australian Better Practice Guide – Waste Management in Residential or Mixed Use Developments*.

Anthony Gatti

From: Chris Colby <chris.colby@colbyindustries.com.au>
Sent: 25 September 2017 09:43
To: Paul Froggatt; Adrian Reveruzzi; Anthony Gatti
Subject: FW: Penny place 2 Waste Management Layout

All,

Please see positive response from David Bland at Council. However, Council traffic and planning may still need to be engaged to confirm.

Thanks, Chris

From: David Bland [mailto:D.Bland@cityofadelaide.com.au]
Sent: Monday, 25 September 2017 9:42 AM
To: Chris Colby <chris.colby@colbyindustries.com.au>
Subject: RE: Penny place 2 Waste Management Layout

Hi Chris

I have reviewed the below and this design can be accommodated with Council Service Delivery.

Regards

David Bland
Coordinator Operations Support & Waste Management
Operational Support
London Road Depot
Adelaide, South Australia, 5000
[TEL: +61882037689](tel:+61882037689)
M. +61427803689
F. +61882037571
E. D.Bland@cityofadelaide.com.au



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From: Chris Colby [<mailto:chris.colby@colbyindustries.com.au>]

Sent: Wednesday, 20 September 2017 3:53 PM

To: David Bland <D.Bland@cityofadelaide.com.au>

Subject: FW: Penny place 2 Waste Management Layout

Hi David,

I have been given permission to follow up with Council on the proposed Development (Stage 2 Penny Place) I briefly mentioned to you last week – see attached Ground Floor Plan.

The suggested waste management system would include – see sketch below:

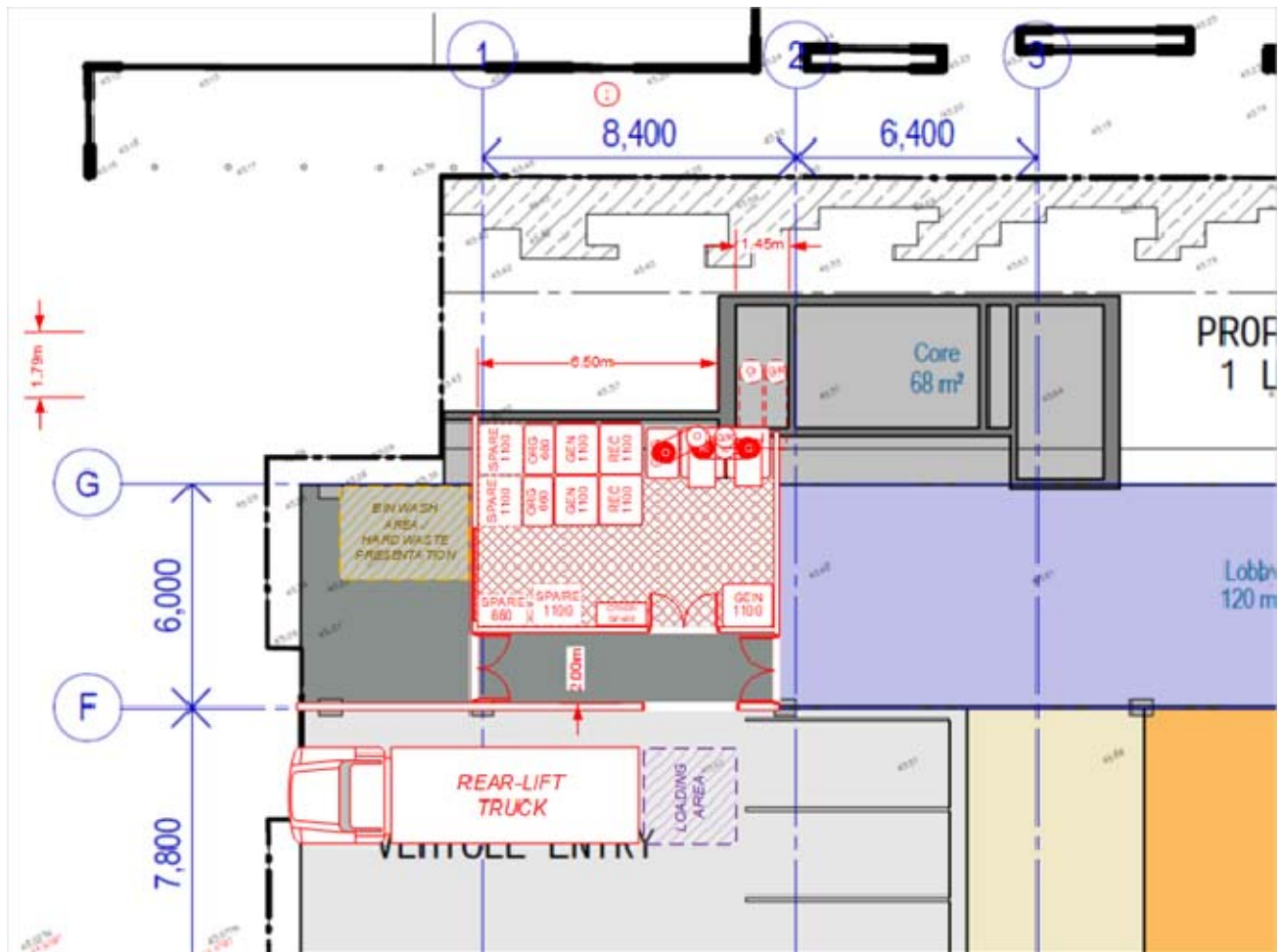
- Truck collection from Ground level car parking area entry area (reverse in, forward out)
 - Swept path modelling has confirmed suitable for 10m Council truck
 - Safeguards to be put in place to enable Council truck to reverse in (from Nelson St), park, then exit in forward direction back onto Nelson St
- Bin room –
 - Ground level, adjacent to above collection point
 - Three-bin equivalent service via chutes (General waste, Recycling, Food waste)
 - Enough bins for weekly collection by Council
- Hard waste – External temporary presentation area to support monthly collection by Council

Can you please give me your thoughts on whether this concept would be suitable for a Council service, specifically:

- Would Council be okay with the proposed on-property collection area?
- Can the Council contractor perform the turning manoeuvre from Nelson St using the Ground level parking area entry so long as:
 - Enough space can be demonstrated (by swept path modelling);
 - Potential impacts on vehicular access to and from the parking area during collection events can be minimized; and
 - Safeguards (e.g. warning lights, sirens, on truck and /or in parking area) are present or can be put in place to ensure the reversing action from Nelson St into this area can be performed safely.

If we can accommodate this site, it would add another future property to support the new Council rear-lift service.

Thanks, Chris



8. NCC SECTION J AND NATHERS

8.1 INTRODUCTION

This section provides Section J advice in relation to building fabric and glazing performance requirements for the Penny Place 2 development located in Adelaide.

To comply with Section J of the NCC, the following is required:

- The ground floor retail spaces of the development must demonstrate compliance with Section J, Parts J0 – J3; and
- All apartments within the building must achieve a minimum 5 Star NatHERS rating and an average rating across the development of 6 Stars.

The analysis outlined below is based on architectural preliminary drawing set by Woods Bagot Revision B dated 26/09/2017. The relevant NCC climate zone for the project is climate zone 5. The analysis is based on the Section J Parts J1 and J2 requirements of NCC 2016.

This analysis covers the following NCC Sections: J1 – Building Fabric and J2 – Glazing only. The Building Fabric performance properties documented in this memorandum must be adhered to in order to satisfy the Performance Requirements of the NCC. Additionally, the application of Section J1.2 – General and Section J3 Building Sealing still needs to be met as it is not covered by this analysis.

8.2 LIMITATIONS

- This report covers the following NCC Sections: J1 – Building Fabric and J2 – Glazing only. The application of Section J1.2 – General and Section J3 Building Sealing still needs to be met as it is not covered by this report.
 - Whole-of-Window (WoW) system (including glass and framing) performance varies with manufacturers thus further information should be sought from the manufacturer/contractor to ensure the performance properties are met.
 - The performance results outlined in this report are valid only under the assumptions outlined. As such any variations to the design will render the outcomes of this report invalid.
-

8.3 NCC SECTION J

8.3.1 GROUND FLOOR RETAIL

This section details the Part J1 and J2 requirements for the non-residential conditioned spaces on the ground.

1.1.1.1 *Part J1 – BUILDING FABRIC TO RETAIL*

To meet the DTS requirements for building fabric, all roofs, walls, and floors which form part of the building envelope for the conditioned non-residential spaces of the development are required to meet the performance parameters where applicable:

BUILDING ELEMENT (FURTHER DETAIL IN APPENDIX A)	TOTAL R-VALUE FOR CONSTRUCTION
External Walls	R2.8
Internal wall between a conditioned and non conditioned space	R1.8
Ceilings with non-conditioned spaces above (e.g. car park)	R2.0

1.1.1.2 PART J2 – GLAZING TO RETAIL

In order to meet DTS requirements for glazing, the development must pass the NCC Volume 1 Glazing Calculator for the vertical glazing refer Appendix B. The following glazing achieves compliance with the glazing calculator for the ground level conditioned areas, based on the glazing extent detailed in Appendix B and assuming one glazing type for all retail glazing:

- **U-value:** $\leq 6.0 \text{ W/m}^2\text{K}$
- **SHGC:** ≤ 0.38

8.4 NATHERS

8.4.1 APARTMENTS L4 – L20

This section details the NATHERS building fabric and glazing requirements for the residential floors of the building.

1.1.1.3 SOFTWARE

Software package FirstRate5 has been used to determine the building fabric and glazing requirements for the building in order to achieve the targeted NatHERS ratings. FirstRate5 models have been built for 24 apartments in the development, selected to represent both typical and worst case apartment types.



Figure 1 - Example screenshots of FirstRate5 models for the development (L15)

1.1.1.4 MODELLING PARAMETERS

The following parameters have been used in the modelling:

- External walls – 200mm concrete + **bulk insulation of R2.0** + 10mm plasterboard
- Internal walls internal partitions – plasterboard 10mm + 66mm air gap + 10mm plasterboard
- Internal walls apartment boundary (e.g. shared with corridors) – 10mm plasterboard + concrete 200mm + 10mm plasterboard

- Roofs – flat framed (metal deck) + **bulk insulation of R3.5**
- Floors above unconditioned/external spaces (e.g. carpark) - suspended slab + **bulk insulation of R2.0**
- Adjoining walls between apartments – 10mm plasterboard + concrete 200mm + 10mm plasterboard
- Windows – weather-stripped, with the following system properties (i.e. including frames):
 - Total system **U-value: $\leq 3.5 \text{ W/m}^2\text{K}$** (requires double glazing)
 - Total system **SHGC: $0.33 \pm 5 \%$**
- All external doors have been modelled as weather-stripped
- Floor coverings:
 - living/kitchen – floorboards
 - bedrooms – carpet
 - laundry/bathrooms – tiles
- All laundries, kitchens and bathrooms have been modelled with 1 sealed exhaust vent
- No vented downlights have been modelled

Further detail regarding the extent of insulation required can be found in Appendix A.

1.1.1.5 RESULTS

A summary of the results is provided in the following table:

LEVEL	LEVEL 4	LEVELS 5 TO 19	LEVEL 20
Number of level's	1	15	1
App. 01	5.9	6.6	5.9
App. 02	6.1	6.9	6.2
App. 03	5.9	6.6	6
App. 04	6.2	6.8	6.2
App. 05	6.3	7.2	6.5
App. 06	6.3	7.1	6.4
App. 07	5.4	6.1	5.5
App. 08	5.9	6.8	6.1
Min	5.4		
Average	6.7		
Max	7.2		

As shown in the table above, with the inputs outlined in this memo, all apartment types modelled meet the required minimum rating of 5 Stars and an average rating of greater than 6 Stars.

1.1.1.6 DESKTOP STUDY – SGU

A desktop study has been undertaken on the worst performing apartment to understand the relationship between the glazing to wall ratio and the required glazing performance to achieve the required energy rating. This desktop study

indicated that if the glazing to wall ratio was reduced by approximately 20% the glazing performance could be reduced to the following performance criteria.

- Total system **U-value**: $\leq 4.9 \text{ W/m}^2\text{K}$ (equivalent to Viridian ComfortPlus™ Clear 82 6.38mm)
- Total system **SHGC**: $0.46 \pm 5 \%$

We note that detailed modelling on any updated plans is required to verify the actual glazing performance required for compliance.

9. APPENDIX A – NCC SECTION J1 AND NATHERS MARKUPS

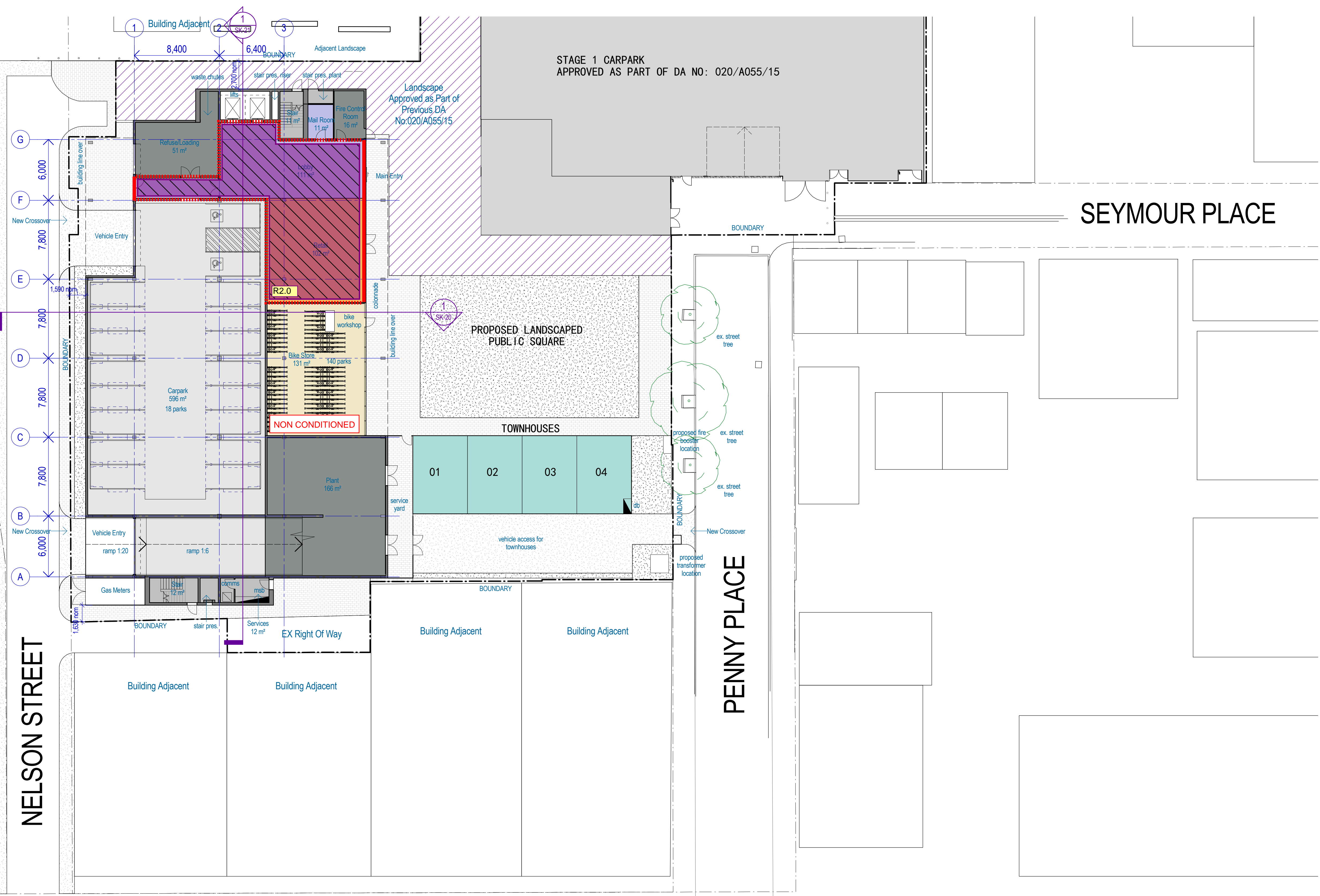
Zone 5

Walls Legend:

- R2.8** Minimum wall total r-value
- R1.8** Minimum wall total r-value
- R2.0** Bulk insulation in wall

Floor/Ceiling Legend:

- R2.0** Bulk insulation to floor
- R2.0** Minimum ceiling total r-value
- R3.0** Bulk insulation to roof



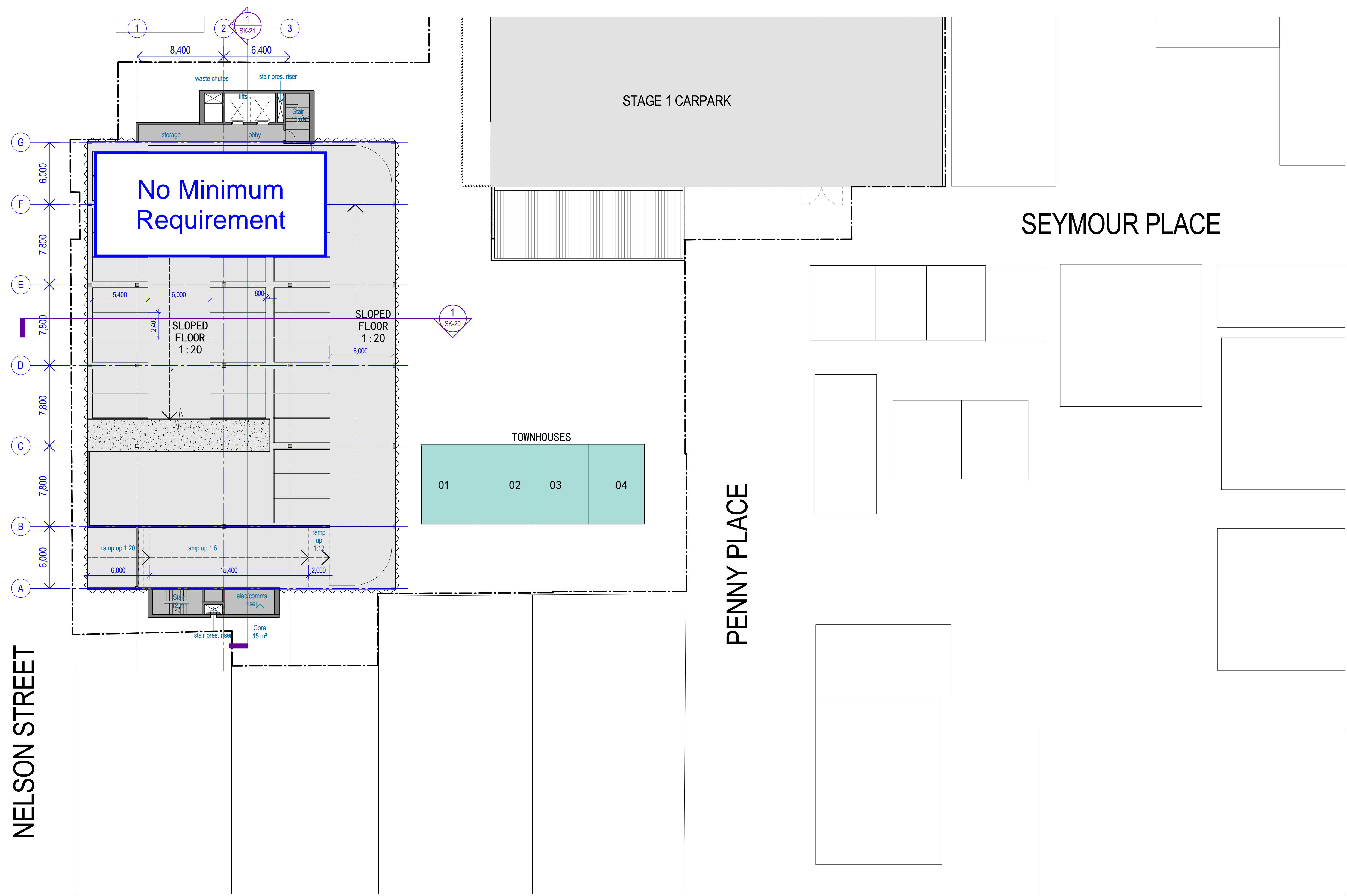
Zone 5

Walls Legend:

- Minimum wall total r-value
- Minimum wall total r-value
- Bulk insulation in wall

Floor/Ceiling Legend:

- Bulk insulation to floor
- Minimum ceiling total r-value
- Bulk insulation to roof



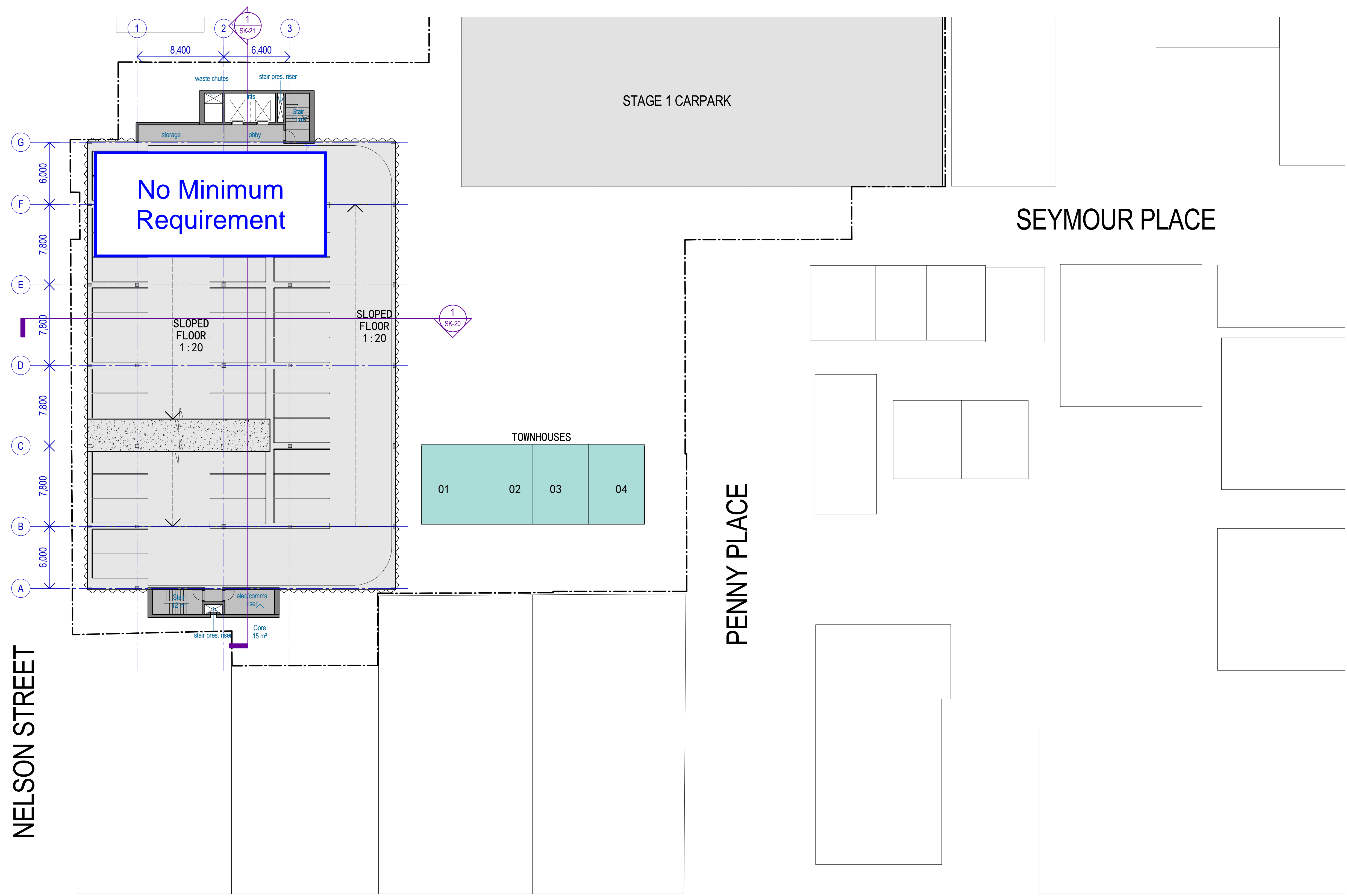
Zone 5

Walls Legend:

- Minimum wall total r-value
- Minimum wall total r-value
- Bulk insulation in wall

Floor/Ceiling Legend:

- Bulk insulation to floor
- Minimum ceiling total r-value
- Bulk insulation to roof



NELSON STREET

PENNY PLACE

CARRINGTON STREET

SEYMOUR PLACE

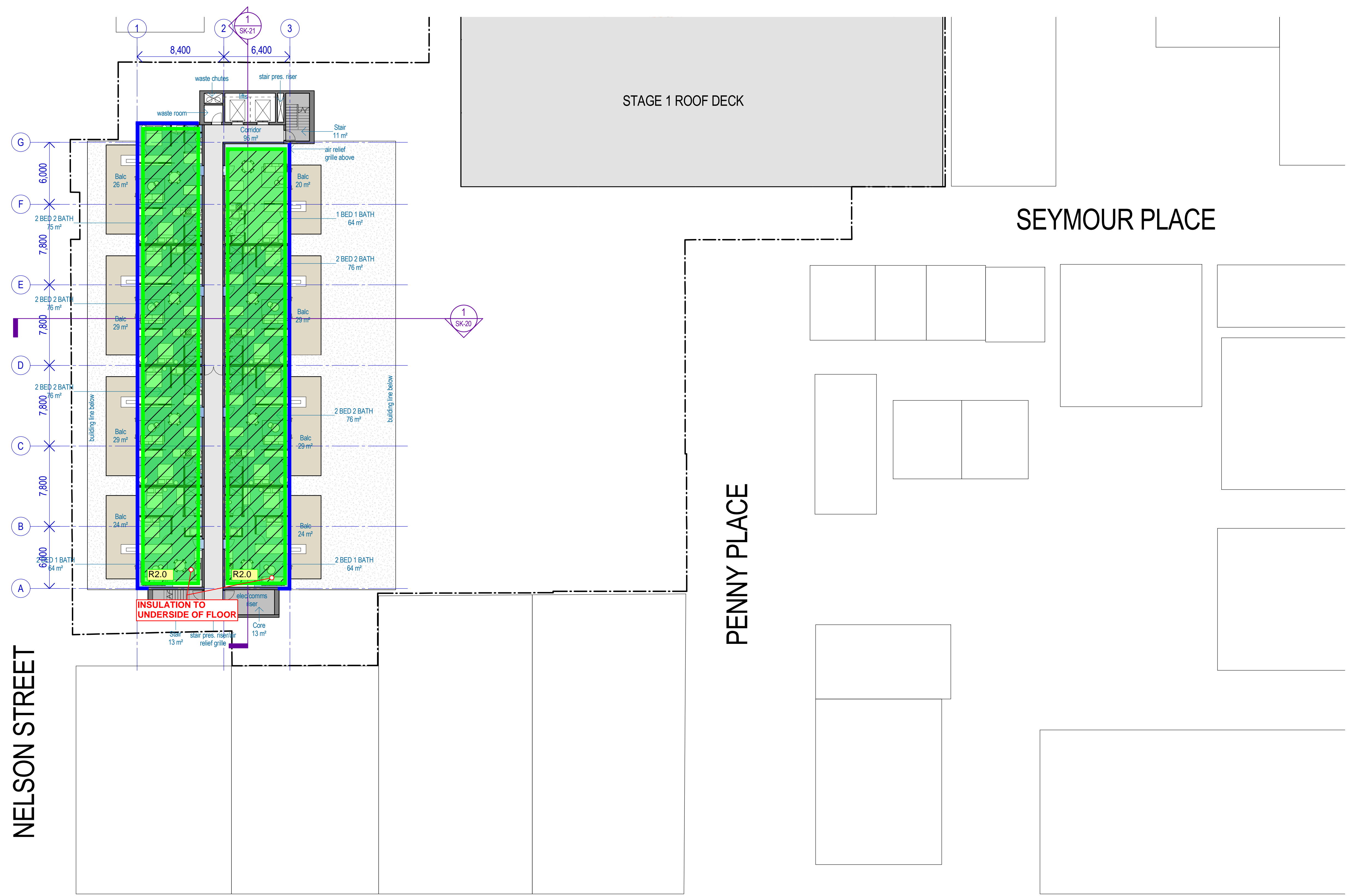
Zone 5

Walls Legend:

- R2.8** Minimum wall total r-value
- R1.8** Minimum wall total r-value
- R2.0** Bulk insulation in wall

Floor/Ceiling Legend:

- R2.0** Bulk insulation to floor
- R2.0** Minimum ceiling total r-value
- R3.0** Bulk insulation to roof



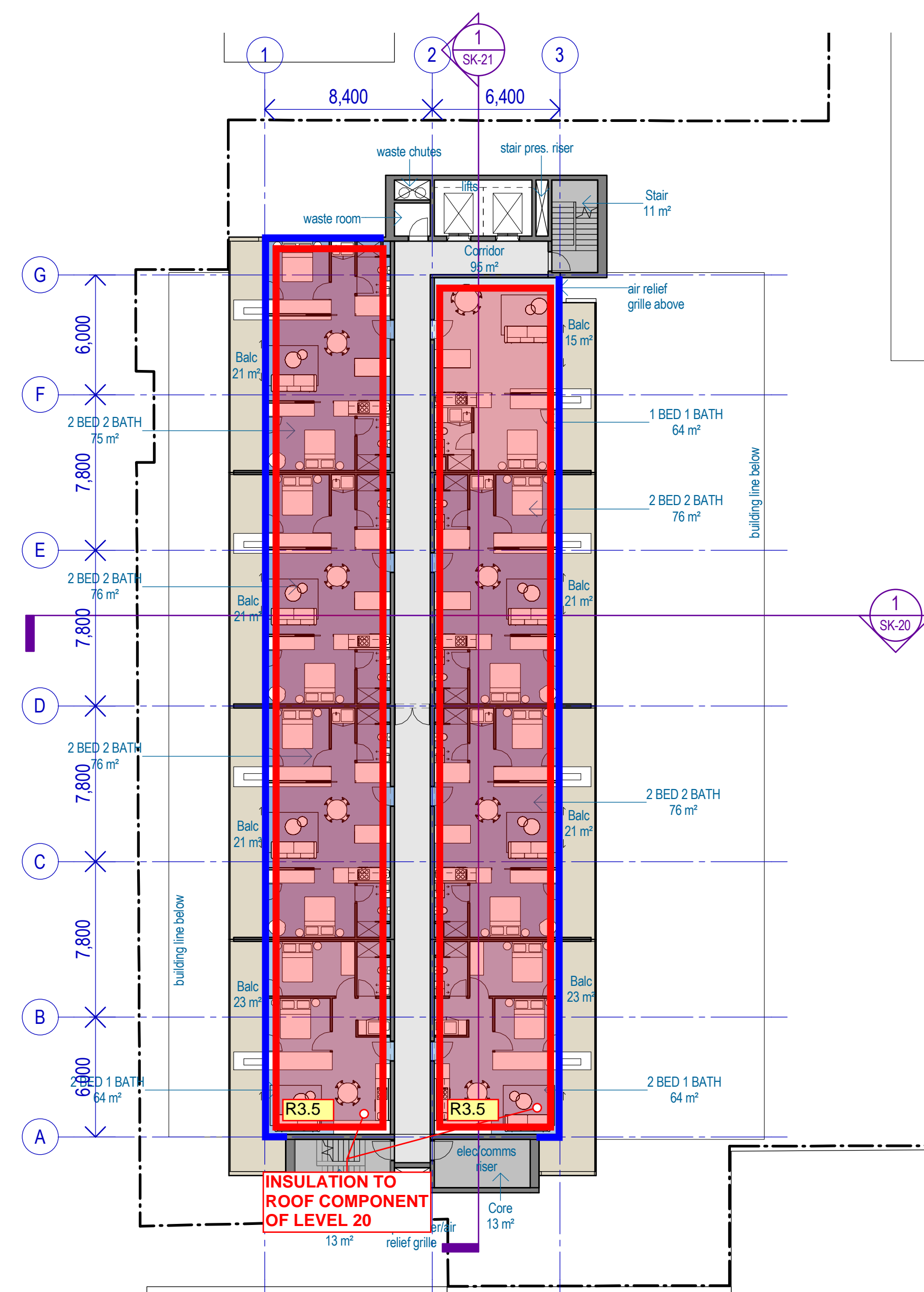
Zone 5

Walls Legend:

- R2.8** Minimum wall total r-value
- R1.8** Minimum wall total r-value
- R2.0** Bulk insulation in wall

Floor/Ceiling Legend:

- R2.0** Bulk insulation to floor
- R2.0** Minimum ceiling total r-value
- R3.5** Bulk insulation to roof



STAGE 1 ROOF DECK BELOW

10. APPENDIX B – NCC SECTION J2 GLAZING CALCULATOR AND MARKUPS

NCC VOLUME ONE GLAZING CALCULATOR (first issued with NCC 2014)

Building name/description

Penny Place 2

Application

shop display

Climate zone

5

Storey

1

Facade areas

N	NE	E	SE	S	SW	W	NW	internal
		48m ²						
								n/a

Option A

Option B

Glazing area (A) 43.2m²

Number of rows preferred in table below

10 (as currently displayed)

GLAZING ELEMENTS, ORIENTATION SECTOR, SIZE and PERFORMANCE CHARACTERISTICS									SHADING		CALCULATED OUTCOMES OK (if inputs are valid)					
Glazing element		Facing sector		Size			Performance		P&H or device		Shading		Multipliers		Size	Outcomes
ID	Description (optional)	Option A facades	Option B facades	Height (m)	Width (m)	Area (m ²)	Total System U-Value (AFRC)	Total System SHGC (AFRC)	P (m)	H (m)	P/H	G (m)	Heating (S _H)	Cooling (S _C)	Area used (m ²)	Element share of % of allowance used
1	Eastern Façade	E		2.70	16.00		6.0	0.38	2.200	3.000	0.73	0.30	0.77	0.67	43.20	100% of 100%
2																
3																
4																
5																
6																
7																
8																
9																
10																

IMPORTANT NOTICE AND DISCLAIMER IN RESPECT OF THE GLAZING CALCULATOR

The Glazing Calculator has been developed by the ABCB to assist in developing a better understanding of glazing energy efficiency parameters.

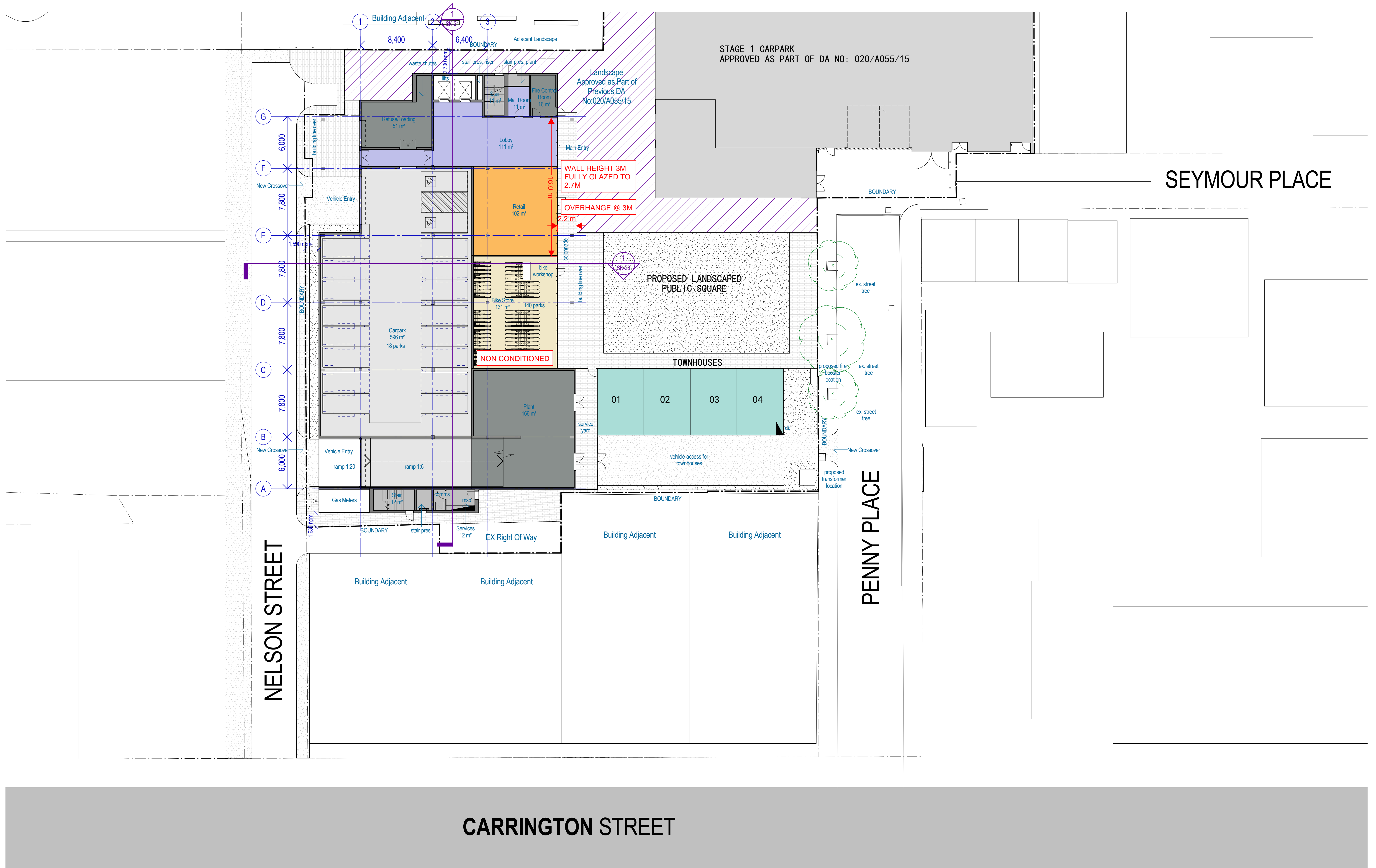
While the ABCB believes that the Glazing Calculator, if used correctly, will produce accurate results, it is provided "as is" and without any representation or warranty of any kind, including that it is fit for any purpose or of merchantable quality, or functions as intended or at all.

Your use of the Glazing Calculator is entirely at your own risk and the ABCB accepts no liability of any kind.

if inputs are valid



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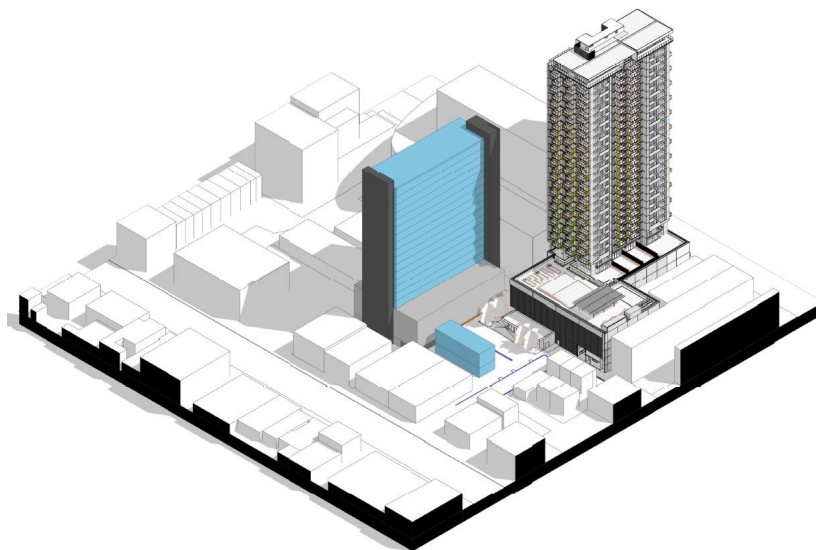
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Vipac Engineers & Scientists

Flagship (Penny Place) Pty Ltd

Penny Place, Adelaide - Stage 2

Wind Impact Assessment



30N-17-0119-TNT-633114-1

20 October 2017



Report Title: Wind Impact Assessment Job Title: Penny Place, Adelaide - Stage 2																	
DOCUMENT NO: 30N-17-0119-TNT-633114-1 PREPARED FOR: Flagship (Penny Place) Pty Ltd Level 29, 140 William Street Melbourne, Victoria, 3000, Australia CONTACT: Natalie Burdon Tel: +61 3 8605 7200 Fax:	REPORT CODE: TNT PREPARED BY: Vipac Engineers and Scientists Limited 279 Normanby Rd, Port Melbourne, VIC 3207, Australia Tel: +61 3 9647 9700 Fax: +61 3 9646 4370																
PREPARED BY: Author: Zhuyun Xu Senior Wind Consultant Date: 20 Oct 2017																	
REVIEWED BY: Reviewer: Sophie Lamande Wind Group Leader Date: 20 Oct 2017																	
AUTHORISED BY: Date: 20 Oct 2017 Sophie Lamande Wind Group Leader																	
REVISION HISTORY <table border="1"><thead><tr><th>Revision No.</th><th>Date Issued</th><th>Reason/Comments</th></tr></thead><tbody><tr><td>0</td><td>04/10/2017</td><td>Initial Issue</td></tr><tr><td>1</td><td>12/10/2017</td><td>Drawings updated</td></tr><tr><td>2</td><td></td><td></td></tr><tr><td>3</td><td></td><td></td></tr></tbody></table>			Revision No.	Date Issued	Reason/Comments	0	04/10/2017	Initial Issue	1	12/10/2017	Drawings updated	2			3		
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EXECUTIVE SUMMARY

Flagship (Penny Place) Pty Ltd commissioned Vipac Engineers and Scientists Ltd to prepare a statement of wind effects for the ground level areas adjacent to the proposed development at **Penny Place, Adelaide – Stage 2**. This appraisal is based on Vipac's experience as a wind-engineering consultancy.

The updated drawings of the proposed development were provided by **Woods Bagot** in **Oct 2017**. The findings of this study can be summarized as follows:

- The proposed development would not generate wind conditions in excess of the criterion for safety.
- Most of the ground level footpath and building entrances would be expected to have wind conditions within the recommended criteria.
- The two corners on Nelson St are likely to experience elevated wind conditions due to corner acceleration. However, the proposed porous car park walls will reduce wind levels on the ground floor to within the recommended comfort criteria.

As such, Vipac makes no recommendations to alter the building form design for the pedestrian level comfort wind environment.

As a general statement, educating residents about wind conditions at high-level balconies and terrace areas during high-wind event and tying down loose lightweight furniture are highly recommended.

The assessments provided in this report have been made based on experience of similar situations in Adelaide and around the world. As with any opinion, it is possible that an assessment of wind effects based on experience and without experimental validation may not account for complex flow interactions in the vicinity. Vipac recommends a scaled wind tunnel study in the detail design stage to verify the predictions and determine the optimal wind controls, wherever necessary.

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1 INTRODUCTION

Premier Capital Developments Pty Ltd commissioned Vipac Engineers and Scientists Ltd to prepare a statement of wind effects for the ground level areas adjacent to the proposed development at **Penny Place, Adelaide – Stage 2**. This appraisal is based on Vipac’s experience as a wind-engineering consultancy.

The proposed development site is bounded by Nelson St to the west, Penny Pl to the East and the existing buildings to the North and the south (see Figure 1). The Northeast side of the proposed development is the approved 103 m high Stage 1 building.

Stage 2 of the proposed development is a residential and commercial mixed use building. The proposed development has a roof height of 71.6 m and with a 17 m podium. There are townhouses proposed on the east side of the site. The surrounding developments (within 2000 m radius) are medium to high rise towers in the sector from north to northwest and mid to low rise developments plus parklands in all other directions. The immediately adjacent buildings are shown in Figure 2 in a 3D perspective view. Figure 3 presents the west elevation of the proposed development showing the overall heights of the two stages.

This report details the opinion of Vipac as an experienced wind engineering consultancy regarding the wind effects in ground level public areas and access-ways adjacent to the development as proposed. No wind tunnel testing has been carried out for this development at this stage. Vipac has carried out wind tunnel studies on a large number of developments of similar shape and having similar exposure to that of the proposed development. These serve as a valid reference for the prediction of wind effects for this development. Empirical data for typical buildings in boundary layer flows has also been used to estimate likely ground level wind conditions adjacent to the proposed development [2] & [3].

The drawings of the proposed development were provided by **Woods Bagot** in **Oct 2017**.

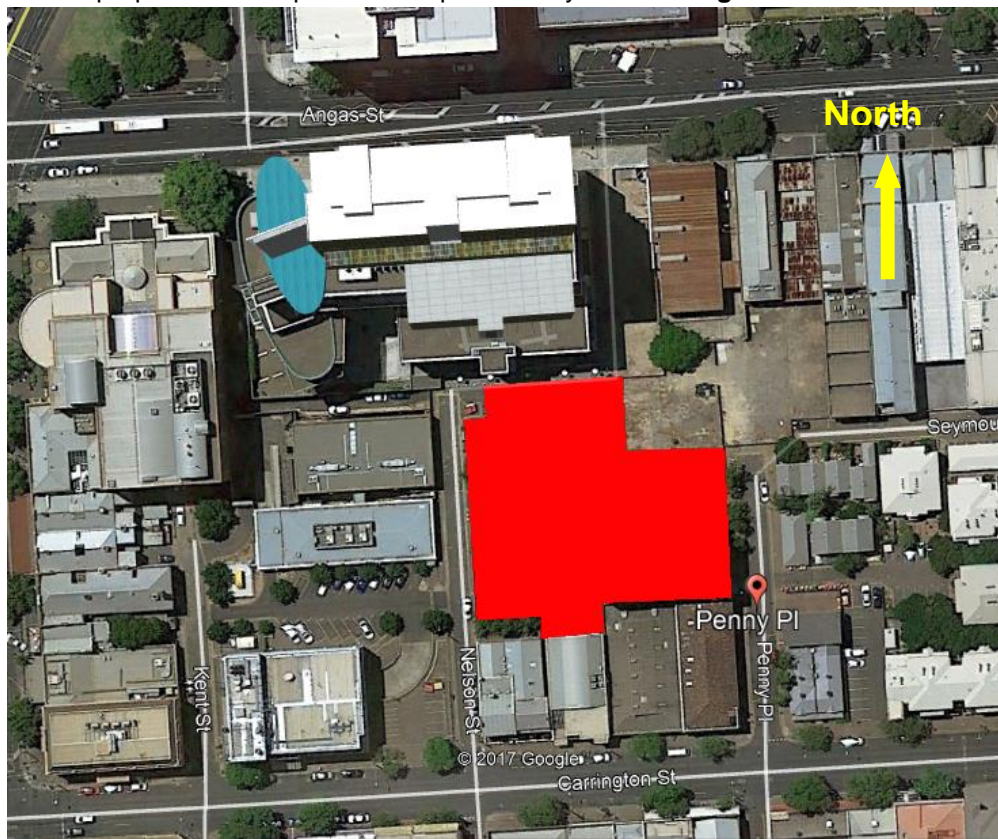


Figure 1: Aerial view of the proposed development site at Penny Place Adelaide – Stage 2.

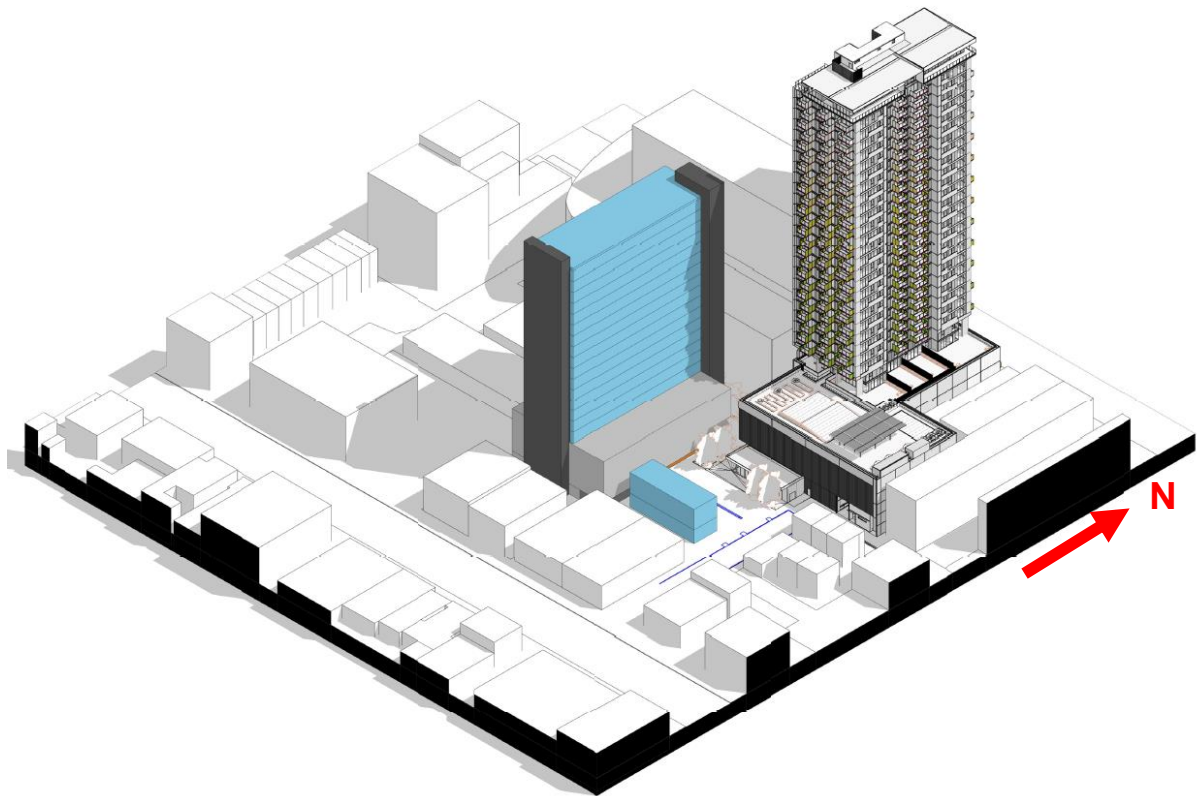


Figure 2: Southeast view illustrating the surrounding buildings of the proposed development site at Penny Place Adelaide – Stage 2.

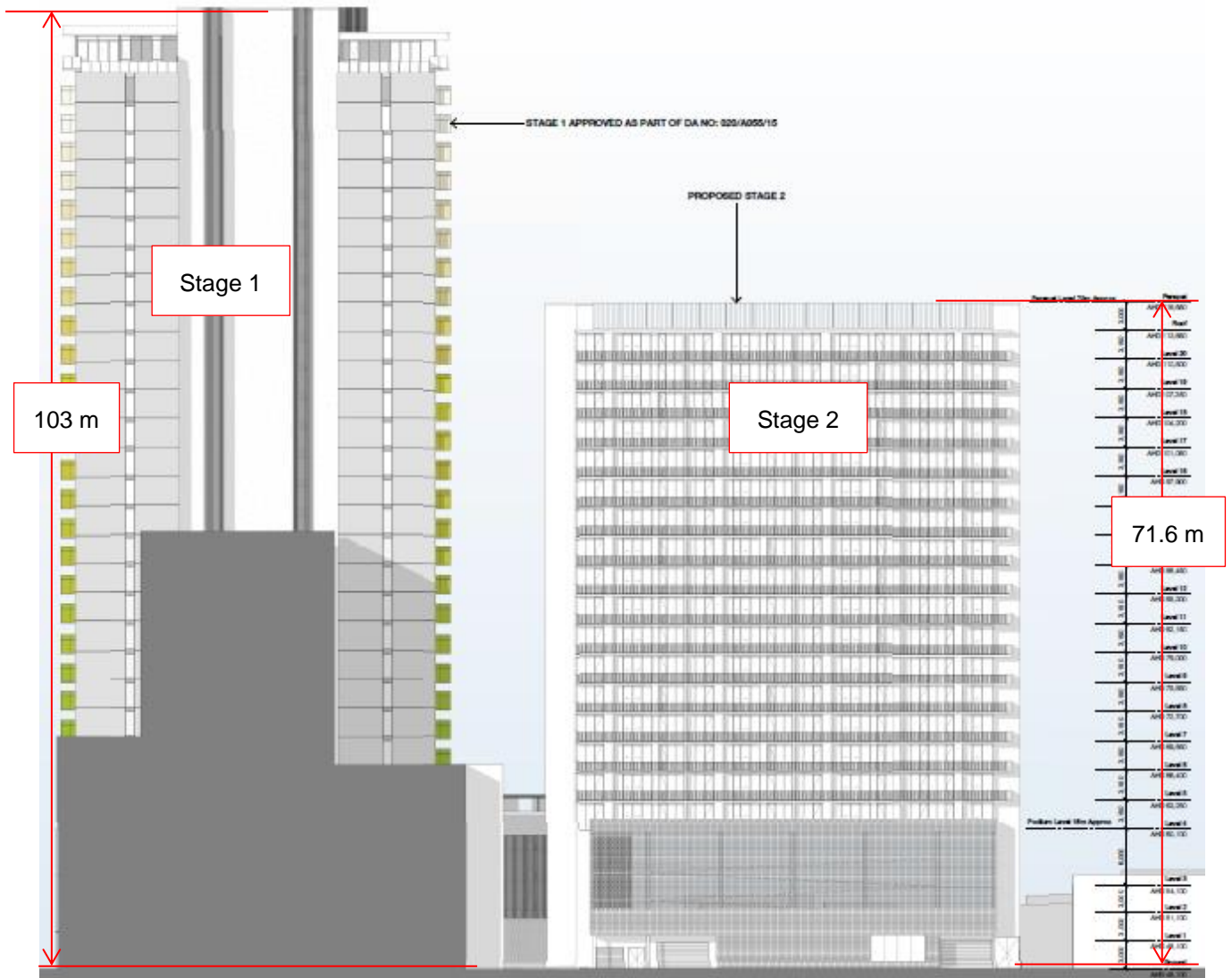


Figure 3: West elevation of the proposed development (Stage 1 and 2)

2 ANALYSIS APPROACH

When considering whether a proposed development is likely to generate adverse wind conditions in adjacent ground level areas, Vipac considers five main points:

- The exposure of the proposed development to wind,
- The regional wind climate,
- The geometry and orientation of the proposed development,
- The interaction of flows with adjacent developments,
- The assessment criteria, determined by the intended use of the public areas affected by wind flows generated or augmented by the proposed development.

The pedestrian wind comfort at specific locations around a site may be assessed by predicting the worst annual 3-second wind gust expected at that location. The location may be deemed generally acceptable for its intended use if the annual 3-second gust is within the threshold values noted in Section 2.5. For cases where Vipac predicts that a location would not meet its appropriate comfort criterion we may recommend the use of wind control devices and/or local building geometry modifications to achieve the desired comfort rating. For complex flow scenarios or where predicted flow conditions are well in excess of the recommended criteria, Vipac recommends scale model wind tunnel testing to determine the type and scope of the wind control measures required to achieve acceptable wind conditions.

2.1 SITE EXPOSURE

Stage 2 of the proposed development is a residential and commercial mixed use building. The proposed development has a roof height of 71.6 m and with a 17 m podium and townhouses on the east of the site. The surrounding developments (within 2000 m radius) are medium to high rise towers in the sector from north to northwest and mid to low rise developments plus parklands in all other directions.

Therefore, for the current study, considering the proximity to Adelaide's CBD and the immediate presence of medium to low rise buildings, the site of the proposed development is considered to be Terrain Category 3 for all wind directions [1] (see Figure 4).



Figure 4: Terrain Categories for the site of the proposed development at Penny Place Adelaide – Stage 2.

2.2 REGIONAL WIND CLIMATE

The mean and gust wind speeds have been recorded in the Adelaide area for 30 years. These data have been analysed and the directional probability distribution of wind speeds have been determined. The directional distribution of hourly mean wind speed at the gradient height ($\approx 500\text{m}$), with a probability of occurring once per year (i.e. 1 year return period) is shown in Figure 5. The wind data at this free stream height are common to all Adelaide city sites and may be used as a reference to assess ground level wind conditions at the site. Figure 5 indicates that the stronger winds can be expected from the south-westerly, north-westerly and westerly directions.

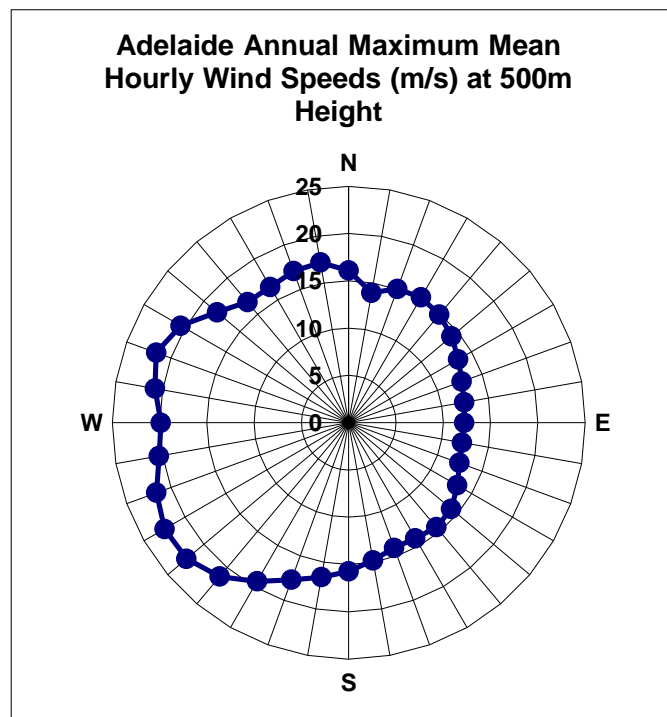


Figure 5: Directional Distribution of Annual Return Period Maximum Mean Hourly Wind Velocities (m/s) at gradient height of 500m in Adelaide.

2.3 BUILDING GEOMETRY AND ORIENTATION

The proposed development is a residential and commercial mixed use building. It consists of a rectangular building plan with a common podium and has a maximum roof height of 71.6 m from the street level. The overall plan-form dimensions are 60 m x 58 m (approximately) with the long axis of the tower running north to south. The main building entrances are at the east sides of the proposed development (See **Error! Reference source not found.**). The main footpaths are along Nelson St and Penny Pl. There are proposed walkways around the main building and townhouses.

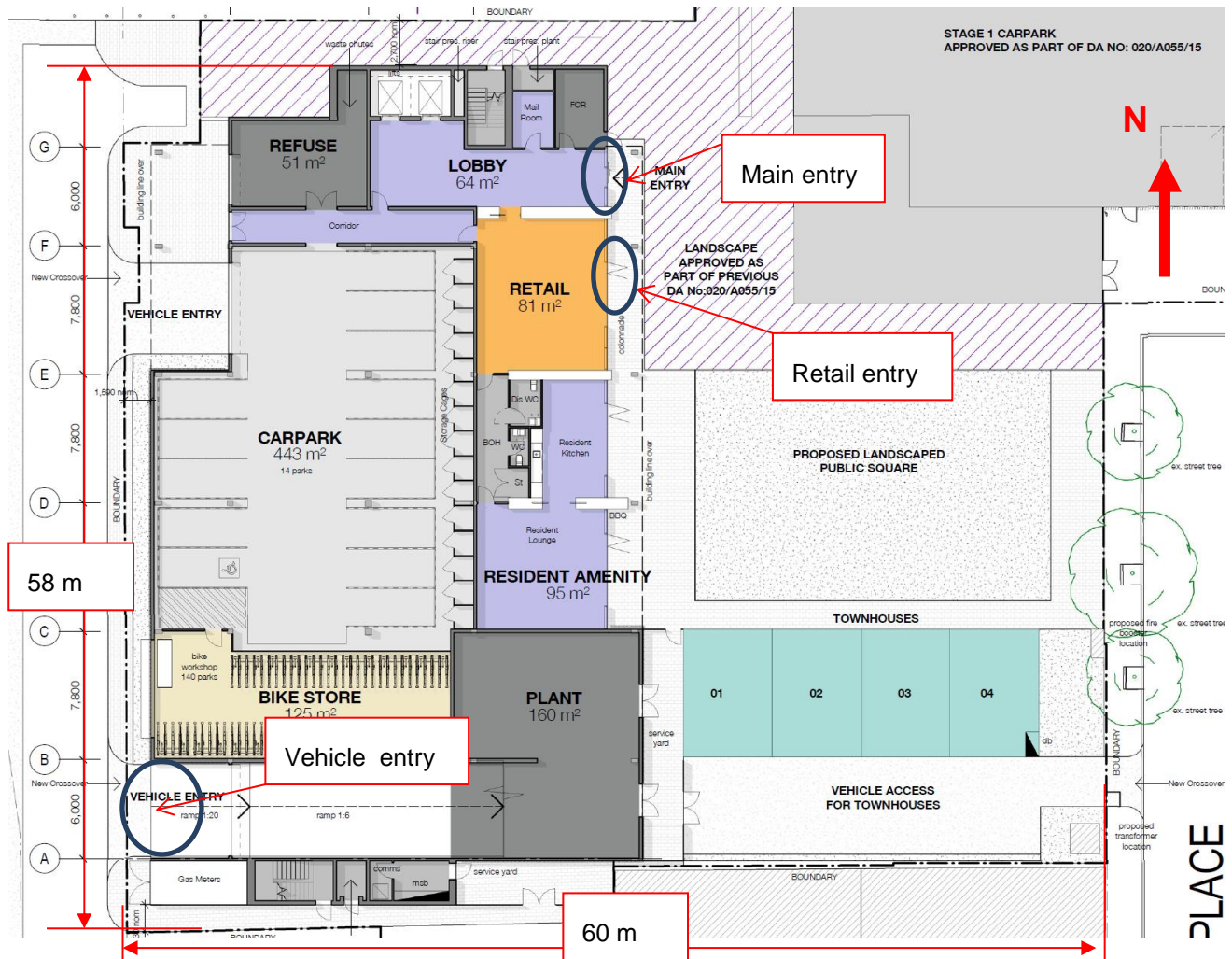


Figure 6: Ground floor plan of the proposed development.

2.4 FLOW INTERACTIONS WITH ADJACENT DEVELOPMENTS

The buildings immediately adjacent to the proposed development, with their number of floors, are shown in Figure 7. Figure 2 also shows the immediate surroundings in a 3D perspective view.

Except the north and northeast sectors, the proposed development is surrounded by 1 to 2 storey buildings in most directions. A 12 storey building to the north and the approved 32 storey Stage 1 building to the NE will provide some shielding from winds from this direction.

The winds from southwest to through west to northwest are high in strength on the proposed site due to the regional wind climate and the low rise developments in this direction.



Figure 7: Immediately adjacent buildings and their number of floors.

2.5 ASSESSMENT CRITERIA

With some consensus of international opinion, pedestrian wind comfort is rated according to the suitability of certain activities at a site in relation to the expected annual peak 3-second gust velocity at that location for each wind direction. Each of the major areas around the site are characterized by the annual maximum gust wind speeds. Most patrons would consider a site generally unacceptable for its intended use if it were probable that during one annual wind event, a peak 3-second gust occurs which exceeds the established comfort threshold velocity (shown in Table 1). If that threshold is exceeded once per year then it is also likely that during moderate winds, noticeably unpleasant wind conditions would result, and the windiness of the location would be considered as unacceptable.

Table 1: Recommended Wind Comfort and Safety Gust Criteria

Annual Maximum Gust Speed	Result on Perceived Pedestrian Comfort
>23m/s	Unsafe (frail pedestrians knocked over)
<20m/s	Acceptable for fast walking (waterfront or particular walking areas)
<16m/s	Acceptable for walking (steady steps for most pedestrians)
<13m/s	Acceptable for standing (window shopping, vehicle drop off, queuing)
<11m/s	Acceptable for sitting (outdoor cafés, gardens, park benches)

In a similar manner, a set of hourly mean velocity criteria (see Table 2) with a 0.1% probability of occurrence are also applicable to ground level areas in and adjacent to the proposed development. An area should be within both the relevant mean and gust limits in order to satisfy the particular human comfort and safety criteria in question.

Table 2: Recommended Wind Comfort and Safety Mean Criteria

Mean Speed in 0.1% of Time	Result on Perceived Pedestrian Comfort
>15m/s	Unsafe (frail pedestrians knocked over)
<13m/s	Acceptable for fast walking (waterfront or particular walking areas)
<10m/s	Acceptable for walking (steady steps for most pedestrians)
<7m/s	Acceptable for standing (window shopping, vehicle drop off, queuing)
<5m/s	Acceptable for sitting (outdoor cafés, gardens, park benches)

The Beaufort Scale is an empirical measure that related the wind speed to observed conditions on the land and sea. Table 3 describes the categories of the Beaufort Scale. The comparison between these observed conditions and the comfort criteria described above can be found in Table 4.

Table 3: Beaufort Scale – empirical measure relating wind speed to observed conditions on land

Beaufort Number	Descriptive Term	Wind Speed at 1.75 m height (m/s)	Specification for Estimating Speed
0	Calm	0-0.1	
1	Light Air	0.1-1.0	No noticeable wind
2	Light Breeze	1.1-2.3	Wind felt on face
3	Gentle Breeze	2.4-3.8	Hair disturbed, clothing flaps, newspapers difficult to read
4	Moderate Breeze	3.9-5.5	Raises dust and loose paper; hair disarranged
5	Fresh Breeze	5.6-7.5	Force of wind felt on body, danger of stumbling when entering a windy zone
6	Strong Breeze	7.6-9.7	Umbrellas used with difficulty, hair blown straight, difficult to walk steadily, sideways wind force about equal to forwards wind force, wind noise on ears unpleasant
7	Near Gale	9.8-12.0	Inconvenience felt when walking
8	Gale	12.1-14.5	Generally impedes progress, great difficulty with balance in gusts
9	Strong Gale	14.6-17.1	People blown over

Table 4: Comparison between Mean comfort criteria and the observed conditions

Comfort Criteria	Beaufort Scale Equivalent
Safety	9 – Strong Gale
Walking	5 – Fresh Breeze
Standing	4-5 – Moderate to Fresh Breeze
Sitting	<4 – Moderate Breeze

2.6 RECOMMENDED CRITERIA

The following table lists the specific areas adjacent to the development and the corresponding recommended criteria.

Table 5: Recommended application of criteria

Area	Recommended Criteria
Footpaths and internal landscaping areas	to comply with the criterion for Walking
Building Entrances	to comply with the criterion for Standing
Balconies	to comply with the criterion for Walking (see discussion below)

Apartment Balcony and Rooftop areas Recommended Criterion Discussion

Apartment balconies are located on all facades of the proposed Development. Vipac recommends as a minimum the apartment balcony/rooftop terrace areas meet the criterion for walking since:

- these areas are not public spaces;
- the use of these areas is optional;
- many similar developments in Adelaide and other Australian capital cities experience wind conditions on balconies and elevated deck areas in the vicinity of the criterion for walking.

Figure 8 highlights the areas on the ground floor where compliance with the above criteria recommended.



Areas recommended to comply with the criterion for Walking

Areas recommended to comply with the criterion for Standing

Figure 8: Plan view of the proposed development with the recommended wind criteria overlaid at ground level areas.

3 PEDESTRIAN LEVEL WIND EFFECTS AND RECOMMENDATIONS

Key Points

- The proposed development would not generate wind conditions in excess of the criterion for safety.
- The wind conditions at most of the ground level footpath areas would be within the criterion for walking. The northwest and southwest corners would be expected to have some high wind conditions due to the downwash and corner acceleration.
- The wind conditions near the entrance areas would be expected to be close to/within the criterion for standing.

Ground Level

The proposed development is surrounded by 1 to 2 storey buildings in the west, south and east directions. It is significantly higher than the immediate surroundings and will become a wind catcher for these directions. The downwash flows from west façade are the main concerns for the ground level footpath wind conditions; however, they are not likely to cause an exceedance of the walking criterion. The area with the highest wind levels is the footpath at the northwest and southwest corners; this is due to a combination of downwash and corner acceleration. Considering the natural ventilated car park design (porous walls from L1 to L3, see Figure 9), these areas would be expected to have wind conditions within the walking criterion.

The building entrances are expected to have wind conditions within the standing criterion.

Internal Landscaping Areas

Internal areas between Stage 1 and Stage 2 are well sheltered for the strong wind directions. The tower is well setback from east side so that the downwash from east façade would not be expected to create high wind conditions. These areas would be expected to be within walking criterion.

Should more stationary comfort conditions (standing or sitting) be required, additional wind treatments may be required in some areas.

Balconies General

Whilst wind conditions on the proposed apartment balconies will frequently be acceptable for outdoor recreation, during moderate to strong winds, conditions in these areas may exceed human comfort criteria. Balcony areas on similar developments in many major Australian capital cities typically experience similar elevated wind conditions. High exposure, corner acceleration flows and standing vortices would sometimes preclude these areas from use for outdoor recreation.

3.1 RECOMMENDATIONS

After careful consideration of the areas at the base of the proposed development, Vipac predicts that the proposed development will present some changes to existing wind conditions in adjacent ground level areas. However, the ground footpath and building entrances would be expected to have the wind conditions within the recommended criteria. As such, Vipac makes no recommendations to alter the building form design for the pedestrian level comfort wind environment.

It should be noted that this study is based on experience only and has not utilised any experimental data for the analysis.

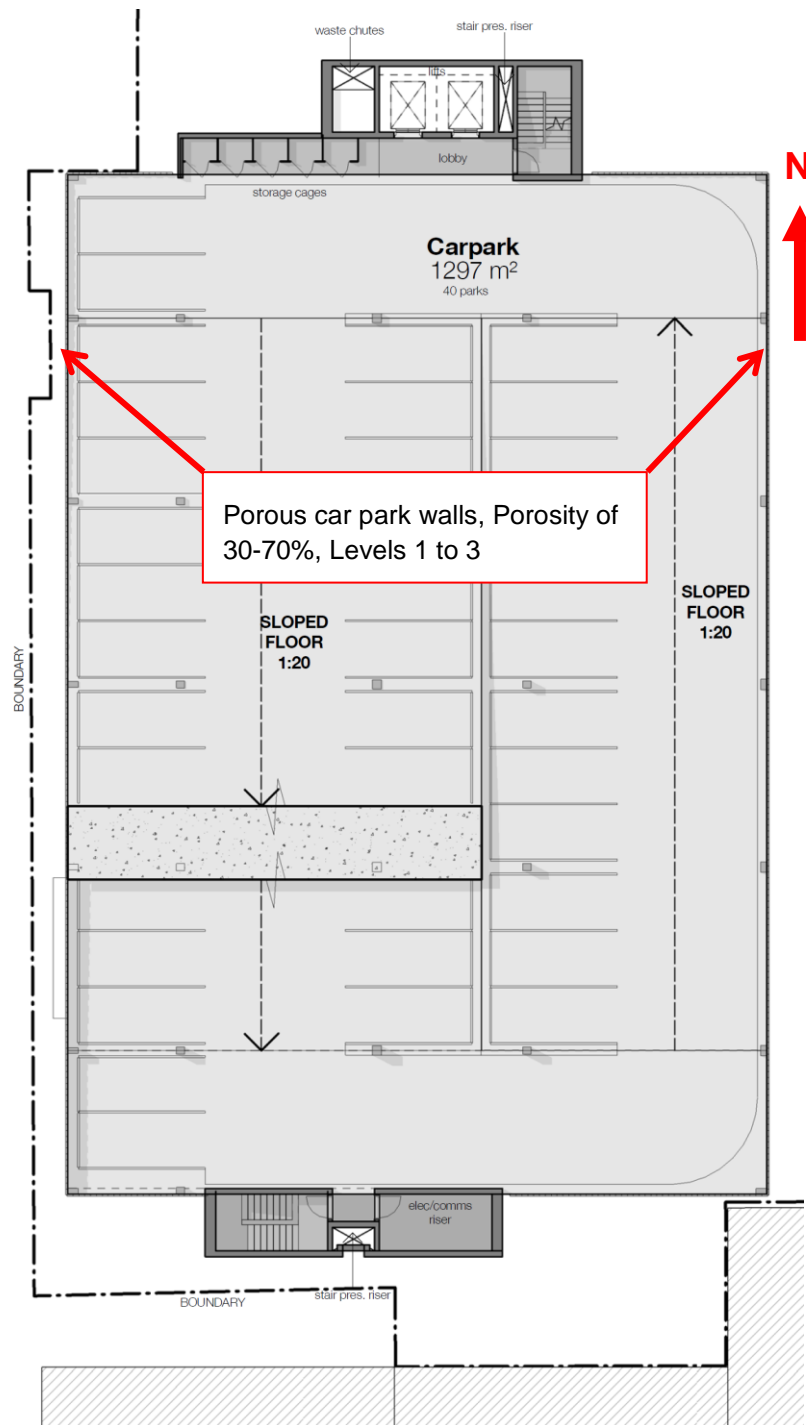


Figure 9: Car Park plans (Levels 2-3)

4 CONCLUSIONS

An appraisal of the likely wind conditions adjacent to and within the proposed development at Penny Place, Adelaide – Stage 2 has been made.

Vipac has carefully considered the flow structures likely to be generated by the proposed development that would affect ground level areas. From this analysis, Vipac predicts that all the ground footpath and building entrances would be expected to have the wind conditions within the recommended criteria. As such, Vipac makes no recommendations to alter the building form design for the pedestrian level comfort wind environment.

As a general statement, educating residents about wind conditions at high-level balconies and terrace areas during high-wind event and tying down loose lightweight furniture are highly recommended.

The assessments provided in this report have been made based on experience of similar situations in Adelaide and around the world. As with any opinion, it is possible that an assessment of wind effects based on experience and without experimental validation may not account for all complex flow interactions in the vicinity. Vipac recommends a scaled wind tunnel study in the detail design stage to verify the predictions and determine the optimal wind controls if required.

This Report has been Prepared

For











Flagship (Penny Place) Pty Ltd

By

VIPAC ENGINEERS & SCIENTISTS PTY LTD

5 REFERENCES

- [1] *Structural Design Actions, Part 2: Wind Actions*, Australian/New Zealand Standard 1170.2:2011
- [2] *Wind Effects on Structures* E. Simiu, R Scanlan, Publisher: Wiley-Interscience
- [3] *Architectural Aerodynamics* R. Aynsley, W. Melbourne, B. Vickery, Publisher: Applied Science Publishers
- [4] Drawings in the pdf files provided by Woods Bagot in Oct 2017 as follows:

Name	Date modified
 Section A	11/10/2017 9:07 AM
 Section B	11/10/2017 9:07 AM
 SK05 Ground Plan	11/10/2017 9:07 AM
 SK06 Level 1 Carpark	11/10/2017 9:07 AM
 SK07 Level 4 Apartments	11/10/2017 9:07 AM
 SK15 Typical Level 2-3 Carpark	11/10/2017 9:07 AM
 SK16 Typical Level 5-20 Apartments	11/10/2017 9:07 AM
 SK18 Roof Plan	11/10/2017 9:07 AM
 South Elevation	11/10/2017 9:07 AM
 West Elevation	11/10/2017 9:07 AM

Appendix A: ENVIRONMENTAL WIND EFFECTS

Atmospheric Boundary Layer

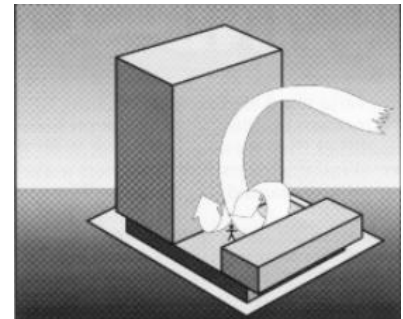
As wind flows over the earth it encounters various roughness elements and terrain such as water, forests, houses and buildings. To varying degrees, these elements reduce the mean wind speed at low elevations and increase air turbulence. The wind above these obstructions travels with unattenuated velocity, driven by atmospheric pressure gradients. The resultant increase in wind speed with height above ground is known as a wind velocity profile. When this wind profile encounters a tall building, some of the fast moving wind at upper elevations is diverted down to ground level resulting in local adverse wind effects.

The terminology used to describe the wind flow patterns around the proposed Development is based on the aerodynamic mechanism, direction and nature of the wind flow.

Downwash – refers to a flow of air down the exposed face of a tower. A tall tower can deflect a fast moving wind at higher elevations downwards.

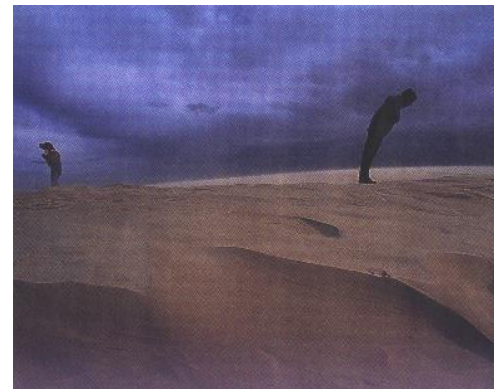
Corner Accelerations – when wind flows around the corner of a building it tends to accelerate in a similar manner to airflow over the top of an aeroplane wing.

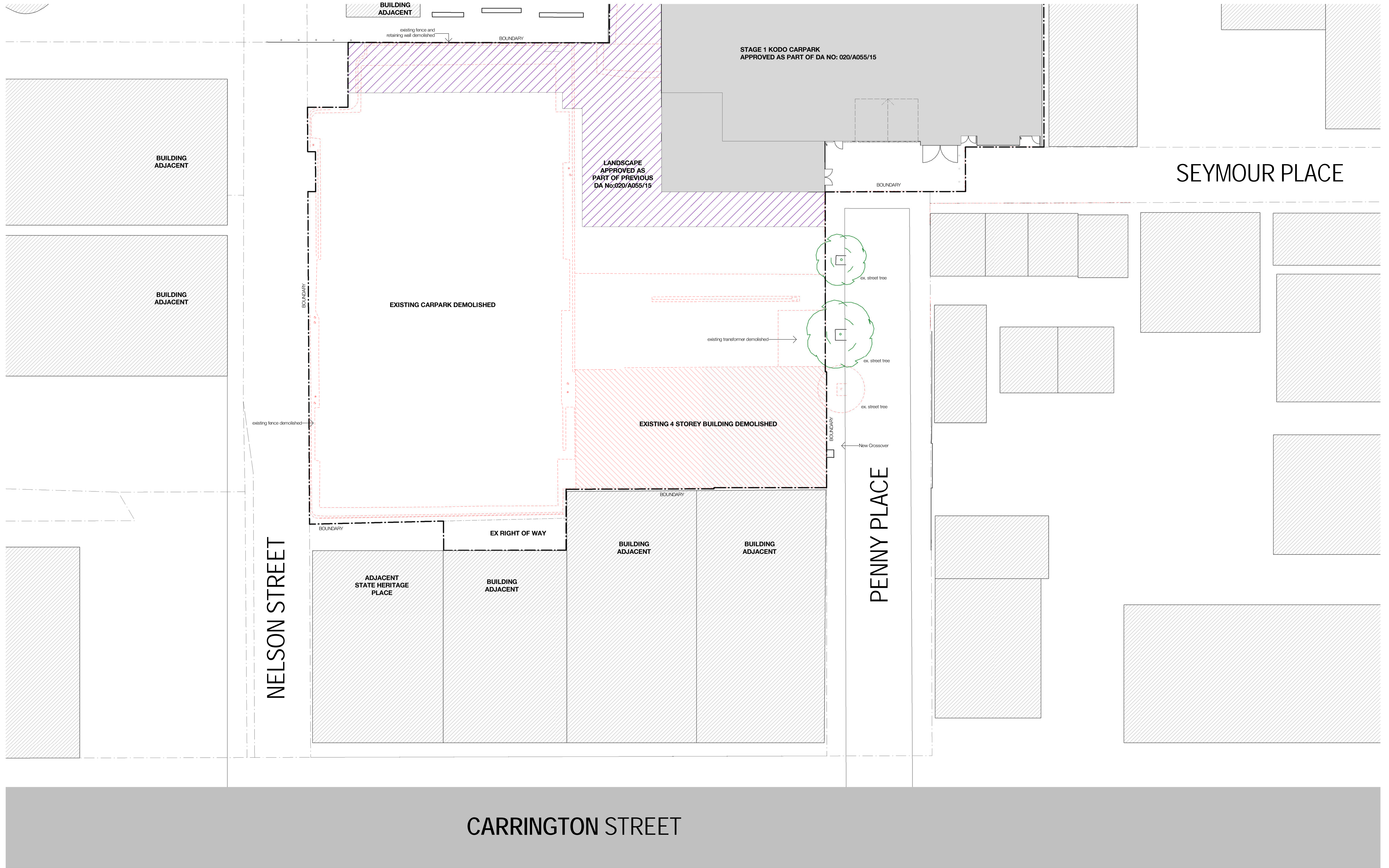
Flow separation – when wind flowing along a surface suddenly detaches from that surface and the resultant energy dissipation produces increased turbulence in the flow. Flow separation at a building corner or at a solid screen can result in gusty conditions.

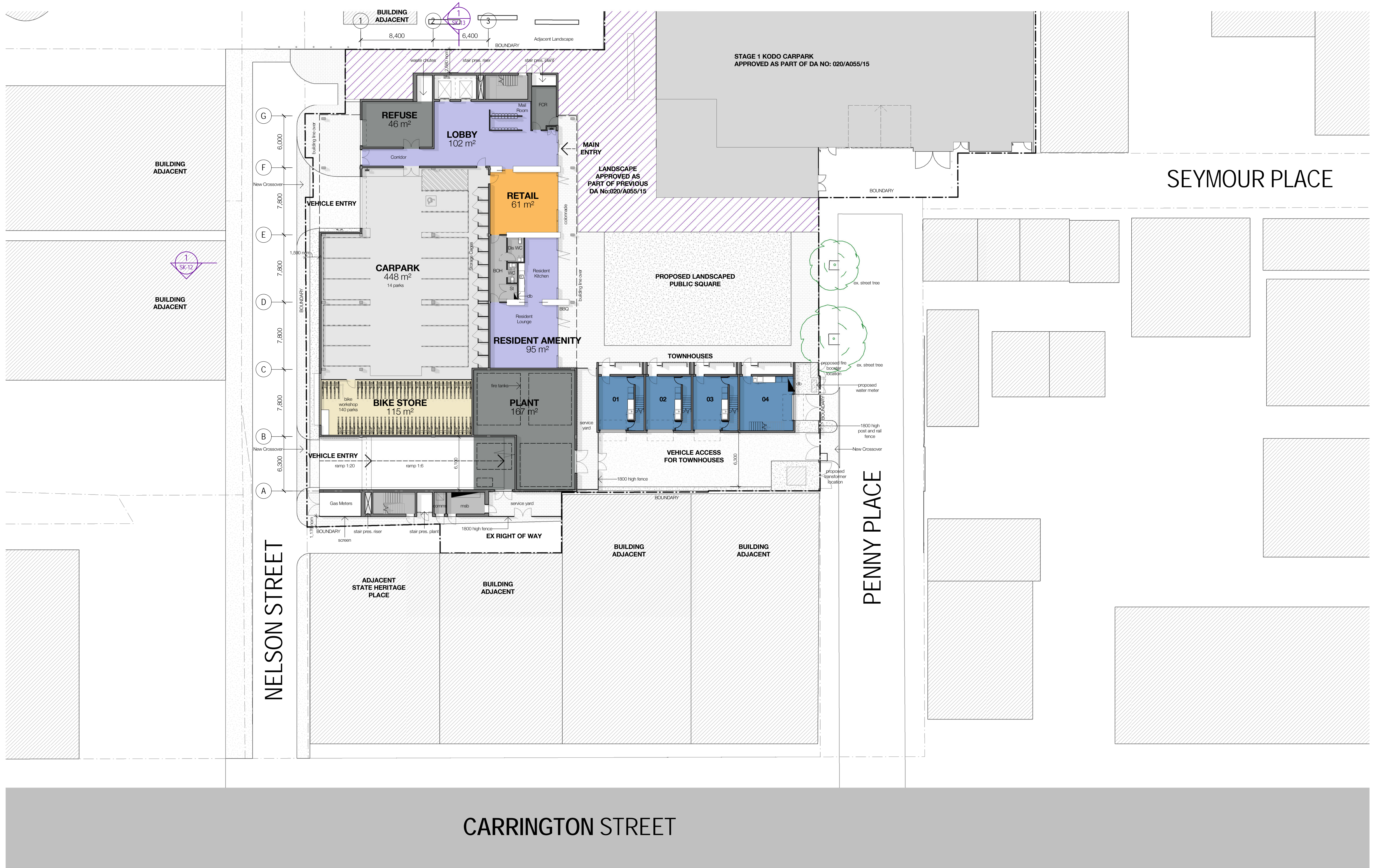


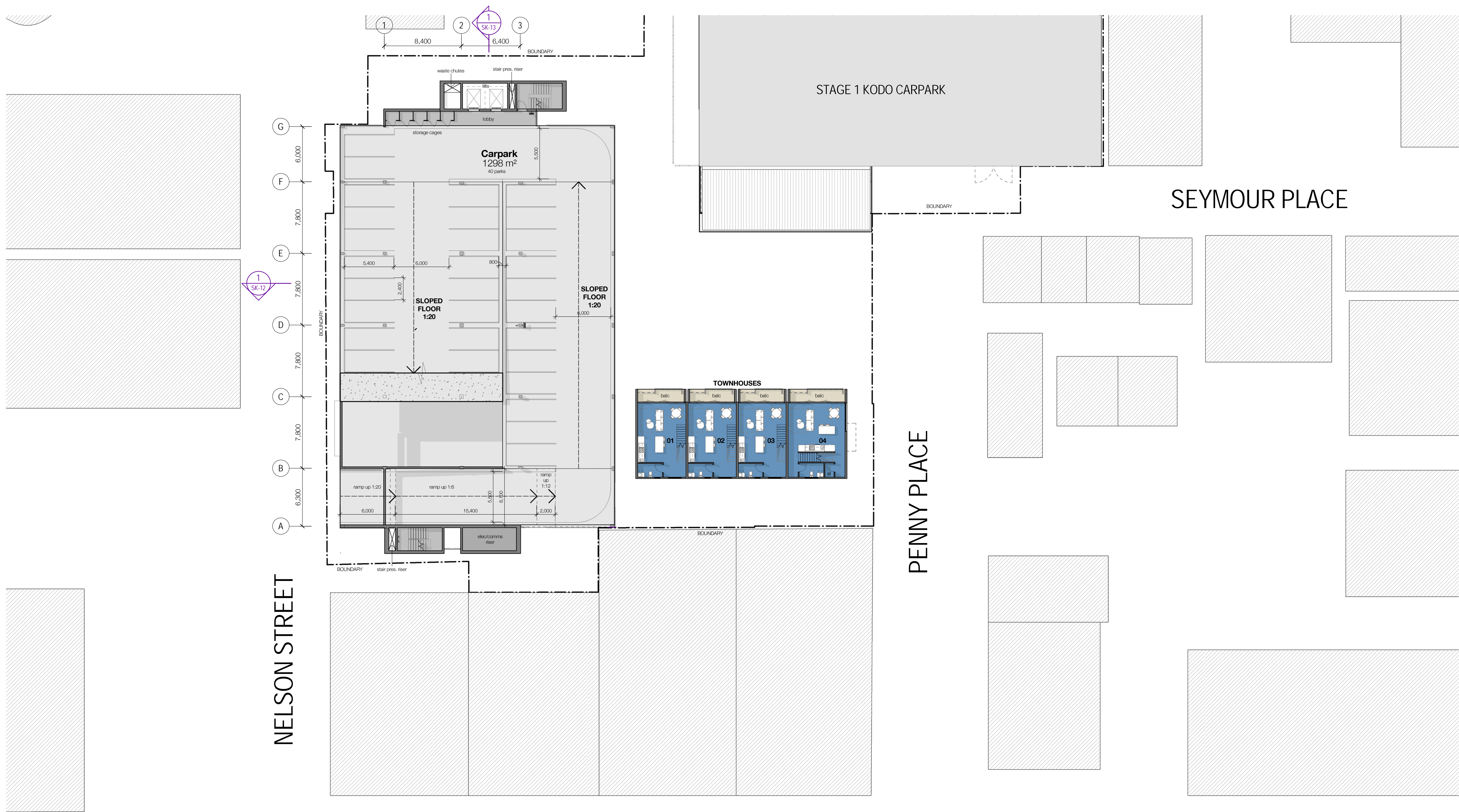
Flow channelling – the well-known “street canyon” effect occurs when a large volume of air is funnelled through a constricted pathway. To maintain flow continuity the wind must speed up as it passes through the constriction. Examples of this might occur between two towers, in a narrowing street or under a bridge.

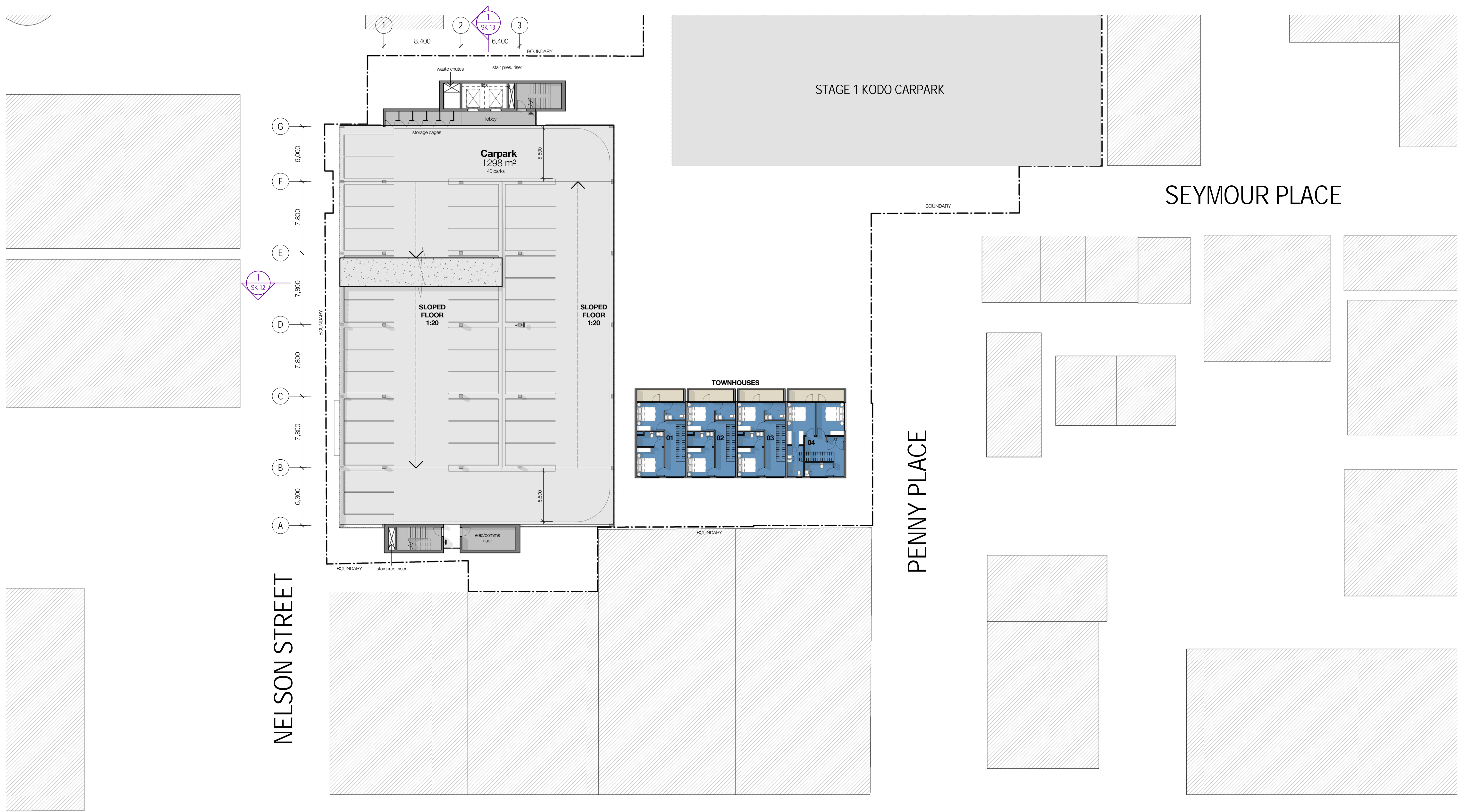
Direct Exposure – a location with little upstream shielding for a wind direction of interest. The location will be exposed to the unabated mean wind and gust velocity. Piers and open water frontage may have such exposure.











NELSON STREET

SEYMOUR PLACE

PENNY PLACE

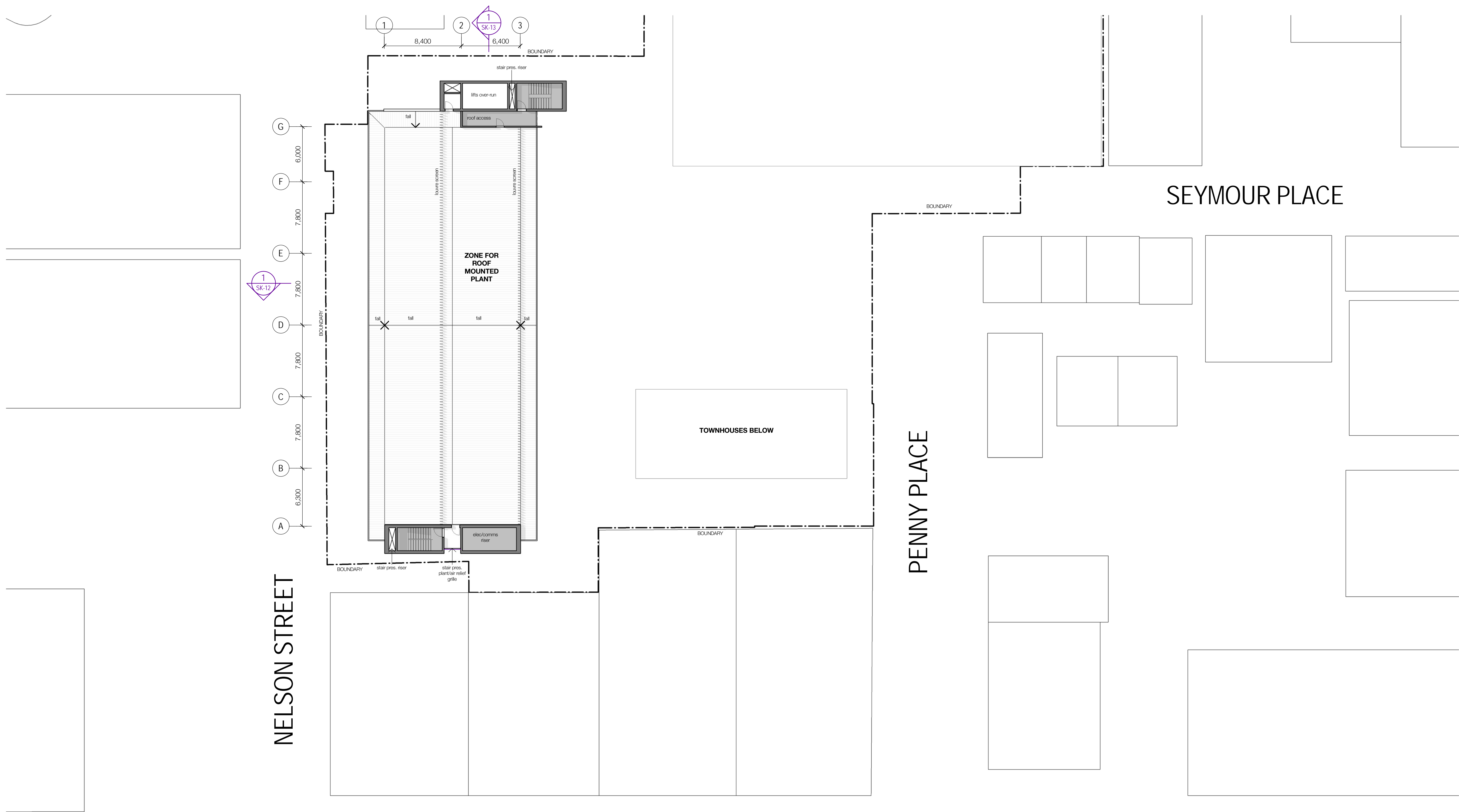
CARRINGTON STREET



CARRINGTON STREET



CARRINGTON STREET



MATERIAL SCHEDULE

CE:01 INSITU CONCRETE CORE WALLS

CL:01 PAINTED WHITE CLADDING
CL:02 PREFINISHED FIBRE CEMENT SHEET

MA:01 BRICK SCREEN FACADE
MA:02 CONCRETE BLOCKWORK FACADE

W:01 CLEAR GLAZED GLASS FACADE

STAGE 1 KODO APPROVED AS PART OF DA NO: 020/A055/15

PROPOSED STAGE 2

CE:01

CL:01

Federal Court Building in Foreground

CL:02

MA:01

Podium Level 15m Approx

PENNY PLACE

NELSON STREET

Parapet

AHD 116,650

Roof

AHD 113,650

Level 20

AHD 110,500

Level 19

AHD 107,350

Level 18

AHD 104,200

Level 17

AHD 101,050

Level 16

AHD 97,900

Level 15

AHD 94,750

Level 14

AHD 91,600

Level 13

AHD 88,450

Level 12

AHD 85,300

Level 11

AHD 82,150

Level 10

AHD 79,000

Level 9

AHD 75,850

Level 8

AHD 72,700

Level 7

AHD 69,550

Level 6

AHD 66,400

Level 5

AHD 63,250

Level 4

AHD 60,100

Level 3

AHD 54,100

Level 2

AHD 51,100

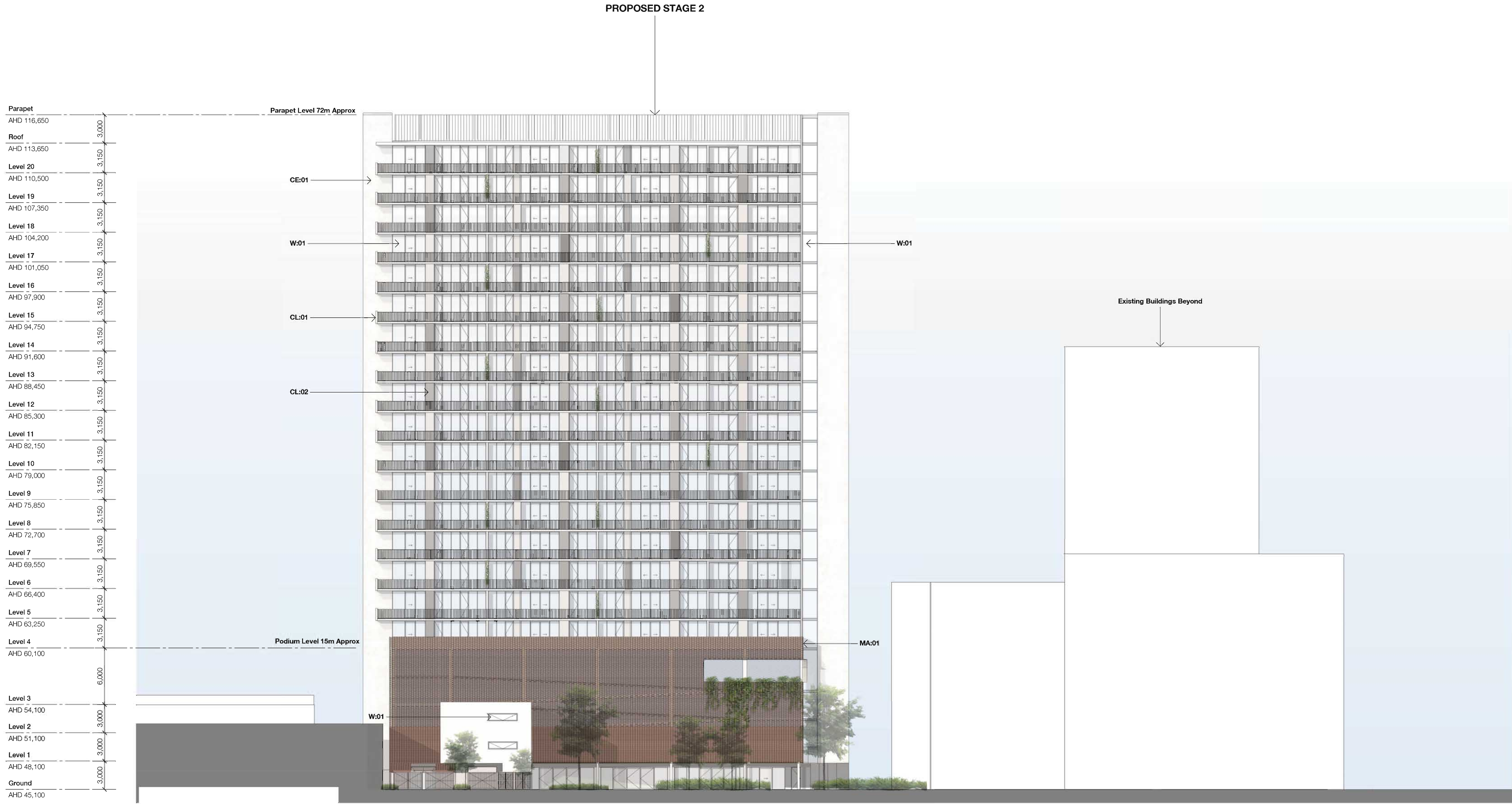
Level 1

AHD 48,100

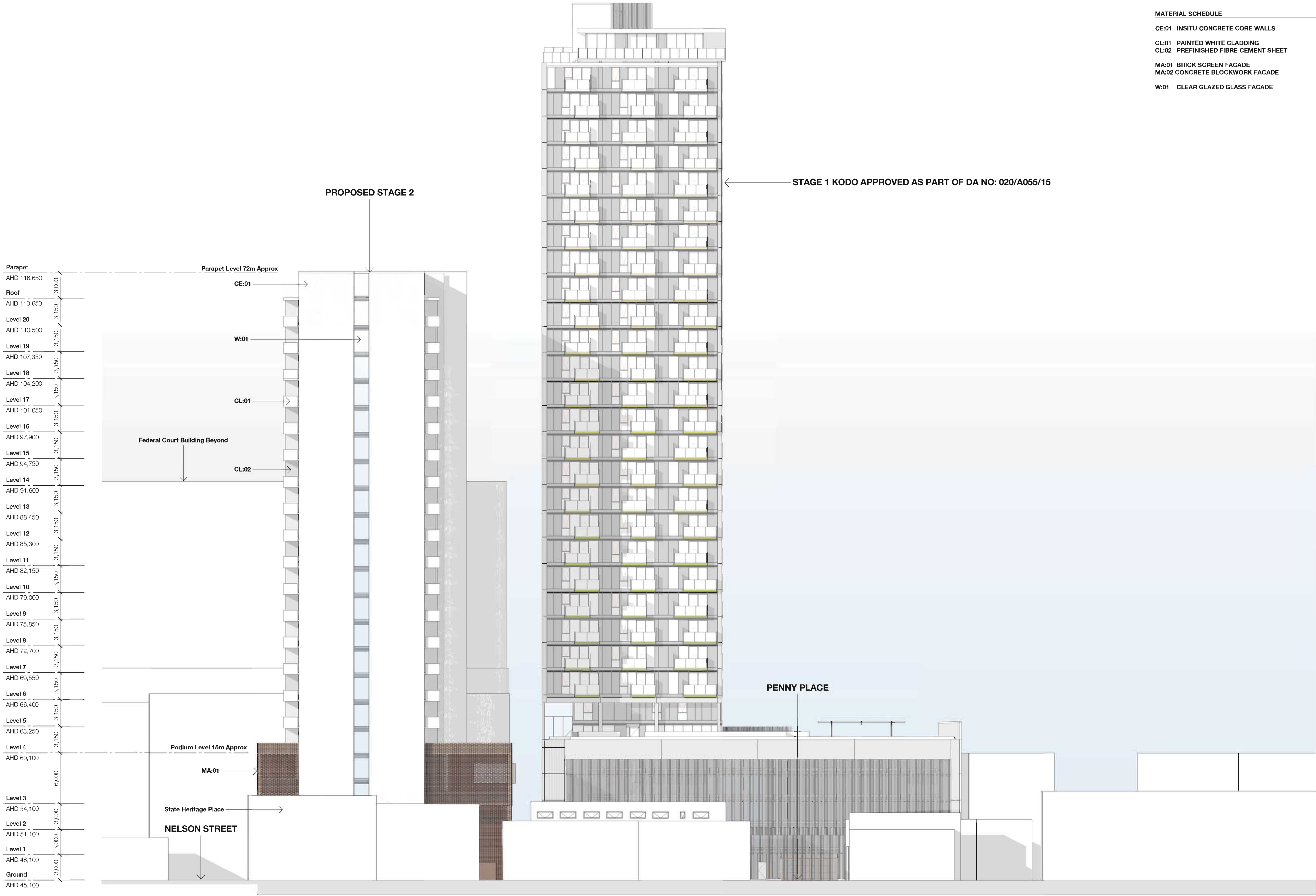
Ground

AHD 45,100

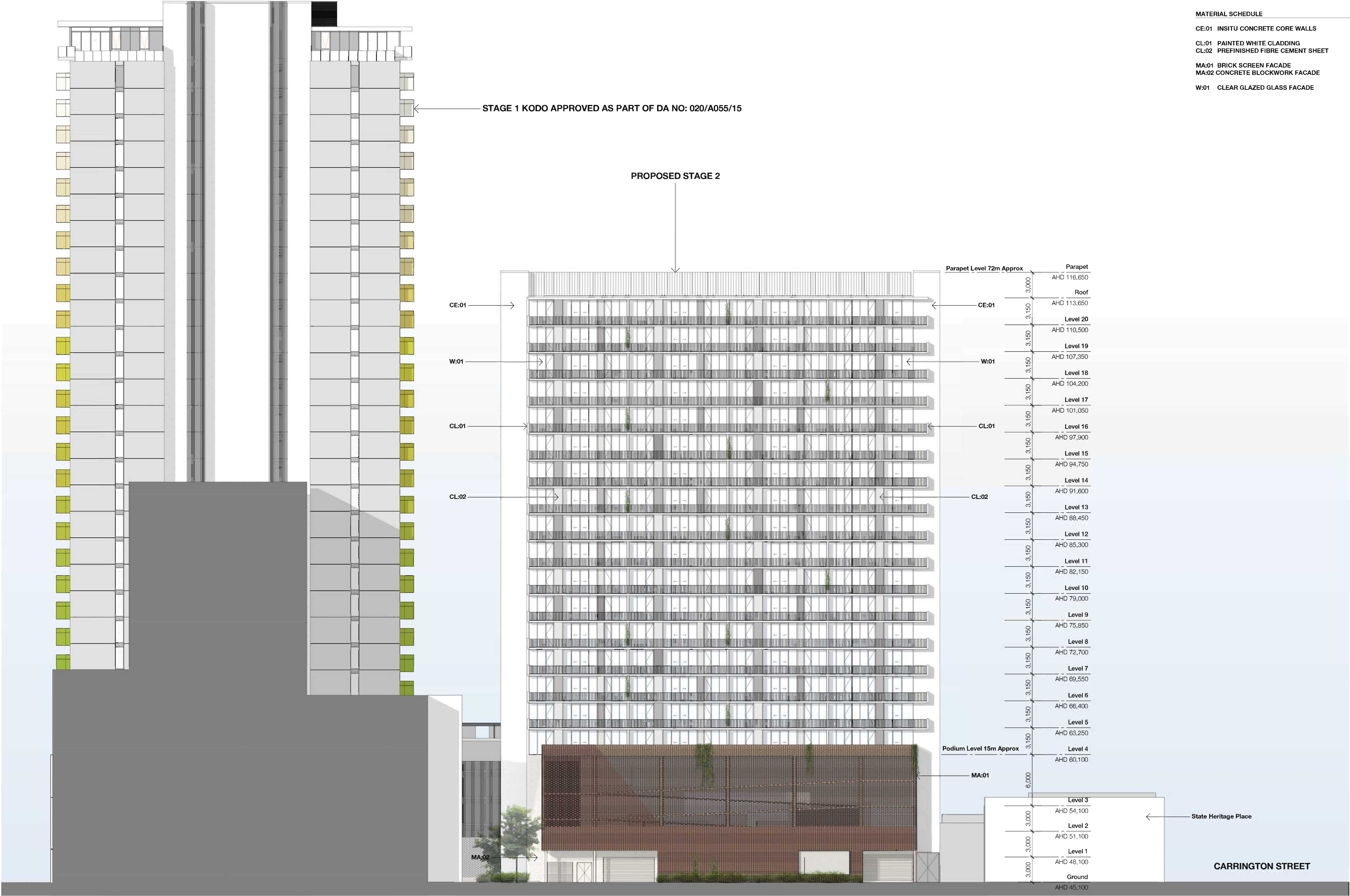
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CL:01	PAINTED WHITE CLADDING
CL:02	PREFINISHED FIBRE CEMENT SHEET
MA:01	BRICK SCREEN FACADE
MA:02	CONCRETE BLOCKWORK FACADE
W:01	CLEAR GLAZED GLASS FACADE

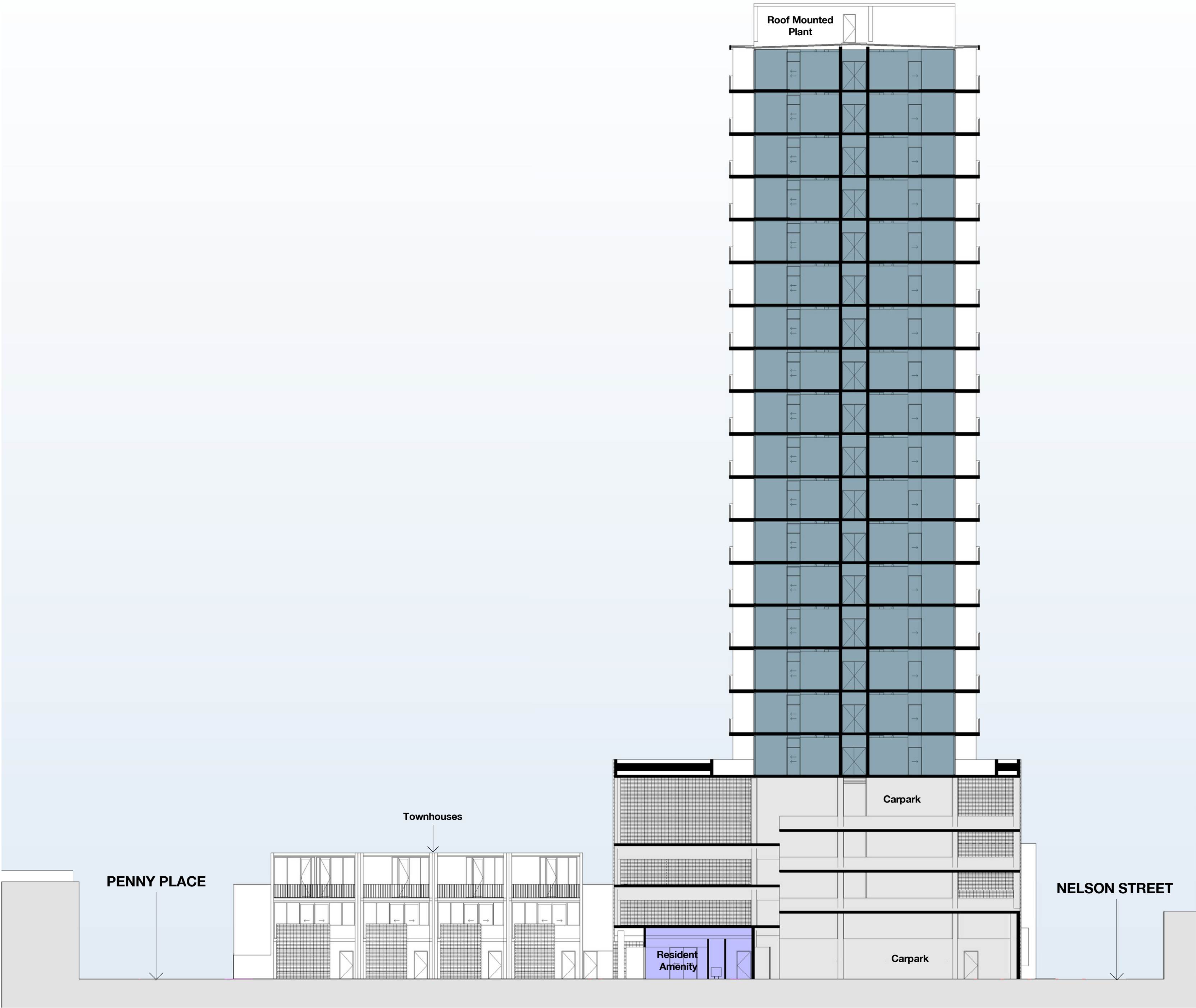


MATERIAL SCHEDULE	
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CL:01	PAINTED WHITE CLADDING
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MA:01	BRICK SCREEN FACADE
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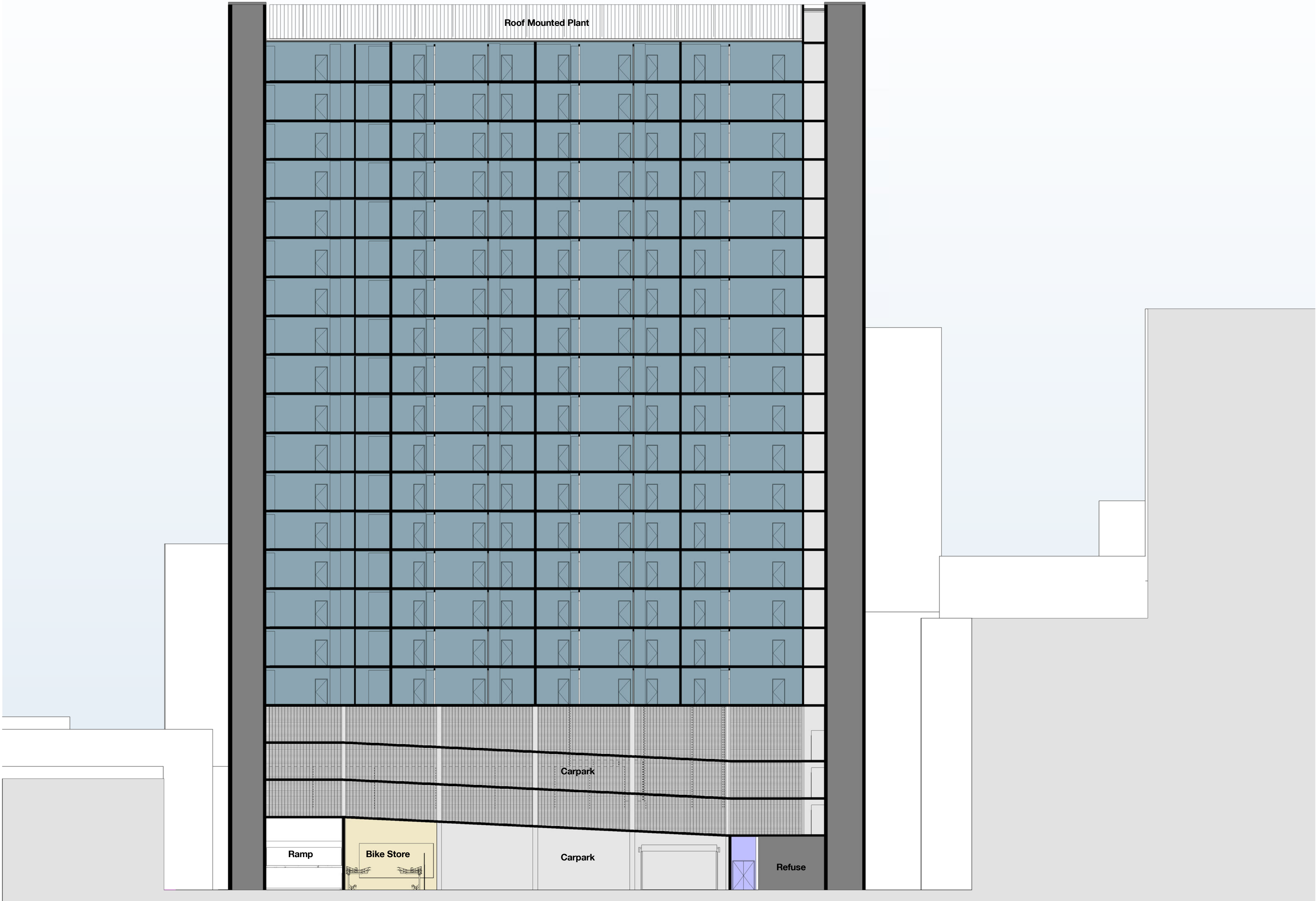
MATERIAL SCHEDULE	
CE:01	INSITU CONCRETE CORE WALLS
CL:01	PAINTED WHITE CLADDING
CL:02	PREFINISHED FIBRE CEMENT SHEET
MA:01	BRICK SCREEN FACADE
MA:02	CONCRETE BLOCKWORK FACADE
W:01	CLEAR GLAZED GLASS FACADE





	Parapet
3,000	AHD 116,650
	Roof
3,150	AHD 113,650
	Level 20
3,150	AHD 110,500
	Level 19
3,150	AHD 107,350
	Level 18
3,150	AHD 104,200
	Level 17
3,150	AHD 101,050
	Level 16
3,150	AHD 97,900
	Level 15
3,150	AHD 94,750
	Level 14
3,150	AHD 91,600
	Level 13
3,150	AHD 88,450
	Level 12
3,150	AHD 85,300
	Level 11
3,150	AHD 82,150
	Level 10
3,150	AHD 79,000
	Level 9
3,150	AHD 75,850
	Level 8
3,150	AHD 72,700
	Level 7
3,150	AHD 69,550
	Level 6
3,150	AHD 66,400
	Level 5
3,150	AHD 63,250
	Level 4
3,150	AHD 60,100
6,000	
	Level 3
3,000	AHD 54,100
	Level 2
3,000	AHD 51,100
	Level 1
3,000	AHD 48,100
	Ground
3,000	AHD 45,100

Parapet	
AHD 116,650	
Roof	3,000
AHD 113,650	
Level 20	3,150
AHD 110,500	
Level 19	3,150
AHD 107,350	
Level 18	3,150
AHD 104,200	
Level 17	3,150
AHD 101,050	
Level 16	3,150
AHD 97,900	
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AHD 94,750	
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Level 6	3,150
AHD 66,400	
Level 5	3,150
AHD 63,250	
Level 4	3,150
AHD 60,100	
Level 3	6,000
AHD 54,100	
Level 2	3,000
AHD 51,100	
Level 1	3,000
AHD 48,100	
Ground	3,000
AHD 45,100	





Ref: SH/13432D
Date: 10 January 2018

Secretary – Ms Alison Gill
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Attention: Ben Scholes

Dear Mr Scholes

DESCRIPTION: DEMOLITION OF EXISTING BUILDING AND CONSTRUCTION OF A 21-STOREY MIXED USE DEVELOPMENT AND A 3 STOREY RESIDENTIAL FLAT BUILDING, ANCILLARY CAR PARKING, LANDSCAPING, PUBLIC CIRCULATION AREAS AND LANDSCAPED SQUARE AT 11-19 PENNY PLACE / 27 ANGAS STREET, ADELAIDE

Application number: 020/A068/17
Referral received: 10/11/2017
State heritage place: Bar Chambers (former Dwelling), 34 Carrington Street ADELAIDE

The above application has been referred to the Minister for Sustainability, Environment and Conservation in accordance with Section 37 of the *Development Act 1993* as development that directly affects a State heritage place or, in the opinion of the relevant authority, materially affects the context within which a State heritage place is situated.

Subject to the recommendation set out below, the proposed development is considered to be acceptable in relation to the above State heritage place for the following reason/s.

- The proposed development is confined to a site adjacent to the site of the State heritage place. It does not directly affect the physical fabric or material heritage values of the State heritage place.
- The proposed three-storey townhouse building will not be visible in views of the State heritage place, and consequently does not affect its visual context.
- The proposed apartment tower is set well back behind the State heritage place such that it will not overly dominate its visual presence within the streetscape context of Carrington Street.
- The following aspects of the proposed apartment tower are considered to demonstrate a reasonable design response to the two-storey State heritage place on the corner of Carrington Street and Nelson Street.

The brick-faced podium component establishes a sympathetic scale relationship to the State heritage place, assisted a) by the separation resulting from the intervening right-of-way to the north of the State heritage place; b) by its singular expression of form arising from the 4.5m setback above the podium level; and c) by its materiality and the strong material and architectural differentiation between podium and tower.

Subject to further design development and detail as conditioned below, the architectural and material expression of the podium is considered an appropriate response to the visual character of the State heritage place. Similarly, subject to further information and detail as conditioned below, the in-situ concrete southern service core is considered an acceptably neutral backdrop to the State heritage place.

- The application demonstrates the flexibility of the apartment building design to respond to future land use changes in Nelson Street by delivering greater activation of the ground floor frontage, with consequential benefit to the context of the State heritage place.

Recommendation

A. The following condition/s should be incorporated into any consent or approval.

Condition 1: Design development of the brick-clad facades to the podium shall be undertaken to the satisfaction of the State Commission Assessment Panel, prior to the granting of development approval.

Aspects requiring resolution shall include...

- a) the cladding system to be used;**
- b) the selection of masonry units including colour and texture;**
- c) the location and detail of perforated zones including their solid/void ratio;**
- d) detailing of corners and junctions; and**
- e) detailing of the framing and glazing of apertures.**

Reason for condition: The successful realisation of the visual intent expressed in the planning documentation is important to the quality of the visual relationship with the State heritage place.

Condition 2: Details of the finished appearance of the service cores' in situ concrete external faces shall be confirmed to the satisfaction of the State Commission Assessment Panel, prior to the granting of development approval.

Aspects requiring further detail shall include...

- a) how junctions between floor-by-floor concrete pours are to be managed;**
- b) whether the faces are expressed as monolithic surfaces or articulated into smaller visual divisions;**
- c) the surface texture (eg smooth off-form finish using steel forms, textured off-form finish, 3D off-form finish); and**
- d) whether the surfaces are to remain in their off-form finish or have an applied finish, and suitable quality control measures to achieve consistency of finish to an acceptable standard.**

Reason for condition: The quality and consistency of the southern core's finish is important to its success as a neutral backdrop to the State heritage place.

Condition 3: External materials, colours and finishes shall be subject to the provision of a materials sample board to the satisfaction of the State Commission Assessment Panel, prior to the granting of development approval.

Reason for condition: The finished appearance and visual character of the apartment tower are important to the quality of its visual relationship with the State heritage place.

General notes

1. Any changes to the proposal for which planning consent is sought or granted may give rise to heritage impacts requiring further consultation with the Department of Environment, Water and Natural Resources, or an additional referral to the Minister for Sustainability, Environment and Conservation. Such changes would include for example (a) an application to vary the planning consent, or (b) Building Rules documentation that incorporates differences from the proposal as documented in the planning application.
2. To ensure a satisfactory heritage outcome, the State Commission Assessment Panel is requested to consult the Department of Environment, Water and Natural Resources in finalising any conditions or reserved matters above.

3. In accordance with Regulation 43 of the *Development Regulations 2008*, please send the Department of Environment, Water and Natural Resources a copy of the Decision Notification.
4. The State Commission Assessment Panel is requested to inform the applicant of the following requirements of the *Heritage Places Act 1993*.
 - (a) If an archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the SA Heritage Council shall be notified.
 - (b) Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.For further information, contact the Department of Environment, Water and Natural Resources.
5. The State Commission Assessment Panel is requested to inform the applicant of the following requirements of the *Aboriginal Heritage Act 1988*.
 - (a) If Aboriginal sites, objects or remains are discovered during excavation works, the Aboriginal Heritage Branch of the Aboriginal Affairs and Reconciliation Division of the Department of the Premier and Cabinet (as delegate of the Minister) should be notified under Section 20 of the *Aboriginal Heritage Act 1988*.

For any enquiries in relation to this application, I can be contacted on telephone 8124 4935 or e-mail peter.wells@sa.gov.au.

Yours sincerely



Peter Wells

Principal Conservation Architect

DEPARTMENT OF ENVIRONMENT, WATER AND NATURAL RESOURCES

as delegate of the

MINISTER FOR SUSTAINABILITY, ENVIRONMENT AND CONSERVATION

Scholes, Benjamin (DPTI)

From: Brett Eaton <beaton@aal.com.au>
Sent: Friday, 29 September 2017 1:55 PM
To: Scholes, Benjamin (DPTI)
Subject: PLP#1 - 27 Penny Place, Adelaide
Attachments: 27-31 Angas street revised OLS and coords.pdf; APAR ADL Adelaide 27-31 Angas Street - Building.pdf

Hi Ben,

I will be flying to Canberra the same time as the PLP on Tuesday.

Can the following be tabled for the airport.

No Height shown on elevations which doesn't make it easy guessing about 147m AHD. So through the Obstacle Limitation Surfaces at 111m AHD. Therefore Airspace Approval in Accordance with the Airports Act will be required. The building is unshielded at approx. 109m AHD.

We have the previous approved tower at 27-13 Angas Street at a height of 148.65m AHD with an Aeronautical Study Completed. If the application is below this height then a revised study isn't required for the site. Otherwise this will need to be updated for the new site and footprint. Have attached the original approval and site plan

PANS-OPS is at approx. 182m AHD so shouldn't be an issue for construction cranes

Regards

Brett Eaton
Airside Operations Manager

P: 08 8308 9245
M: 0438 890 111
F: 08 8308 9311
E: beaton@aal.com.au



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Watch the videos: airportbusinessdistrict.com

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Adelaide Airport Limited – ABN: 78 075 176 653

File No:
2014/11234/01

20 December 2017

Ref No:
12198668

Ben Scholes
Project Officer – CBD & Inner Metro Team
Strategic Development Assessment
Planning and Development
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
Adelaide SA 5000

benjamin.scholes@sa.gov.au

For the attention of the State Commission Assessment Panel

27 Angas Street, Adelaide (Also known as 27 Penny Place)

Further to the referral 020/A068/17 received 10 November 2017 pertaining to the development application at the above address and in my capacity as a statutory referral in the State Commission Assessment Panel, I am pleased to provide the final recommendations report from the Design Review process for your consideration.

The project was presented to the Design Review panel on one occasion. A pre-lodgement agreement was not reached in advance of lodgement. From considering the material supplied with the referral and evaluating the design merit of the project I am pleased to offer my in principle support to the planning application.

The proposal is the second stage of an integrated master plan, which includes the first stage (Kodo Apartments) currently under construction. This proposal includes a residential apartment building, three storey townhouses and a publicly accessible open space 'Penny Square'. The entire site of the overall development is approximately 5300 square metres and has frontages to Angas Street to the north, Nelson Street to the west and Penny Place to the east. The surrounding buildings include a State heritage place (House at 34 Carrington Street) to the south of the site, and the Federal Court building on Angas Street to the immediate north of the proposed residential building. In the immediate locality, the existing built form character of Carrington Street is predominantly one to three storey commercial, office and civic buildings. The buildings on Angas Street are larger in scale, and include the Federal Court building, SA Water building and St Aloysius College buildings.

The Stage Two residential building is located at the southwest corner of the site along the Nelson Street frontage, and the four townhouses are located on the southeast corner along the southern boundary. 'Penny Square' is located in the

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2014/11234/01

Ref No:
12198668

centre of the block to the south of the Stage One Kodo Apartments. I support the provision of a substantial public space within the development and access link between 'Penny Square' and Nelson Street through the lobby of the residential apartment building. However I am of the opinion that further design development is required to provide a clear and intuitive connection. I recommend development of a high quality lobby area, informed by urban design and wayfinding principles to maximise the development's engagement with the public realm. I am also concerned by the inactive frontage provided to Nelson Street, as in my opinion, it can restrict future development opportunities on the adjoining sites and their potential contributions to the public realm. However in this instance, I support the proposal on balance, as the application demonstrates a provision is made for future commercial tenancies on the Nelson Street frontage.

Acknowledging the planning report discusses the Crime Prevention through Environmental Design (CPTED) strategies including the provision of retail and communal spaces presenting to 'Penny Square', I am yet to be convinced that the successful implementation of the strategies are demonstrated in the submitted documents. I am particularly concerned about the lack of sufficient passive surveillance to the public spaces after hours. I understand that the project team intend to transfer the publicly accessible spaces to the City of Adelaide. Therefore it is particularly critical to the success of the overall development that the public spaces are safe at all times for the residents and the wider community alike. I encourage ongoing discussion with Council with the view to achieving a mutually appropriate generous public space, informed by building management, solar access, lighting and a landscaping strategy. Consideration of daytime and nighttime uses of the public spaces is also strongly recommended.

The built forms of this proposal include a twenty storey (72 metre) residential tower, three storey townhouses and a public square. The residential apartment building includes a 15 metre high podium, and the built form above is setback from the podium by eight metres to the east and three metres to the west. I support the proposed height of the residential tower, as the project site is located within the Capital City Zone where no prescribed height limit applies. The proposed height is also significantly lower than the height of the Stage One apartment building. I also support the provision of the podium and its proposed height, as it responds to the scale of the adjoining State heritage place at 34 Carrington Street. The residential apartments on the floors above the podium are oriented east-west with the intention to address potential overlooking to the Federal Court building. In my opinion, reorientation of the building to provide north-south apartments will improve the residential amenity and sustainability performance of the development. However I acknowledge the challenges with the site specific adjacency issues with the Federal Court building and support the proposed orientation on balance.

I strongly support the architectural expression of the residential apartment building, which reflects the design principle to deliver a rational building outcome. I also support the expression to be distinctive from the Stage One development, as both buildings are designed through different conceptual approaches. Patterned brickwork is proposed for the three storey podium, with the view to respond to the masonry character of the adjoining State heritage place, which I support. The apartment floors above are horizontally articulated with continuous balconies on the west and east facades. The party walls and integrated air conditioning condenser

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enclosures provide secondary vertical articulations. The north and south elevations of the residential building are proposed to be solid in-situ concrete walls. While I support the intent to provide a neutral backdrop to the State heritage place, I am concerned by the challenges of controlling the concrete finishes to deliver the intended visual outcome. I support the provision of vertically expressed windows to the southern elevation. In my opinion, an opportunity exists to architecturally express the egress stairs at north and south ends.

The architectural expression of the three storey townhouses is familiarly residential. I support the proposed approach, as the townhouses respond to the established scale of the existing built forms to the east of the subject site, while remaining coherent with the overall development.

On each apartment floor, four apartments are located on both sides of the central corridor. I support the mix of apartment types proposed, including affordable housing options. I also support the proposed apartment configurations, which are highly efficient and afford outlook, and access to natural light and ventilation to all habitable rooms. Acknowledging the proposed balcony depth of 1.8 metres is below the minimum dimension set by the City of Adelaide, I consider them functional in the proposed configuration. I generally do not support the location of air conditioning condenser units on balconies, due to adverse impacts on the amenity of that space and the street. While I support the intent to locate the condensers within integrated furniture pieces, further information is required to demonstrate that the proposed arrangement successfully mitigates the environmental impacts on balcony user amenity. An opportunity exists to enlarge the private open space provisions at the top of the podium to vary the apartment offerings. It can also assist in improving passive surveillance of the public spaces. While I acknowledge the rational planning approach to mirror the apartment layouts along the central corridor, I remain concerned about the location of apartment entries opposite each other, which does not reflect good practice in apartment living. I recommend the review of the apartment entry locations to improve residents' privacy and amenity. I support the provision of access to outlook, natural light and ventilation at the ends of corridors.

The proposal includes three levels of above ground car parking within the podium. I typically do not support above ground car parking for this location, due to the risk of poor urban design outcomes. However, I support the proposed arrangement on balance, as the car parking floors have sufficient ceiling heights to allow for future adaptability.

I strongly support the provision of the publicly accessible square within the development site. However further information is required to demonstrate that the proposed soft landscaping can be successfully sustained and maintained. I recommend further development of the landscaping design, incorporating the urban design and CPTED principles. It is important to the overall success of the project that the active involvement of a landscape architect is maintained, to ensure successful outcomes for all communal open spaces.

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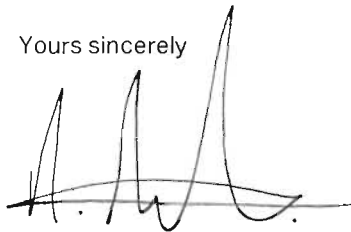
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2014/11234/01

Ref No:
12198668

To ensure the most successful design outcome is achieved the State Commission Assessment Panel (SCAP) may like to consider particular aspects of the project, which would benefit from protection as part of the planning permission, such as:

- Development of a high quality lobby area to provide a clear and intuitive connection between 'Penny Square' and Nelson Street.
- Implementation of CPTED strategies to ensure that the public spaces are safe at all times for the residents and the wider community.
- Provision of further information to demonstrate that the proposed air conditioning condenser enclosure arrangement successfully mitigates the environmental impacts.
- Review of the apartment entry locations to avoid adjacency.
- Provision of further information to demonstrate the successful sustainment and maintenance of the proposed soft landscaping.
- A high quality of external materials for building and landscaped areas supported by the provision of a materials sample board.

Yours sincerely



Nick Tridente
Associate Government Architect

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Helen Dand 8203 7380

F/S10/0038/2017

21 December 2017

045



Development Assessment Commission
GPO Box 1815
Adelaide SA 5001

Attention: Robert Kleeman

Dear Mr Kleeman

Application: S10/38/2017 (your ref. 020/A068/17)
Applicant: FLAGSHIP (PENNY PLACE) P/L
Address: KODO, 23-31 Angas Street, ADELAIDE SA 5000
Description: Demolition of existing building and construction of a 21-storey mixed use development and a 3-storey residential flat building, ancillary car parking, landscaping, public circulation areas and landscaped square.

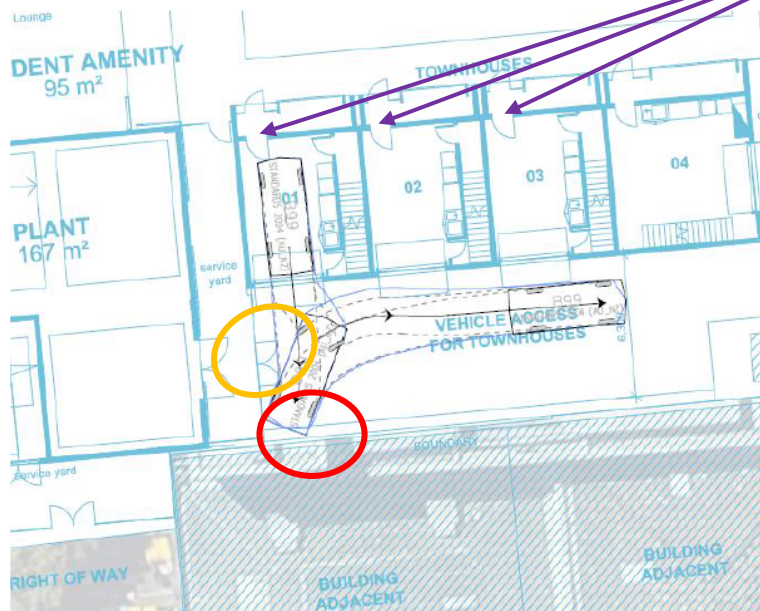
Council has the following comments to make on the above application:

TRAFFIC/TRANSPORT

There are no traffic/transport related objections to this development, subject to the following matters being addressed:

- The number of on-street permit parking spaces that are impacted need to be appropriately resolved, including consultation with permit holders and a review of kerb-side space to be conducted in liaison with Council.
- Car parking layout should comply with AS2890.1
- Doors appear to be opening into the manoeuvring space for Townhouse 1, which is a risk to those using the doorway. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a yellow circle.
- The swept path for Townhouse 1 appears to show the vehicle manoeuvring into the wall. Appropriate manoeuvring areas need to be provided. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a red circle.
- Doors for entry to the garage from the public square area appear to conflict with the position of parked vehicles and appear to be unusable. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a purple circle.
- The location and design of the proposed water meter adjacent Townhouse 4 requires revision in order to provide sight lines for pedestrians. The relevant excerpt from Figure 4.5 of the report is provided below.

Figure 4.2: Townhouse 1 Egress



- Pedestrian sight splays as per the AS/NZS2890.1:2004 are achieved at the access of Townhouse 1 – 3. Figure 4.5 demonstrates that the proposed water meter restricts the required sight splays at the crossover of Townhouse 4. The pedestrian sight splays and final location and configuration of the water meter can be addressed in Detailed Design.

Figure 4.5: Townhouse 4 Pedestrian Sight Splays



DESIGN STRATEGY COMMENTS

It is important for the SCAP to be aware that while City of Adelaide administration is currently engaged in discussions with the proponent with regard to the proposal for sections of this development (and the adjacent stage 1) to be vested to City of Adelaide as public space, a formal Council decision has not yet been made. Therefore, the current application should be considered with this understanding that the areas referred to in the application as 'public square' have not yet been formally considered or agreed to by Council.

Casual surveillance of the proposed public square

Provision of opportunities for casual surveillance of any new public green space is important for its success so members of the public feel confident moving through, and spending time in it, and the space can perform its community benefit. It is noted that the ground floor retail spaces in this building and adjacent Kodo would provide activation and surveillance during business hours. While the townhouses and residential lounge on the ground floor could provide some further surveillance when occupied, there is concern the casual surveillance of the new public space outside retail hours is less than optimal. The set back of the Penny Place tower means that only residents from levels 7 and above will have sight lines into the square. Similarly, from the Kodo tower to the north, only living spaces above level 9 have any opportunity for casual surveillance of the public space.

CPTED on east-west pedestrian link from Nelson St

We note the configuration of the cores at the northern and southern ends of the building play an important role in the proponent's approach to the development's configuration. While efficiency of apartment configuration and related affordability has merit, it has created a completely inactive ground floor northern frontage and CPTED concerns for the adjacent east-west pedestrian link. The area around the refuse store in particular creates a concealment point that pedestrians walking from the development west to Nelson Street can't view on approach.

Legibility of Penny Place Lobby

Establishing the primary residential lobby entrance fronting the proposed public space is supported as it will contribute to the activation of the pedestrian spaces. It is important that the lobby entrance has high legibility, ideally through architectural devices not just wayfinding. It is also important that the lobby has good legibility and functionality from Nelson Street when close vehicle access is needed.

Proposed Public Square – Interface and Detailed Design

The design of the proposed public space needs significant refinement, particularly to address pedestrian desire lines and to successfully resolve transition spaces between residents only spaces and public space. City of Adelaide administration has had positive preliminary discussions with the proponent regarding refining the design to be consistent with City of Adelaide requirements and standards to be considered for vesting to City of Adelaide as a public space.

OPERATIONAL SUPPORT (CLEANSING) COMMENTS

Having reviewed the proposed waste management plan there are no objections to the proposed.

ROADS/FOOTPATHS - ENGINEERING RELATED COMMENTS

There are no road/footpath related objections to this development, subject to the following matters being addressed:

- Any disused driveway inverts resulting from the development are to be reinstated to equivalent footpath levels to City of Adelaide standards and specifications.
- Any damage caused to City of Adelaide's road, footpath and kerbing infrastructure during development will be the responsibility of the developer to rectify to a standard that equals or improves the pre-development condition.
- Existing crossovers and new crossovers have been highlighted under this development. All new crossovers or alterations to existing crossovers firstly require City of Adelaide approval outside of the DA process. They need to be to City of Adelaide standards and specifications via the City Works Guidelines.
- Existing boundary (back of path) levels must not be modified. Finished floor levels should be based around retaining the existing back of path levels subject to the following:
 - If the level difference between top of kerb and back of path is less than 50 mm
 - If the existing cross fall(s) exceed 4% (1:25)

If any of the above conditions exist for any footpath infrastructure that service the perimeter of the site boundary, then please contact the Asset Manager for Water Infrastructure prior to setting finished floor levels.

TORRENS & STORM WATER RELATED COMMENTS

There are no storm water related objections to this development, subject to the following matter/s being addressed:

- Stormwater runoff from the proposed residential development must be retained within the property boundaries, collected and discharged to the Penny Place and Nelson Street road reserves.
- Stormwater runoff flows from any proposed siphonic drainage systems must be reduced to equivalent gravitational flow rates prior to discharge to the Penny Place and Nelson Street road reserves.
- Collected seepage water from the proposed roof garden, balcony planter boxes and the public square must be discharged to either sewer or a recycled water reuse system. Collected surface runoff from the proposed public square landscaping, treated through the proposed water pollution interception device, can be discharged to Councils stormwater system.
- The level of any proposed stormwater grated inlet pits or openings within the property boundary must be designed with an adequate freeboard to the 1% AEP flood level assumed to be "top of kerb" level adjacent to each property connection in Penny Place and Nelson Street.

LIGHTING / ELECTRICAL/CCTV RELATED COMMENTS

There are no lighting related objections to this development, subject to the following matters being addressed:

- The proposed development works may impact on the public lighting within the proximity of the development site. The existing street lighting on Angas Street consists of SA Power Networks owned old tram pole installed to the west of the site, with overhead cabling. The existing street lighting in Seymour Place and Penny Place is SA Power Networks street lighting.
- It appears from the developments site plan that area '4 Penny Place' will be accessible by the public and in turn will need street lighting to be installed by the development to meet Councils' requirements. The area '3 Reserve & B', if accessible by the public will also need street lighting to be installed by the development to meet Councils' requirements.
- Any temporary hoarding or site works require modification of existing Council and/or SA Power Network's public lighting (including associated infrastructure such as cabling etc.) shall meet Councils' requirements and all costs borne directly by the developer.
- All modifications requiring temporary removal/relocation/provision of temporary lighting/reinstatement of existing Council and/or SA Power Network's public lighting (including associated infrastructure such as cabling etc.) shall meet Councils' requirements. The works shall be carried out to meet Councils' requirements and all costs borne directly by the developer.
- All damage to City of Adelaide's infrastructure, including damage to public lighting and underground ducting etc. caused by project works or loading of site crane onto pathways will be repaired to meet Councils requirements and the cost of the developer.
- If new canopies over the footpath are to be constructed as part of these works, then lighting to meet City of Adelaide's under verandah requirements shall be installed.
- Obtrusive Lighting – Lighting design and installation to be fully compliant with Australian Standard - AS 4282 – 1997 Control of the obtrusive effects of outdoor lighting. Sign off by consultant is required to confirm compliance. Relevant lighting calculation grid detailing property boundary lines for should be provided for Council's record.

PROPERTY BUILDINGS RELATED COMMENTS

There are no City of Adelaide property related objections to this development, subject to the following matters being addressed:

- Compliant DDA Access.
- Effective access and parking arrangements made for the nature of use of the site e.g. restaurant patrons.

Yours faithfully

Rebecca Rutschack
MANAGER - PLANNING ASSESSMENT

INTRO

22 January 2018

Benjamin Scholes
Project Officer – CBD & Inner Metro Team
Strategic Development Assessment

Via email: Benjamin.Scholes@sa.gov.au

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Dear Ben,

RE: Penny Place Apartments – Response to RFI

Intro act on behalf of Flagship (Penny Place) Pty Ltd (the applicant) with respect to the proposed development mixed use multi-storey building commonly referred to as the Penny Place apartments.

A revised drawing set has been prepared in response to this RFI and is provided in Appendix 01.

The revised drawings improve the presentation of the ground floor lobby to the public realm and links, and its presentation to the Angas Street approach.

This correspondence has been prepared in response to the request for information received from the relevant referral agencies. I provide a response to each of the agencies raised below:

OFFICE FOR DESIGN AND ARCHITECTURE SA

LOBBY AREA TO PROVIDE CONNECTION BETWEEN 'PENNY SQUARE AND NELSON STREET

The proposed development provides a link through the lobby which connects the proposed area of open space to Nelson Street. The detailed design of this space has not yet been resolved. It is proposed that this occurs as part of the design development and construction documentation phase which occurs as part of any building project.

CPTED STRATEGIES

The proposed development offers a range of passive and active surveillance techniques to ensure that the open space areas remain safe at all times.

Passive surveillance opportunities are provided from apartment balconies, the town houses, ground floor communal areas, and ground floor retail areas. Active surveillance opportunities will be provided in the form of security cameras. All public areas will be well lit after hours to ensure they remain safe during night time

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periods. The revision of the ground floor lobby design has also improved the building presentation to the pedestrian links and square, and improves the potential for passive surveillance.

AIR CONDITIONING CONDENSER ENCLOSURE

Further detail of the air condition condenser enclosure has been provided as part of Appendix 02. An email from Daikin air conditioning also indicates the acceptability of the louvre design. The suitability of the air conditioning enclosure has been discussed within the acoustic report provided at the planning stage. A copy is provided as part of Appendix 02 for clarity.

REVIEW OF APARTMENT ENTRY LOCATIONS

Apartment entry locations will not be reviewed. The floor plan has been developed to ensure it is highly rationalised. The floor plan will not be altered.

LANDSCAPING MAINTENANCE

Revised landscaping plans and a maintenance schedule is provided in Appendix 03.

MATERIALS BOARD

A materials board will not be provided at this stage. Cognisant of the simple nature of the materials selected the provided materials sheet is considered to adequately demonstrate the design intent.

ADELAIDE CITY COUNCIL

TRAFFIC AND TRANSPORT

GTA Traffic Consultants have responded to the Adelaide City Council comments, this response is provided in Appendix 04.

SURVEILLANCE OF PROPOSED PUBLIC SQUARE

The proposed development offers a range of passive and active surveillance techniques to ensure that the open space areas remain safe at all times.

Passive surveillance opportunities are provided from apartment balconies, the town houses, ground floor communal areas, and ground floor retail areas. Active surveillance opportunities will be provided in the form of security cameras. All public areas will be well lit after hours to ensure they remain safe during night time periods. The revision of the ground floor lobby design has also improved the building presentation to the pedestrian links and square, and improves the potential for passive surveillance.

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The proposal for a public square is based on the acceptance of the land and works on completion as the developer's contribution by ACC and SCAP in the same way that has been proposed and is being finalised as part of Stage 1. I propose that this becomes a condition of consent such that all parties are clear on the design scope and valuation of the works. The proponent commits to working with the ACC in a similar manner to that which has occurred as part of Stage 1.

CPTED EAST-WEST LINK FROM NELSON STREET

It is proposed that this link is covered by outdoor lighting and by active surveillance opportunities such as cameras.

LEGIBILITY PENNY PLACE LOBBY

The final appearance of the lobby space will subject to detailed design, however, it is the design intent that this is a permeable, legible space.

PROPOSED PUBLIC SQUARE

The final design of the proposed open space will be subject to detailed negotiations with the Adelaide City Council. It is proposed that this occurs as a condition of consent.

ROADS/FOOTPATH

The proponent acknowledges the comments raised by Council's engineering department relating to roads and footpaths.

In response to the statement that new or alterations to existing crossovers requires a separate approval from council, I note that Clause (3)(b) of Section 221 of the *Local Government Act 1999* states:

the purpose of the alteration is to permit vehicular access to and from land adjoining the road and the alteration is approved as part of a development authorisation under the Development Act 1993

Should the application receive Development Approval this also results in an approval for the crossover. No further approvals are required.

STORMWATER

The proposed commentary surrounding stormwater is acceptable to the project team. The project team will work with the Adelaide City Council moving forward.

SERVICES

The proposed commentary surrounding Lighting/Electrical/CCTV is acceptable to the project team. The project team will work with the Adelaide City Council moving forward.

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DDA ACCESS

A letter has been provided by Katnich Dodd indicating the proposal can accord with all accessibility requirements. This correspondence has been provided in Appendix 05.

STATE HERITAGE UNIT

The proposed conditions are acceptable to the project team. The project team will liaise with Heritage to resolve the outcomes desired.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



Anthony Gatti
Senior Planning Advisor

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APPENDIX 01

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Penny Place Stage 2 – Revisions from Original Planning Submission

SK01

- No change, not re-issued

SK02

- Northern Core Adjusted to allow improved passive surveillance to Northern Pedestrian Link.
- Fire Control Room and Mail Room Location Adjusted to Improve legibility of Lobby from Angus Street Approach
- Retail Location adjusted
- Additional Landscape detail added
- .

SK03

- Northern Core Adjusted.

SK04

- Northern Core Adjusted.

SK05

- Northern Core Adjusted.
- Podium Balconies increased in size

SK06

- Northern Core Adjusted.

SK07

- Northern Core Adjusted.
- Alignment of plant screen adjusted

SK08

- Northern Core Adjusted.
- Lobby Glazing Added

SK09

- Northern Core Adjusted.
- Lobby Glazing Added

SK10

- Minor Graphical Changes
-

SK11

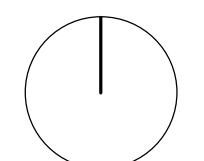
- Northern Core Adjusted

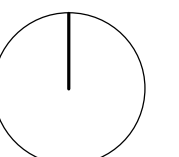
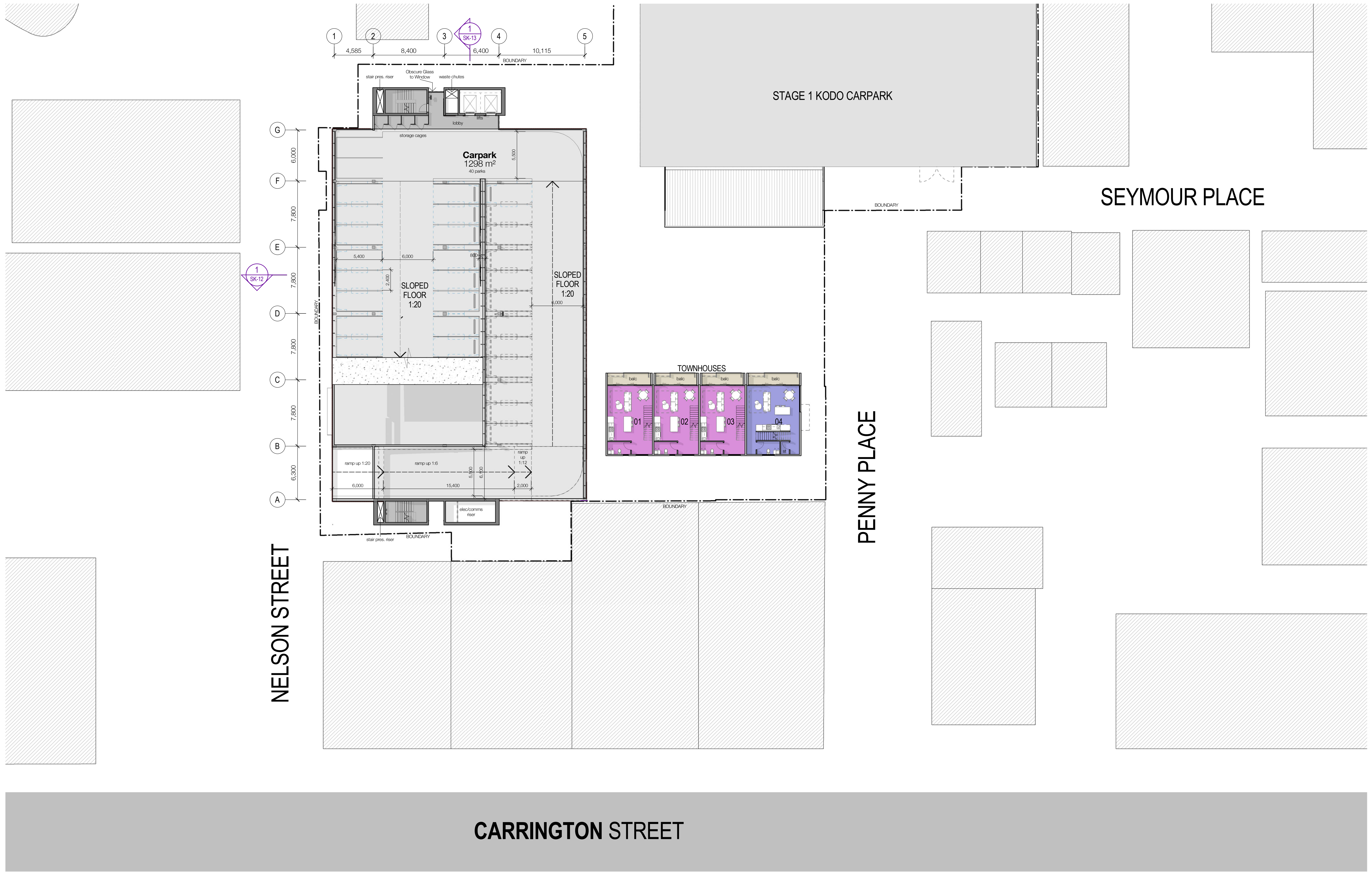
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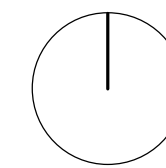
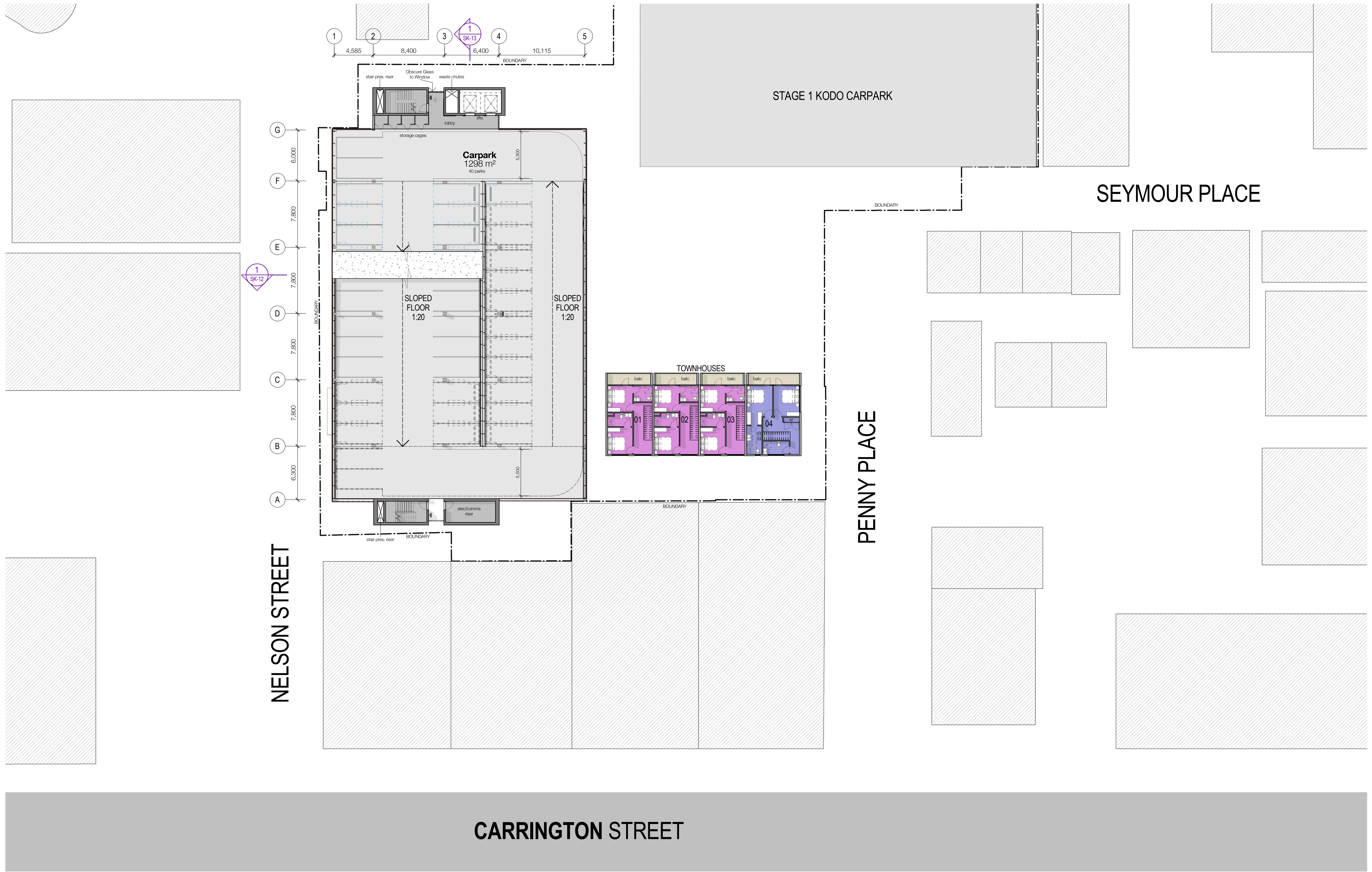
- Minor Graphical Changes
- Plant Screen Location Adjusted

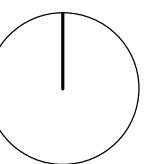
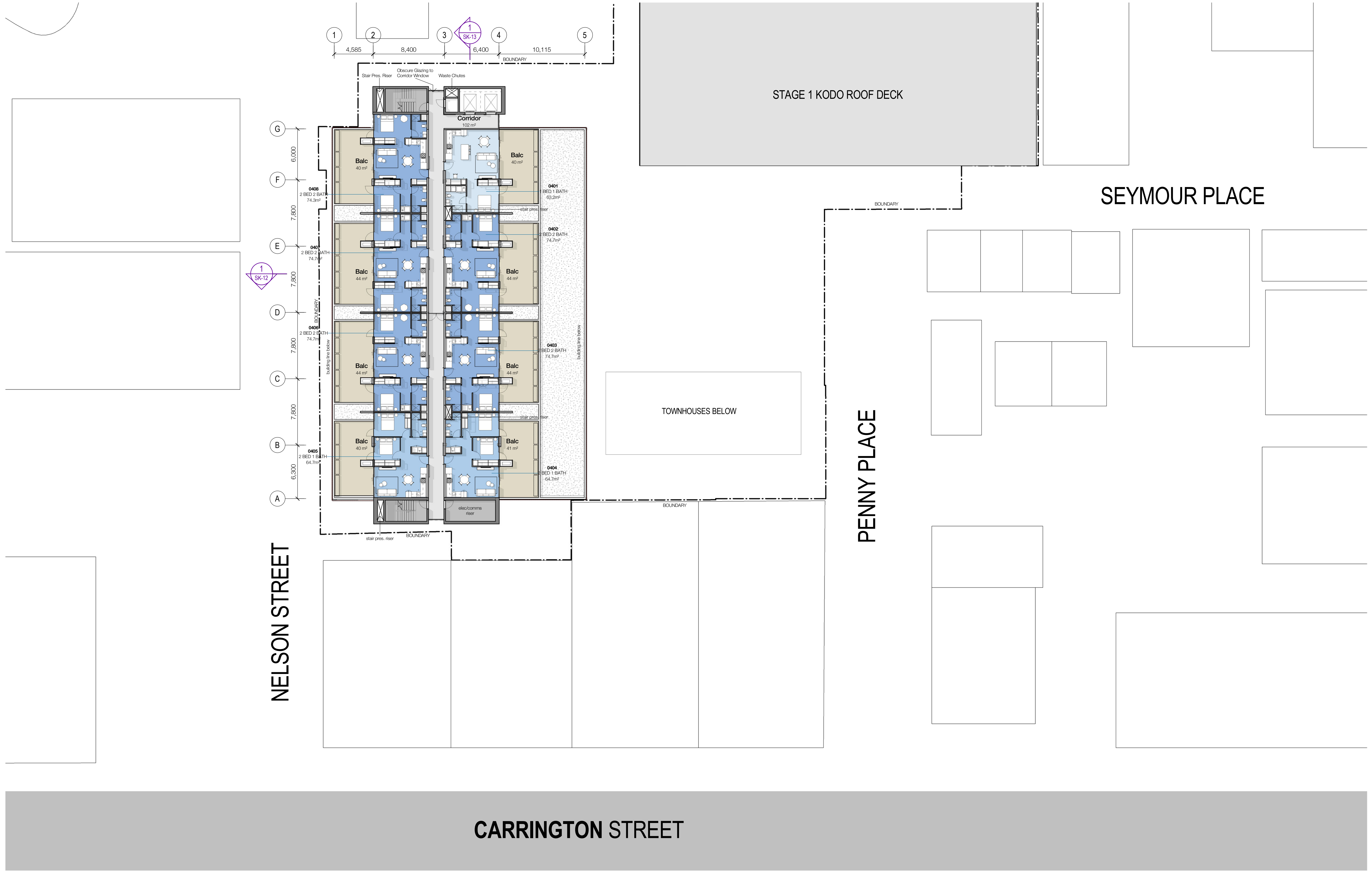
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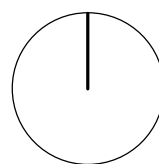
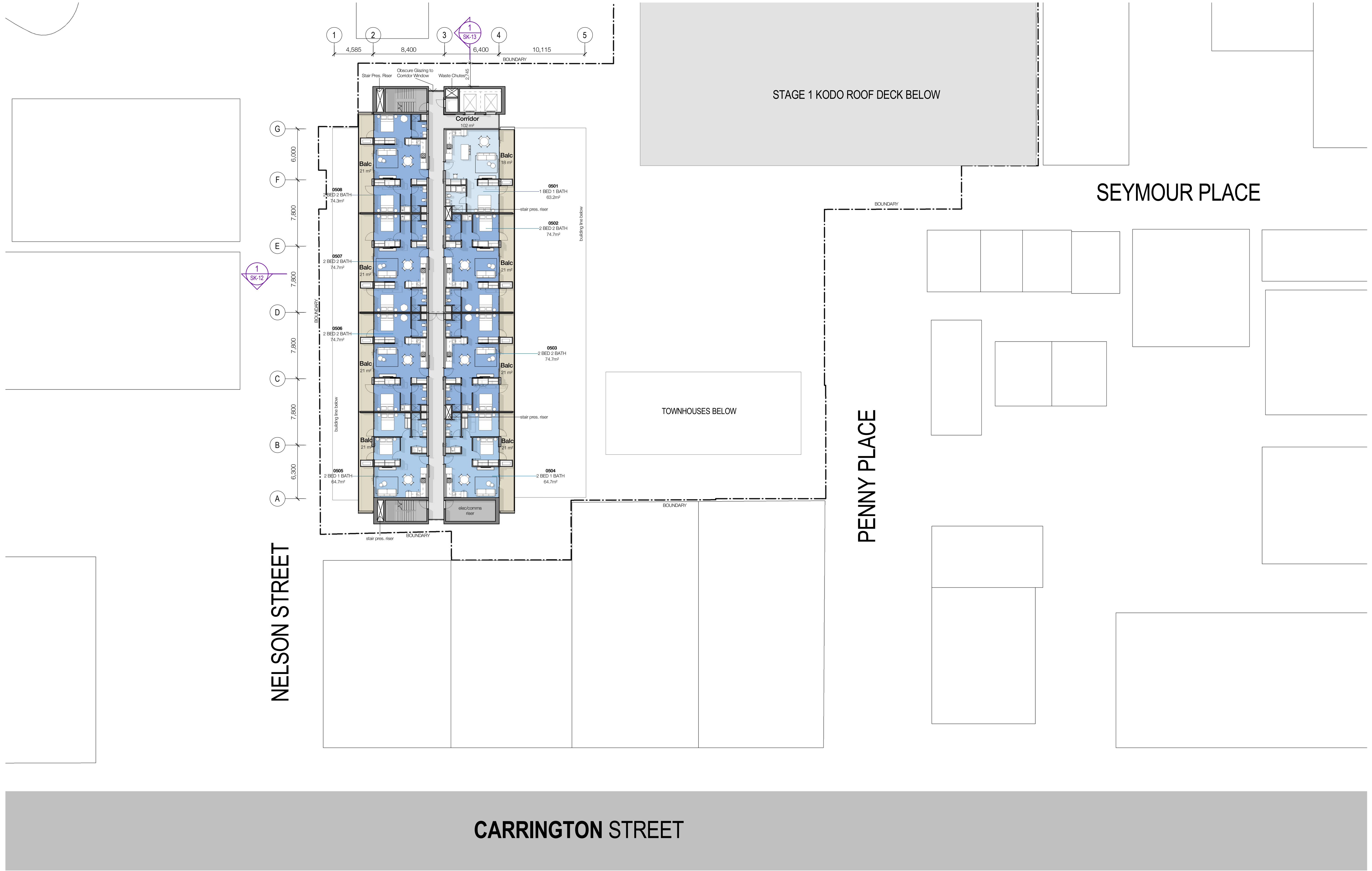
- Northern Core Adjusted

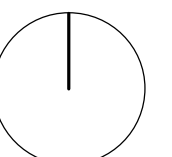
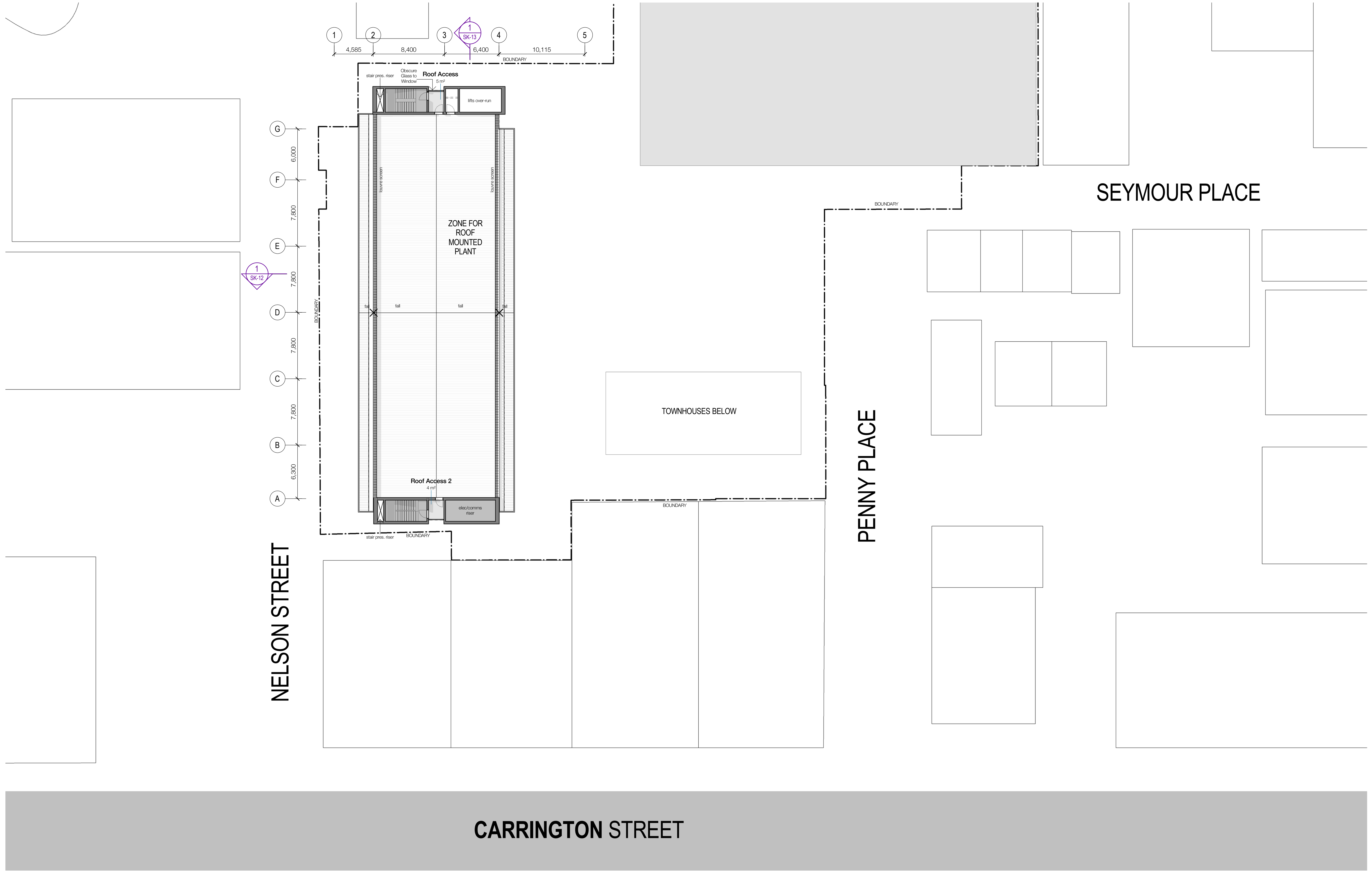








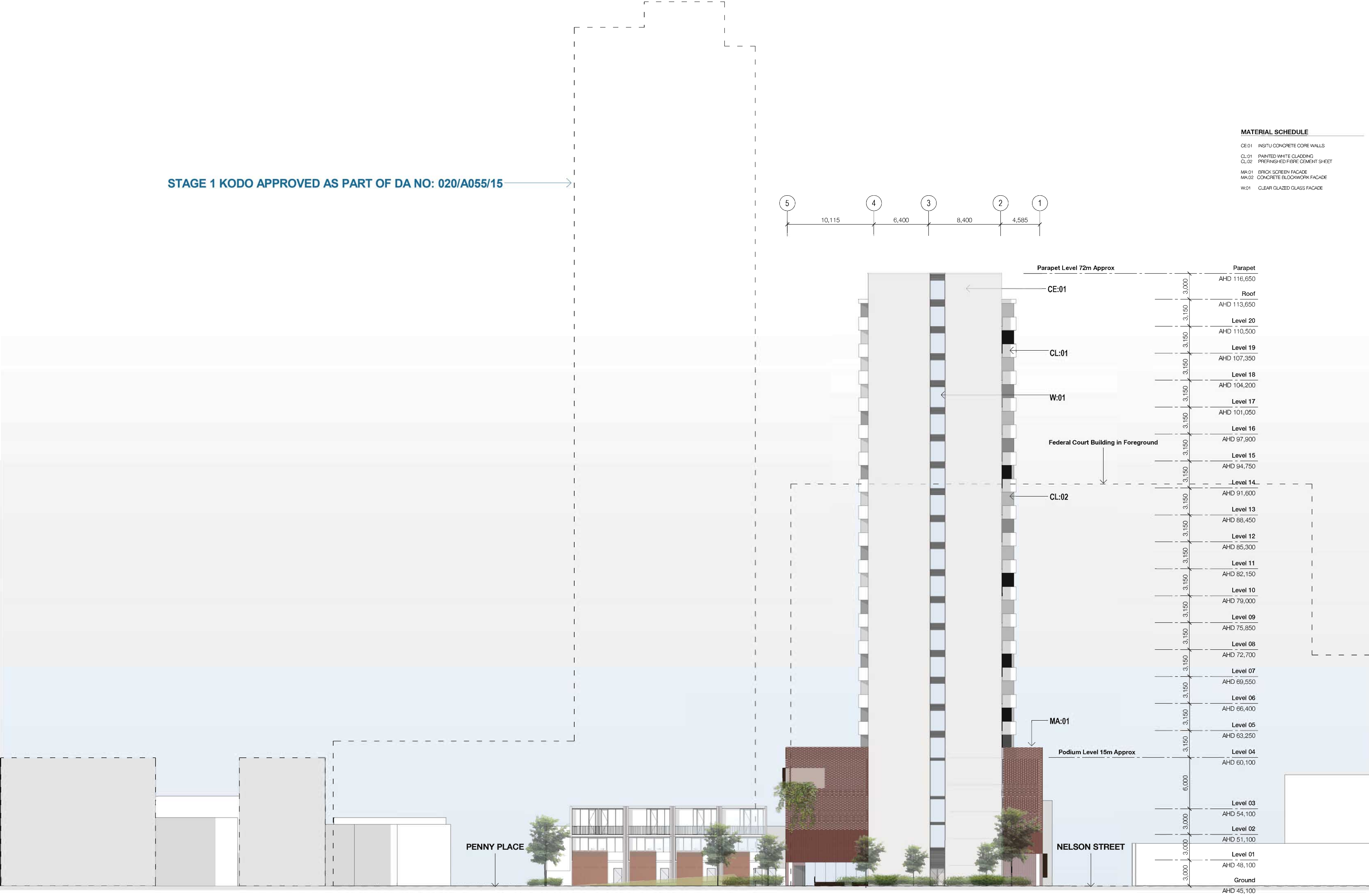




STAGE 1 KODO APPROVED AS PART OF DA NO: 020/A055/15

MATERIAL SCHEDULE

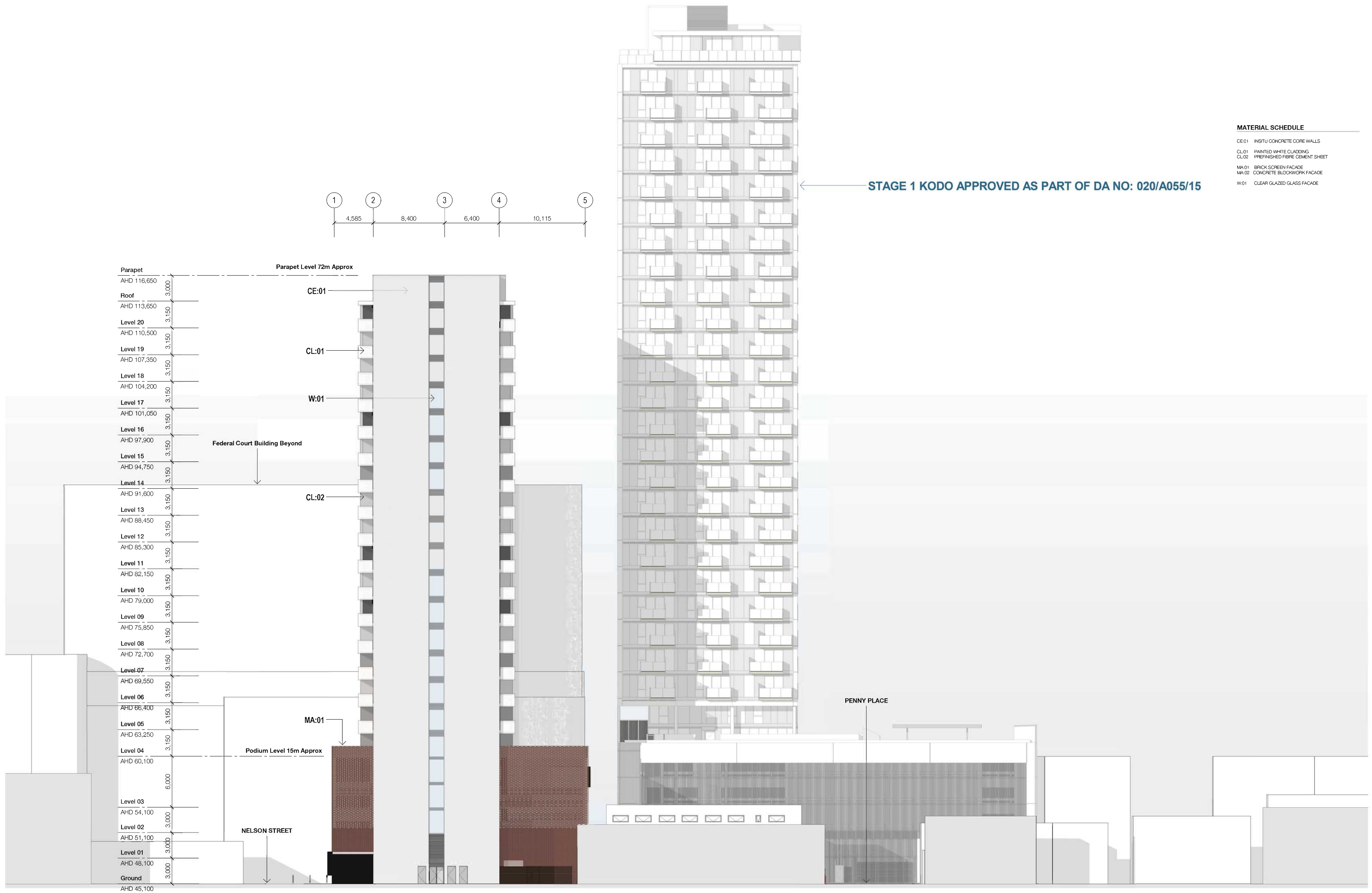
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- CL:01 PAINTED WHITE CLADDING
- CL:02 PREFINISHED FIBRE CEMENT SHEET
- MA:01 BRICK SCREEN FACADE
- MA:02 CONCRETE BLOCKWORK FACADE
- W:01 CLEAR GLAZED GLASS FACADE



MATERIAL SCHEDULE

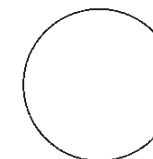
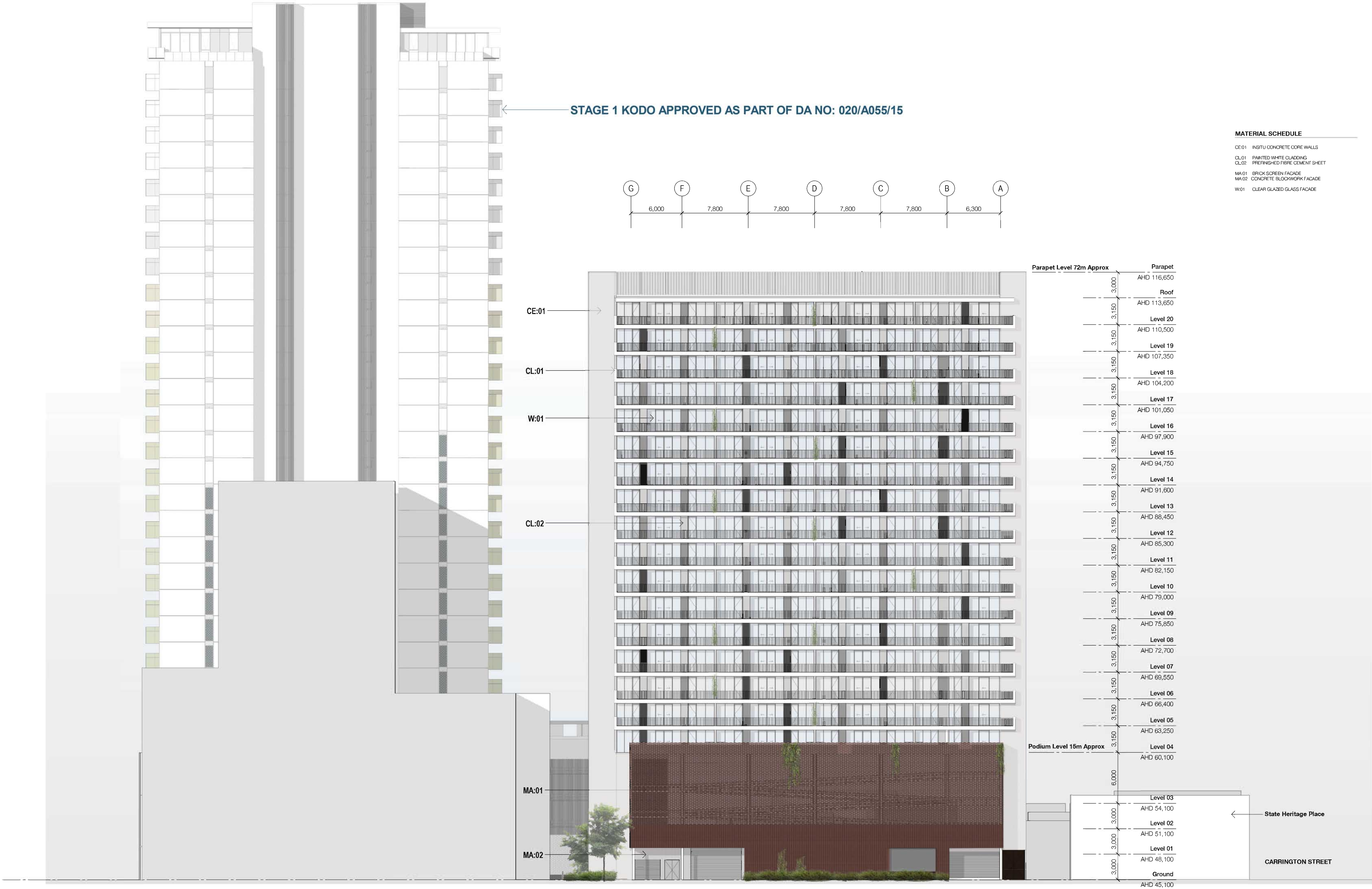
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W:01 CLEAR GLAZED GLASS FACADE

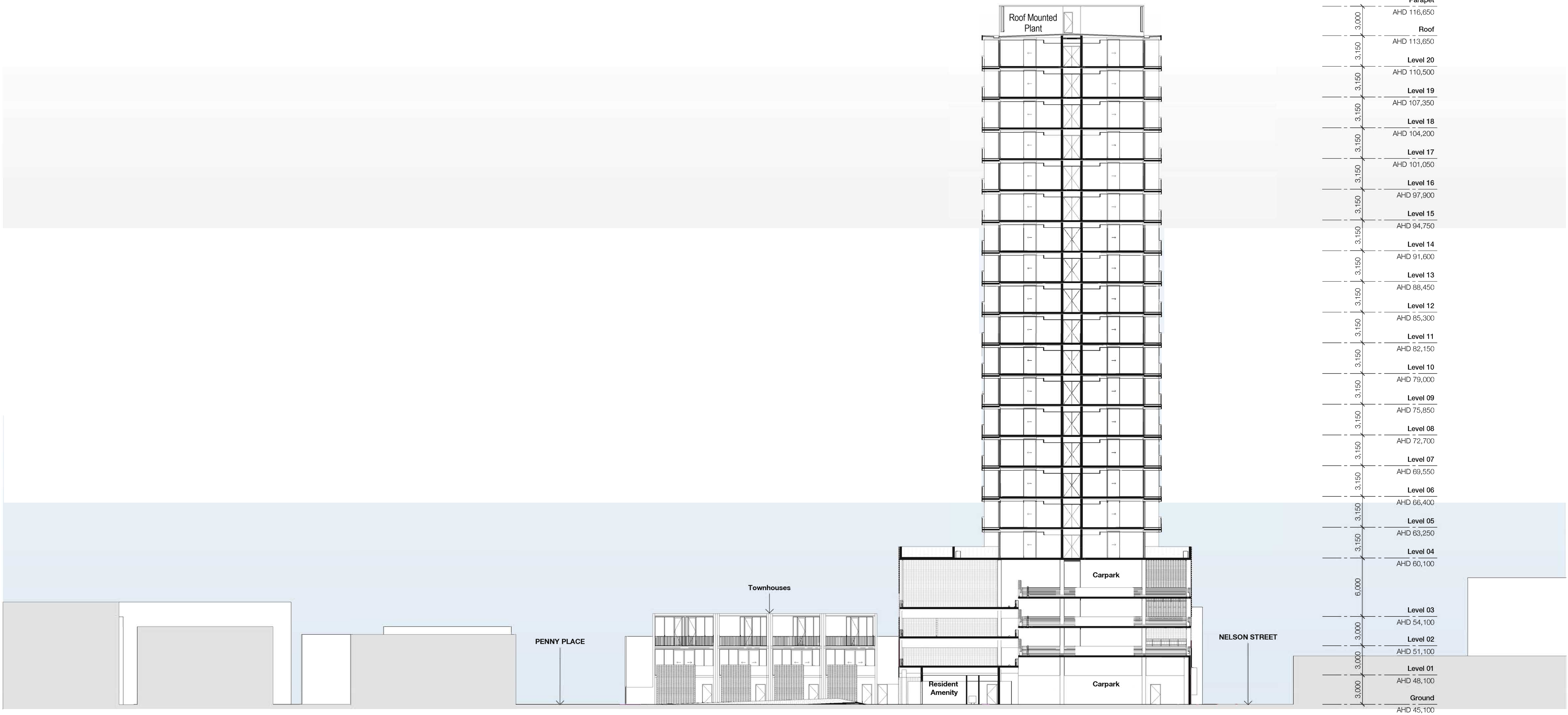




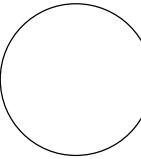
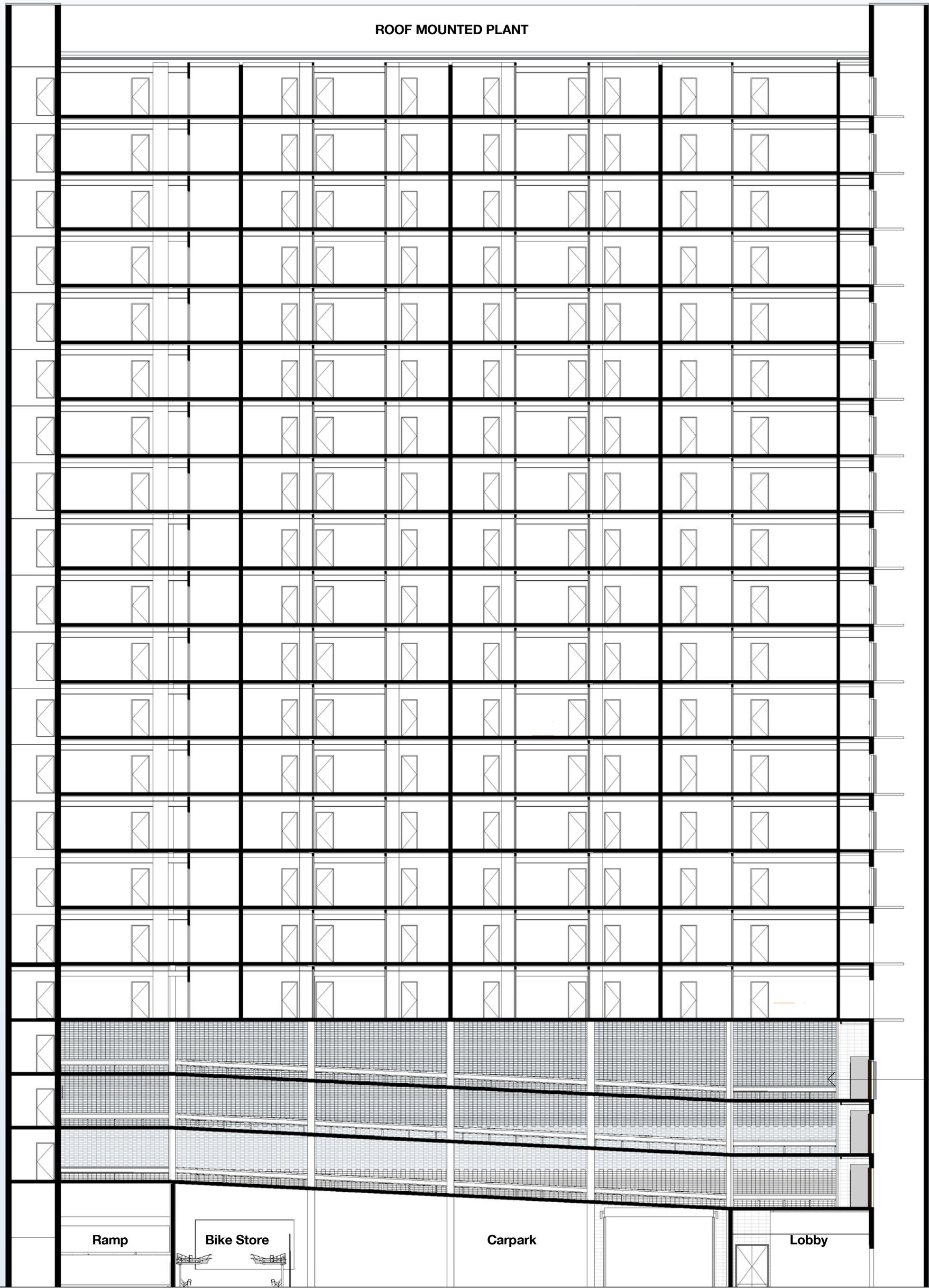
MATERIAL SCHEDULE

- CE:01 IN SITU CONCRETE CORE WALLS
- CL:01 PAINTED WHITE CLADDING
- CL:02 PREFINISHED FIBRE CEMENT SHEET
- MA:01 BRICK SCREEN FACADE
- MA:02 CONCRETE BLOCKWORK FACADE
- W:01 CLEAR GLAZED GLASS FACADE





Parapet	
AHD 116,650	3,000
Roof	
AHD 113,650	3,150
Level 20	
AHD 110,500	3,150
Level 19	
AHD 107,350	3,150
Level 18	
AHD 104,200	3,150
Level 17	
AHD 101,050	3,150
Level 16	
AHD 97,900	3,150
Level 15	
AHD 94,750	3,150
Level 14	
AHD 91,600	3,150
Level 13	
AHD 88,450	3,150
Level 12	
AHD 85,300	3,150
Level 11	
AHD 82,150	3,150
Level 10	
AHD 79,000	3,150
Level 09	
AHD 75,850	3,150
Level 08	
AHD 72,700	3,150
Level 07	
AHD 69,550	3,150
Level 06	
AHD 66,400	3,150
Level 05	
AHD 63,250	3,150
Level 04	
AHD 60,100	6,000
Level 03	
AHD 54,100	3,000
Level 02	
AHD 51,100	3,000
Level 01	
AHD 48,100	3,000
Ground	
AHD 45,100	



INTRO

APPENDIX 02

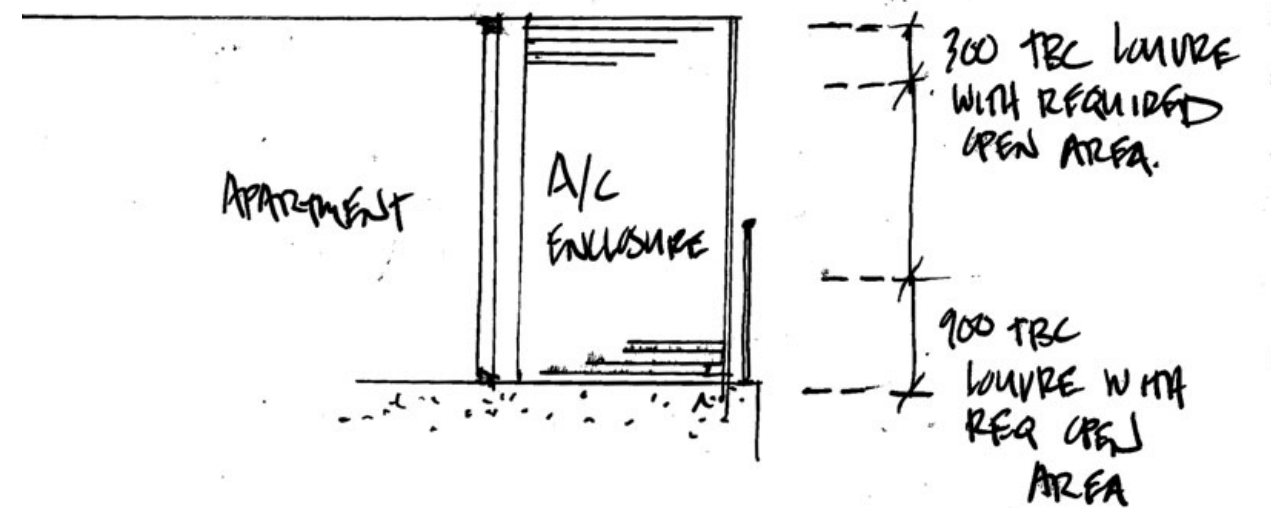
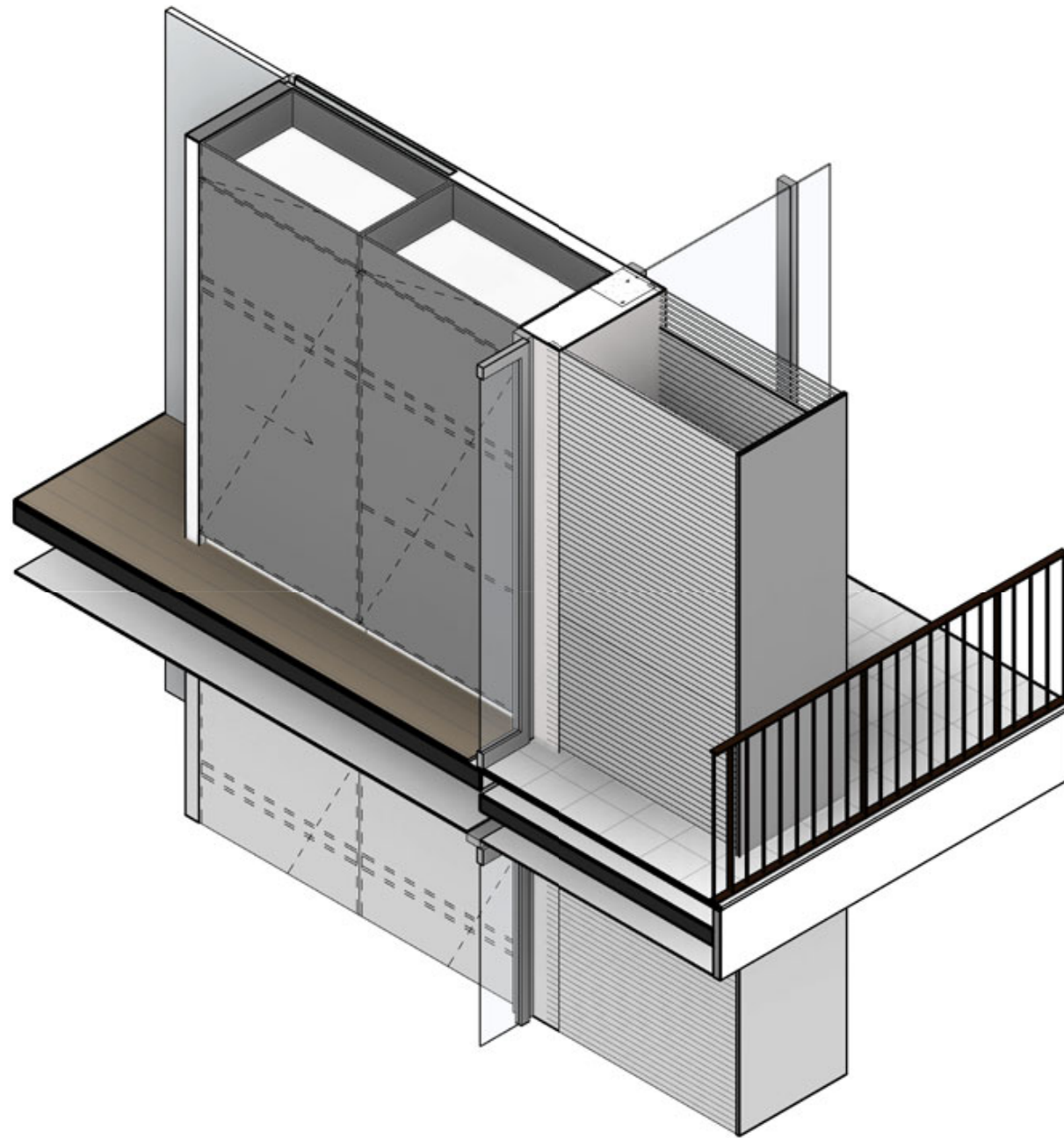
Intro Design Pty Ltd
L11 44 Waymouth Street
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Adelaide SA 5000

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info@intro.com.co

intro.com.co

08 Facade Details Apartments

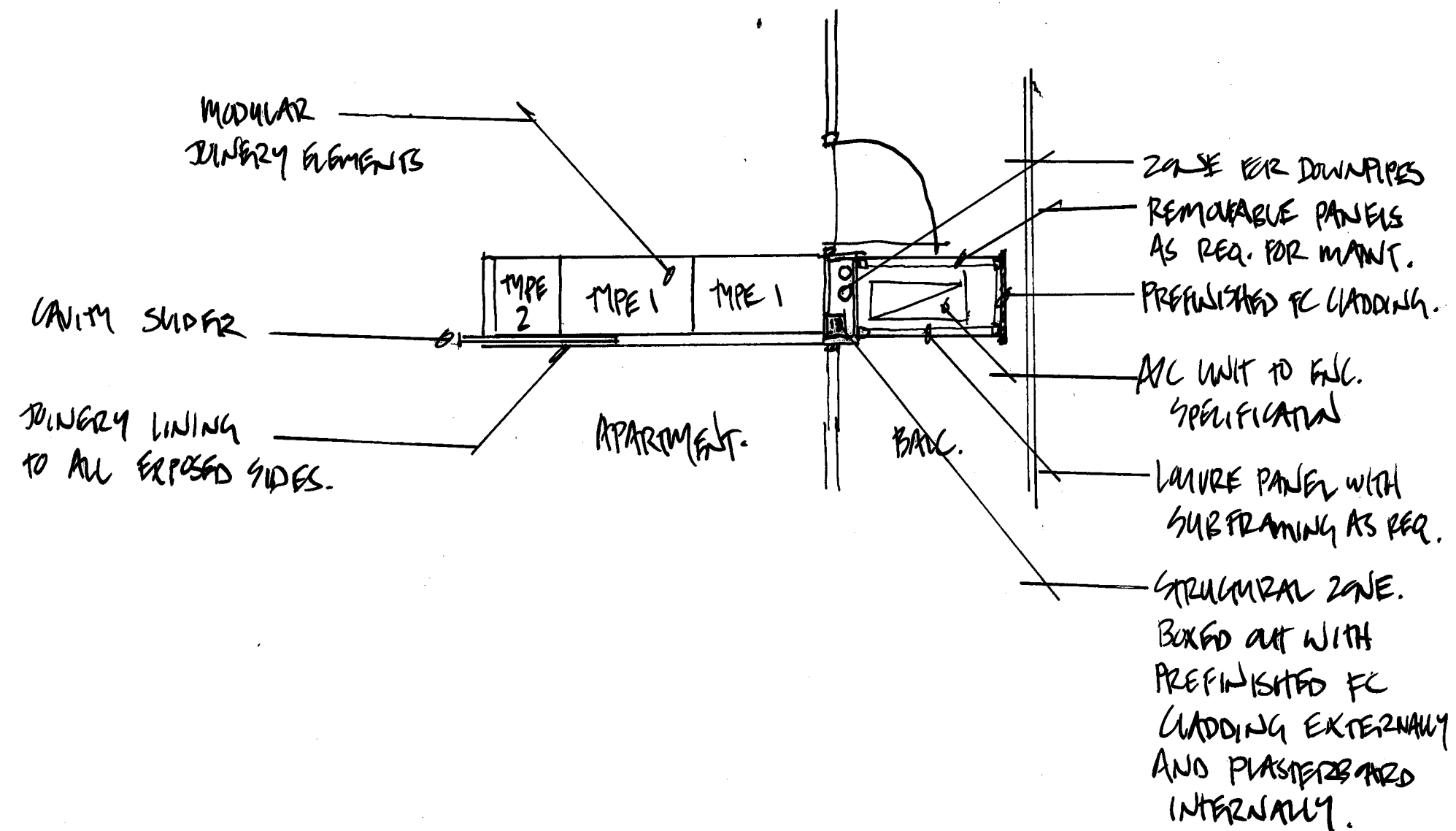
Typical AC Enclosure Axo



AXO

Elevation

08 Facade Details Apartments



Plan

Anthony Gatti

From: Collins, David <David.Collins@wsp.com>
Sent: Tuesday, October 24, 2017 4:47 PM
To: Peter Endall
Cc: Adrian Reveruzzi; Narapuraju, Krishna
Subject: RE: Penny Place 2 Concept design meeting

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Peter,

This is what I have received from Dakin to date. As the design develops we can also have other Manufacturers to review (ie Mitsubishi Electric) so we don't lock ourselves into 1 manufacturer from a commercial point of view,

FYI, Daikin also offer a CFD analysis without charge, however they do expect to be utilised when they get to this level

Hi Dave

The details of the proposed louvres you provided seem adequate in terms of % free area and appear to not be too close together as to restrict condenser discharge. The horizontal discharge condenser style is not designed for any external static pressure on the condenser fan, however having said that, any proposed louvre arrangement should as a general guideline should not produce more than 10-15Pa external pressure drop across the louvred arrangement. Any external pressure on the fan will reduce the discharge air flow and hence the performance of the system, however the guideline given should not substantially decrease the system capacity and general operation.

If you have any questions on the above or require further information please do not hesitate to contact me.

Regards

Con Liascos B.E (Mech)
Account Manager-Consulting Sales

DAIKIN AUSTRALIA PTY LTD

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PREMIER CAPITAL DEVELOPMENTS

PENNY PLACE STAGE TWO DEVELOPMENT APPLICATION ACOUSTIC REPORT

OCTOBER 2017



Question today *Imagine tomorrow* Create for the future

Penny Place Stage Two Development Application Acoustic Report




Premier Capital Developments

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wsp.com

REV	DATE	DETAILS
0	12 October 2017	Updated based on revised balcony details

	NAME	DATE	SIGNATURE
Prepared by:	Simon Moore	12 October 2017	
Reviewed by:	Andrew Boladz	12 October 2017	
Approved by:	Adrian White	12 October 2017	

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EXECUTIVE SUMMARY

The following report provides an acoustic assessment of the proposed Penny Place Stage 2 development, located between Penny Place and Nelson Street, Adelaide.

Proposed design criteria for the project utilises the legislative requirements stated in Adelaide City Council Development Plan and the South Australian EPA Environment Protection (Noise) Policy 2007.

Design advice is based on an environmental noise survey conducted at the proposed site and the adjacent surroundings.

The report concludes that the proposed Penny Place Stage 2 development will be able to comply with the acoustic requirements outlined in the Adelaide City Council Development Plan, as follows:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

1 PROJECT BACKGROUND

1.1 INTRODUCTION

WSP was commissioned by Premier Capital Developments to conduct an acoustic assessment as part of the Development Application relating to the proposed development located between Penny Place and Nelson Street, Adelaide.

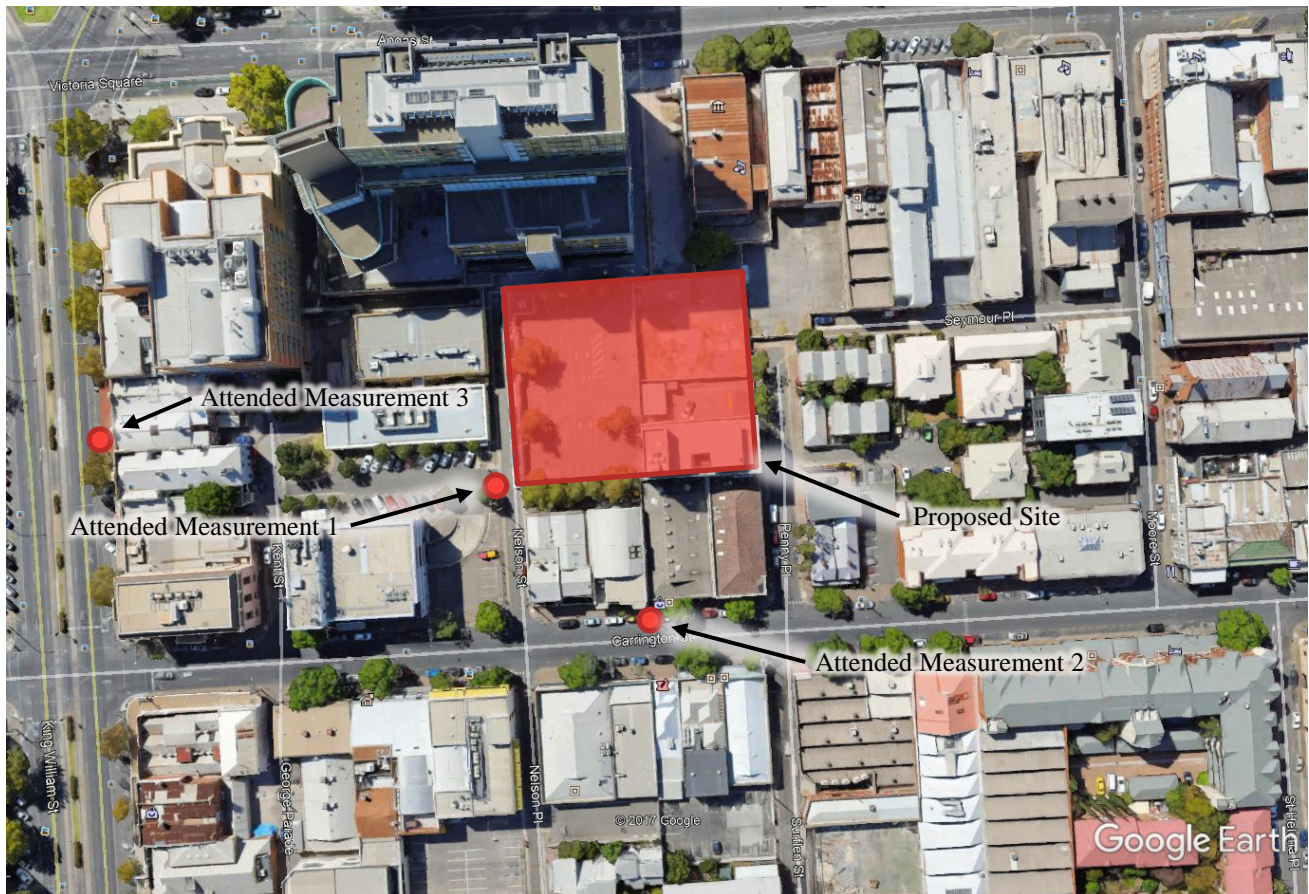
The acoustic assessment has been conducted in accordance with the requirements of the Adelaide City Council Development Plan and the South Australian EPA Environment Protection (Noise) Policy 2007.

This report provides information regarding:

- An overview of the proposed development works.
- Acoustic criteria applicable to the proposed development.
- Façade glazing recommendations.
- Recommendations to control noise emissions from the site.

2 SITE DESCRIPTION

The proposed development site is located between Penny Place and Nelson Street, Adelaide. An aerial photograph illustrating the proposed development site location and surrounding area is presented in Figure 2.1.



Imagery © 2016 Google, Map data ©2016 Google

Figure 2.1 Development site aerial photo and measurement locations

The background noise environment for the proposed site is controlled by road traffic noise (including trams) from King William Street to the West and Carrington Street to the South. Some noise is also attributed to noise emissions from nearby buildings with external plant, and from an automatic roller door on the eastern side of the SAPOL building located at 20 Carrington Street.

The project as understood comprises of a new mixed use development consisting of:

- 20 storey tower comprising:
 - Retail space at ground level.
 - Under cover car parking from ground to level 3.
 - Apartments on levels 4-20.
- Four townhouses located between the tower and Penny Place.
- Landscaped public square.

The closest noise sensitive receptors are located on the corner of Seymour and Penny Place, along Seymour Place and Moore Street, the City South Apartments on Carrington Street and the future Kodo apartment building located on Angus Street. All these buildings are residential dwellings except for some retail space at ground level.

2.1 ENVIRONMENTAL NOISE SURVEY

An attended short-term environmental noise survey was conducted at the development site between 16:30 – 17:15 hours on 27 September and 06:45 – 07:30 hours on 28 September 2017 to determine the existing ambient noise levels.

All measurements were taken with a type 1 sound level meter within valid laboratory calibration. Calibration measurements were taken out before and after the measurements and showed no significant drift in readings. The sound level meter and calibration information is presented in Table 2.1. Calibration certificates for the equipment are available upon request.

Table 2.1 Equipment details

EQUIPMENT	MANUFACTURER	MAKE	SERIAL NUMBER	CALIBRATION STATUS
Sound Level Meter	Brüel & Kjær	2250	2749881	Current
Acoustic Calibrator	Brüel & Kjær	4231	2385016	Current

A number of measurement locations were selected as follows (shown in Figure 2.1):

- Location 1 – Nelson Street, at the south west corner of the site.
- Location 2 – Carrington Street, approximately 7m from the centreline of the road.
- Location 3 – King William Street, approximately 15m from the centreline of the road.

The attended noise measurements were approximately 5-10 minutes in duration at each location, which was long enough for the equivalent noise level to settle and provide a good representation of the background noise environment.

2.2 MEASUREMENT RESULTS

The results for the attended noise measurements are shown in Table 2.2.

Table 2.2 Attended measurement results summary

SURVEY MEASUREMENT	DATE / TIME	L _{AEQ} dB	L _{A10} dB	L _{A90} dB	L _{AMAX(F)} dB
Location 1	27/9/17 16:38	59	62	54	73
	28/9/17 06:53	57	60	53	72
Location 2	27/9/17 16:52	66	70	52	80
	28/9/17 07:01	67	72	54	78
Location 3	27/9/17 17:00	68	72	61	79
	28/9/17 07:09	66	70	57	79

3 NOISE CRITERIA

3.1 ADELAIDE CITY COUNCIL DEVELOPMENT PLAN

3.1.1 COUNCIL WIDE PRINCIPLES OF DEVELOPMENT CONTROL

The Adelaide City Council Development Plan (Consolidated 20 June 2017) provides the following council wide Principles of Development Control (PDC) that are applicable to this development:

Noise Sources

- 93 *Mechanical plant or equipment should be designed, sited and screened to minimise noise impact on adjacent premises or properties. The noise level associated with the combined operation of plant and equipment such as air conditioning, ventilation and refrigeration systems when assessed at the nearest existing or envisaged noise sensitive location in or adjacent to the site should not exceed*
- (a) *55 dB(A) during daytime (7.00am to 10.00pm) and 45 dB(A) during night time (10.00pm to 7.00am) when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.*
 - (b) *50 dB(A) during daytime (7.00am to 10.00pm) and 40 dB(A) during night time (10.00pm to 7.00am) in or adjacent to a City Living Zone, the Adelaide Historic (Conservation) Zone, the North Adelaide Historic (Conservation) Zone or the Park Lands Zone when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.*
- 94 *To ensure minimal disturbance to residents:*
- (a) *ancillary activities such as deliveries, collection, movement of private waste bins, goods, empty bottles and the like should not occur:*
 - (i) *after 10.00pm; and*
 - (ii) *before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.*
 - (b) *typical activity within any car park area including vehicles being started, doors closing and vehicles moving away from the premises should not result in sleep disturbance when proposed for use after 10.00pm as defined by the limits recommended by the World Health Organisation.*

Noise Receivers

- 95 *Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise sources such as major transport corridors (road, rail, tram and aircraft), commercial centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.*
- 96 *Noise sensitive development in mixed use areas should not unreasonably interfere with the operation of surrounding non-residential uses that generate noise levels that are commensurate with the envisaged amenity of the locality.*
- 97 *Noise sensitive development adjacent to noise sources should include noise attenuation measures to achieve the following:*
- (a) *satisfaction of the sleep disturbance criteria in the bedrooms or sleeping areas of the development as defined by the limits recommended by the World Health Organisation;*

- (b) *the maximum satisfactory levels in any habitable room for development near major roads, as provided in the Australian/New Zealand Standard AS/NZS 2107:2000 - 'Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors';*

98 *Attached dwellings/serviced apartments should be designed to minimise the transmission of sound between dwellings/serviced apartments and should particularly protect bedrooms from possible noise intrusion.*

Design Techniques (these are ONE WAY of meeting the above Principle)

98.1 *Appropriate stacking and horizontal location of rooms, eg bedrooms over bedrooms and bedrooms next to bedrooms.*

98.2 *Bedrooms of any dwelling/serviced apartment:*

- (a) *not sharing a wall with a living room* or a garage of another dwelling; and*
- (b) *not located above or below a living room* of another abutting dwelling.*

** Living room means a room used for social interaction, relaxation or dining, including a living room, lounge room or open eating area linked to a kitchen, but does not include a bedroom.*

99 *The number of dwellings/serviced apartments within a development sharing a common entry should be minimised to limit noise generation in internal access ways.*

Design Techniques (these are ONE WAY of meeting the above Principle)

99.1 *Common entries servicing a maximum of 10 dwellings/serviced apartments on each floor level.*

99.2 *Incorporation of acoustic core filled doors with airtight rubber seals for all entry doors into common access ways.*

3.1.2 ADELAIDE CITY COUNCIL ZONING

The proposed development site is located within the Adelaide City Council “Capital City” zone, policy area 13. The surrounding noise sensitive receivers are in the following zones:

- Residences located on the corner of Penny and Seymour Place are in the “Capital City” zone (no policy area).
- Residences located along Seymour Place and Moore Street are in the “City Living” zone, policy area 32.
- The City South Apartments located on Carrington Street are in the “City Living” zone, policy area 32.
- The future Kodo Apartment building located on Angus Street is in the “Capital City” zone (no policy area).

The Capital City zone (no policy area) promotes a mix of commercial, retail, professional services, hospitality, entertainment, educational facilities and medium and high density living. It is noted that policy area 13 of the Capital City zone primarily promotes commercial land use, which is supported by educational, hospitality and entertainment activities and increased opportunities for residential, student and tourist accommodation.

The City Living zone primarily promotes residential land use, along with related non-residential uses that are compatible with residential amenity. Additional requirements for policy area 32 note that the area provides for medium scale residential development supported by a range of uses including shops, offices and consulting rooms, as well as community service and education, that maintain the areas residential amenity.

3.2 AUSTRALIAN STANDARD AS/NZS 2107:2016

The Adelaide City Council, council wide PDC 97 (b) refers to Australian/New Zealand Standard AS/NZS 2107:2000, however we note that the 2000 version of this standard has been superseded with the 2016 version which was released in October 2016. Therefore, for the purpose of this assessment we have utilised the 2016 version of the standard.

Australian/ New Zealand Standard AS/NZS 2107:2016 – *Acoustics—Recommended design sound levels and reverberation times for building interiors* (AS/NZS 2107) provides internal design sound levels for spaces based on the occupancy of that space. For residential buildings, AS/NZS 2107 provides internal design sound levels for houses and apartments in inner city areas or entertainment districts or near major roads, summarised in Table 3.1

Table 3.1 Internal Noise Design Criteria

TYPE OF OCCUPANCY	DESIGN SOUND LEVEL RANGE, $L_{Aeq,T}$ dB
Apartment common areas (e.g. foyer, lift lobby)	45 to 50
Living areas	35 to 45
Sleeping areas (night time)	35 to 40
Work areas	35 to 45

3.3 SLEEP DISTURBANCE CRITERIA

The World Health Organisation (WHO), *Guidelines for Community Noise* report (Berglund, Lindvall, Schwela) was developed based on the outcome of a WHO expert task force meeting held in London, UK in April 1999.

This document has been used widely to define guideline values for sleep disturbance (among other things), and has generally been accepted for use in Australia. The guideline values for sleep disturbance are reproduced in Table 3.2.

Table 3.2 Sleep Disturbance Criteria

SPECIFIC ENVIRONMENT	CRITICAL HEALTH EFFECT	L_{Aeq} dB	$L_{Amax(F)}$ dB
Inside bedrooms	Sleep disturbance, night time	30 (8 hour)	45

It is noted that the WHO internal L_{Aeq} noise criteria is more stringent than the AS/NZS 2107 criteria listed in Table 3.1. However, it should be noted that the WHO criteria is based on an 8 hour average, whereas the AS/NZS 2107 criteria is based on a measurement time to appropriately characterise the noise source. For this assessment we have adopted the AS/NZS 2107 criteria and for the purpose of assessing traffic noise ingress, have applied it to the typical worst case (highest) 1 hour noise level.

3.4 ENVIRONMENT PROTECTION (NOISE) POLICY

The South Australian *Environment Protection (Noise) Policy 2007* (Noise EPP) provides criteria for noise sources, which if complied with will satisfy the General Environmental Duty under Section 25 of the Environment Protection Act 1993.

The Noise EPP sets noise criteria based on the land uses principally promoted for the noise source and sensitive receivers by the relevant council development plan. For this development, the Adelaide City Council Development Plan principally promotes the following land uses for the noise source and nearest sensitive receivers. Where more than one land use is principally promoted for a zone, the Noise EPP requires that an average of the Indicative Noise Factors be taken for that zone. Similarly, where different land uses are promoted for the noise source and sensitive receivers, the Noise EPP requires an average of the Indicative Noise Factors be taken for the noise source and receiver.

A summary of the Indicative Noise Factors derived for each zone are presented in Table 3.3.

Table 3.3 Summary of Indicative Noise Factors for each Zone

COUNCIL ZONE	LAND USES PRINCIPALLY PROMOTED	INDICATIVE NOISE FACTOR, L _{AEQ,15MIN} dB	
		Day (7am – 10pm)	Night (10pm – 7am)
Noise Source – proposed development			
Capital City, policy area 13	Commercial	62	55
Sensitive Receivers			
Capital City (no policy area)	Commercial and residential	57	50
City Living, policy area 32	Residential	52	50

Based on the Indicative Noise Factors derived for each zone in Table 3.3, we are able to derive noise criteria for each of the noise sensitive receivers surrounding the site. Note that as this is a development authorisation application, the Part 5, Section 20 of the Noise EPP requires the predicted noise level to not exceed the Indicative Noise Factor less 5 dBA. The applicable noise criteria derived from the Noise EPP are presented in Table 3.4.

Table 3.4 Summary of Noise EPP Criteria

NOISE SENSITIVE RECEIVER	NOISE EPP CRITERIA, $L_{Aeq,15MIN}$ dB	
	Day (7am – 10pm)	Night (10pm – 7am)
Penny Place Stage 2	57	50
Residences corner of Penny and Seymour Place	55	48
Residences along Seymour Place and Moore Street	52	45
City South Apartments located on Carrington Street	52	45
Kodo Apartment building located on Angas Street	55	48

The derived Noise EPP criteria are applicable for all noise sources from the proposed development, which will consist of mechanical plant and car park noise. In addition to this it is noted that the Adelaide City Council PDC 93 (b) requires that mechanical plant in or adjacent to a City Living zone also achieve noise criteria of 50 dBA during the day and 40 dBA at night.

3.5 NOISE CRITERIA SUMMARY

A summary of the applicable noise criteria for the Penny Place Stage 2 development are presented in Table 3.5.

Table 3.5 Noise Criteria Summary, dB

LOCATION	TIME PERIOD	
	Day (7am – 10pm)	Night (10pm – 7am)
Noise Ingress (Internal Receiver Locations)		
Apartment common areas (e.g. foyer, lift lobby)	$L_{Aeq,1hr}$ 50	N/A
Living areas	$L_{Aeq,1hr}$ 45	N/A
Sleeping areas (night time)	N/A	$L_{Aeq,1hr}$ 40 $L_{Amax(f)}$ 45
Work areas	$L_{Aeq,1hr}$ 45	N/A
Noise Emissions (External Receiver Locations)		
Penny Place Stage 2 (apartments and town houses)	$L_{Aeq,15min}$ 57 (overall)	$L_{Aeq,15min}$ 50 (overall)
Residences corner of Penny and Seymour Place	$L_{Aeq,15min}$ 55 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 48 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
Residences along Seymour Place and Moore Street	$L_{Aeq,15min}$ 52 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 45 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
City South Apartments located on Carrington Street	$L_{Aeq,15min}$ 52 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 45 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)
Kodo Apartment building located on Angas Street	$L_{Aeq,15min}$ 55 (overall) $L_{Aeq,15min}$ 50 (mech plant)	$L_{Aeq,15min}$ 48 (overall) $L_{Aeq,15min}$ 40 (mech plant) $L_{Amax(F)}$ 45 (car park)

4 ASSESSMENT

4.1 NOISE INGRESS

4.1.1 TRAFFIC NOISE INGRESS

Based on an external façade noise level of 59 dB L_{Aeq} during the day and 57 dB L_{Aeq} at night, we predict the following internal noise levels for various glazing options in Table 4.1.

Table 4.1 Predicted Internal Noise Levels

ROOM	GLAZING TYPE	PREDICTED INTERNAL NOISE LEVEL dB L_{Aeq}	CRITERIA dB L_{Aeq}	COMPLIES?
Living Room	IGU 6/12/6 (R_w 33)	37	45	Yes
	IGU 6/12/10.38 lam (R_w 39)	31		Yes
	6.38mm laminated (R_w 32)	36		Yes
	10.38mm laminated (R_w 34)	33		Yes
Bedroom	IGU 6/12/6 (R_w 33)	36	40	Yes
	IGU 6/12/10.38 lam (R_w 39)	30		Yes
	6.38mm laminated (R_w 32)	34		Yes
	10.38mm laminated (R_w 34)	32		Yes
Bedroom ($L_{Amax(f)}$)	IGU 6/12/6 (R_w 33)	46	45	No
	IGU 6/12/10.38 lam (R_w 39)	39		Yes
	6.38mm laminated (R_w 32)	44		Yes
	10.38mm laminated (R_w 34)	42		Yes

Based on the results summarised in Table 4.1, all of the proposed glazing types are predicted to be compliant, with the exception of the 6mm glass /12mm air space /6mm glass IGU when used on the bedroom façade. The predictions assume that the doors to balconies are of the same glazing type as the façade, and the door assemblies include good quality acoustic seals that does not significantly degrade the acoustic performance of the façade glazing.

4.1.2 CONDENSER NOISE INGRESS

The proposed air conditioning arrangement for the apartment building will consist of single condensing unit installed on the balcony of each apartment, which serves multiple indoor units within the apartment.

Given that the condenser unit on each apartment balcony is controlled by the occupant of that apartment, for the purpose of the Development Application noise ingress into the apartments from individual condenser units has not been assessed. Note that as the design is progressed we will endeavour to achieve the internal noise criteria for the noise produced by the condenser units, however we note that there is no legislative requirement to achieve the internal noise criteria from condenser units for the apartment that it is serving.

4.1.3 CAR PARK NOISE INGRESS

Noise emissions resulting from short term noise sources within the Level 3 car parking area has been assessed for its impact on the Level 4 apartments. Maximum short term noise emissions from the car park will likely be due to a car door closing.

The resultant noise level from a car door closing within the car parking area is predicted to be 79 dB $L_{Amax(f)}$. Based on a minimum 150mm thick floor slab for the Level 4 apartments that are located above the car parking area, the predicted noise level within the bedroom areas is 31 dB $L_{Amax(f)}$, which is compliant with the 45 dB $L_{Amax(f)}$ sleep disturbance criterion.

4.2 NOISE EMISSIONS

4.2.1 CONDENSER NOISE EMISSIONS

We have based the following condenser noise emission calculations on a preliminary condenser selection undertaken for the project. The preliminary condenser selection is a 14kW Daikin RXYMQ5AV4A with a published sound power level of 71 dBA re $10^{-12}W$. We understand that the air conditioning system is designed with a diversity factor of 60%, meaning that as a worst case up to 60% of the units will be simultaneously operating at full load. Furthermore, the condenser units will be located within an enclosure that will provide approximately 1 dBA noise reduction.

4.2.1.1 PENNY PLACE APARTMENTS

We have calculated the noise from the operation of a condenser unit on the neighbouring apartment balcony. The predicted noise level on the adjoining balcony is 48 dB L_{Aeq} . This is compliant with the 50 dB L_{Aeq} noise criteria.

4.2.1.2 PENNY PLACE TOWN HOUSES

We have calculated the noise from the operation of 60% of the apartment condenser units on the neighbouring Penny Place Town Houses. The predicted noise level at the Penny Place town houses is 44 dB L_{Aeq} . This is compliant with the 50 dB L_{Aeq} noise criteria.

4.2.1.3 RESIDENCES ON PENNY AND SEYMOUR PLACE AND BEYOND

We have calculated the noise from the operation of 60% of the apartment condenser units on the noise sensitive receivers (residences) located on Penny and Seymour Place. The predicted noise level at the residences is 40 dB L_{Aeq} . This is compliant with the 40 dB L_{Aeq} noise criteria for mechanical plant. Noise levels at receivers beyond this (i.e. Moore Street and City South Apartments) are expected to be lower than this and as such comply with the mechanical plant noise criteria.

4.2.1.4 KODO APARTMENTS

We have calculated the noise from the operation of 60% of the apartment condenser units on the noise sensitive receivers (residences) located at the Kodo Apartment building (currently in construction). The predicted noise level at the Kodo Apartments is 39 dB L_{Aeq} . This is compliant with the 40 dB L_{Aeq} noise criteria for mechanical plant.

4.2.2 OTHER MECHANICAL PLANT

Other mechanical plant will be required for the Penny Place Stage 2 development, such as car park ventilation fans, smoke spill fans and stair pressurisation fans. The design of these systems has not yet developed to a stage where a detailed assessment of the noise emissions can take place.

It is noted that these systems will be designed and located, and incorporate necessary acoustic attenuation (such as attenuators and screens) to ensure that the mechanical plant noise criteria are not exceeded at any of the noise sensitive receivers.

4.2.3 CAR PARK NOISE

Noise emissions from the car park has been assessed. The traffic report by GTA Consultants “Penny Place Stage 2, Nelson Street, Adelaide, Transport Impact Assessment”, draft dated 3 October 2017, notes that the traffic generation from the on-site car parking are 21 movements during the am peak hour and 17 movements during the pm peak hour. Based on these assumptions, we have calculated an internal reverberant noise level of 60 dB $L_{Aeq,15min}$ within the car park during the busier am peak hour.

Assuming that the Penny Place Stage 2 town houses do not have western facing windows or balconies; the predicted noise emissions from the car park at the most affected noise sensitive receivers are as follows:

- 54 dB $L_{Aeq,15min}$ at the closest Penny Place town house.
- 44 dB $L_{Aeq,15min}$ at the residences located on the corner of Penny Place and Seymour Place.

The predicted noise emission levels are less than the overall day time noise criteria for the Penny Place town houses (criterion 57 dB $L_{Aeq,15min}$) and residences located on the corner of Penny Place and Seymour Place (criterion 55 dB $L_{Aeq,15min}$).

5 CONCLUSION

WSP has undertaken an acoustic assessment for the proposed Penny Place Stage 2 development in order to support the development application.

Based on the assessment, it has been demonstrated that:

- Traffic noise emissions in to noise sensitive areas can be controlled to satisfactory levels using typical single glazed and double glazed IGU windows and doors.
- Noise ingress from the car park into apartments located on Level 4 can be controlled to satisfactory levels with minimum 150mm thick concrete floor slab.
- Noise emissions from balcony mounted air conditioning condenser units to surrounding noise sensitive receivers will meet the environmental noise criteria.
- Noise emissions from the lower level car parking area to surrounding noise sensitive receivers will meet the environmental noise criteria without any specific acoustic treatment to the building façade (i.e. we have assumed the façade for the car park to be acoustically open to allow for ventilation).

As such, WSP are of the opinion that the proposed Penny Place Stage 2 development will be able to comply with the acoustic requirements outlined in the Adelaide City Council Development Plan.

INTRO

APPENDIX 03

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18 January 2018

Ms Natalie Burdon
Premier Capitol Developments
Level 29, 140 William Street
Melbourne VIC 3000

Email: natalie@premiercapitaldevelopments.com.au

Dear Natalie,

Mixed Use /Residential Development: Penny Place Stage 2 Design Review
Landscape Design Updates

In response to ODASA and ACC review and questions the following amend plans and section show the updates made to landscape works. The following list outlines changes to the previous presentation set.

Landscape Illustrative Masterplan – Overall Stage 1 and Stage 2 works

- Amendments to tree locations to enhance the visual legibility to the building lobby (refer to drawing)
- Section shown to demonstrate viewlines below canopy of trees to building lobby. Shrub plantings in garden beds are to be small shrubs and low groundcovers to enable full visual access along the laneway for visual access to building entrances and to provide a safe and secure environment based on CPTED principles.
- Adjustment of garden outside of building lobby to provide a direct pathway access to the doorway (refer to drawing)

Landscape Illustrative Masterplan – Stage 2 Level 4 Podium

- Update to planter locations to within the private balcony areas to match updated architectural base. Planters to have irrigation system controlled by residents and connected to their private water supply to water planters.

Landscape Maintenance

- Paving materiality to match that of Stage 1 works – to be exfoliated black granite of paving module sizes to align with ACC Laneway Strategy. Stage 1 Laneway works are currently under review with ACC and has been amended in line with ACC workshops in order for ACC to take over ownership and ongoing maintenance post final completion.
- Proposed planting schedule to match that of Stage 1 Laneway works (Refer to schedule attached). Stage 1 Laneway works are currently under review with ACC and has been amended in line with ACC workshops in order for ACC to take over ownership and ongoing maintenance post final completion.

TRACT CONSULTANTS PTY LTD
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TRACT CONSULTANTS UNIT TRUST
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ISO 9001 LIC NO 2095

- Defects Liability period for Landscape contractor is 52 weeks (1 year) during which the landscape contractor is to maintain all works and water all plants to establish them prior to final completion and handover.

Please do not hesitate to call if further clarification is required.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Deiter Lim', with a stylized, flowing script.

Deiter Lim
Managing Director
Tract Consultants Pty Ltd

0315-0179-10 Angas Street - GROUND LEVEL

PLANTING SCHEDULE

CODE	BOTANIC NAME	COMMON NAME	DENSITY	INSTALL SIZE
TREES				
	<i>Steno carpas sinuatus</i>	Firewheel tree	As shown	100L
	<i>*Tristaniopsis Laurina 'Luscious'</i>	Watergum	As shown	100L
Fern				
	<i>Dicksonia Antarctica</i>	Soft Tree fern	As shown	1m trunk height
Aa	<i>Asplenium australasicum</i>	Bird's Nest fern	4/m ²	150mm pots
				Total
SHRUBS AND CLIMBERS				
Tj	<i>Trachelospermum jasminoides</i>	Star Jasmine	3/m	150mm pots
Hp	<i>Hydrangea petiolaris</i>	Climbing Hydrangea	4/m	200mm pots
Ac	<i>Arthropodium cirratum</i>	New Zealand Rock Lily	5/m ²	200mm pots
Ll	<i>Lomandra longifolia 'Tanika'</i>	Tanika	4/m ²	150mm pots
DI	<i>Dianella Little Jess</i>	Little Jess	6/m ²	150mm pots
Asm	<i>Acmena smithii 'Minor'</i>	Dwarf Lilly Pilly	4/m ²	150mm pots
As	<i>Austrostipa stipoides</i>	Prickly Spear Grass	4/m ²	150mm pots
Cd	<i>Correa Dusky Bell</i>	Dusky Bell	4/m ²	150mm pots
Cr	<i>Cycas Revoluta</i>	Sago Palm	2/m ²	150mm pots
Af	<i>Anigozanthos Flavidus</i>	Dusky Bell	4/m ²	150mm pots
Cm	<i>Clivia miniata</i>	Kaffir lily	5/m ²	150mm pots
Ds	<i>Dichondra Silver Fall</i>	Silver Fall Dichondra	8/m ²	150mm pots
Zf	<i>Zamia Furfuracea</i>	Silver Fall Dichondra	2/m ²	150mm pots
				Total

* TREES REQUIRED BY VIPAC WIND MITIGATION SOLUTION (OPTION 2 IN REPORT). MATURE SIZE OF THE TREE IS MIN. 3-4m TALL

Plant species will be finalised after review with ACC in order to finalise agreement for handover, ownership and ongoing maintenance by ACC.



Ground Level Landscape Plan





Level 4 Landscape Plan

SCALE 1:400 (A3)

0 4 8 20



Overall Landscape Section

SCALE 1:400 (A3)



INTRO

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Reference: #S132540

16 January 2018

Intro Design Pty Ltd
Level 11, 44 Waymouth Street
Adelaide SA 5000

Attention: Mr. Anthony Gatti

Dear Anthony

**RE: DA S10/38/2017 (020/A068/17) – PENNY PLACE APARTMENTS,
23-31 ANGAS STREET, ADELAIDE
RESPONSE TO COUNCIL COMMENTS**

This letter provides a response to comments received from the City of Adelaide Council, dated 21 December 2017. The response to the relevant traffic related comments is as follows:

Car parking layout should comply with AS2890.

The car parking layout has been designed in accordance with AS2890.1:2004.

Doors appear to be opening into the manoeuvring space for Townhouse 1, which is a risk to those using the doorway. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a yellow circle.

The doors in question are for access to the proposed service yard adjacent the Plant and Townhouse 1. Therefore, it is anticipated that the gates will not be publicly accessible, and the gates will only be open when maintenance vehicles/personnel will be accessing the service yard, resulting in minimal conflict with the manoeuvring ability of Townhouse 1.

The swept path for Townhouse 1 appears to show the vehicle manoeuvring into the wall. Appropriate manoeuvring areas need to be provided. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a red circle.

AS2890.1 Section 5.4 outlines the minimum requirements for the apron widths to access enclosed driveways. The provided garage widths are approximately 3.0m wide with a 6.3m wide apron width, exceeding the minimum requirement of 5.6m for a 3.0m wide doorway.

The associated B99 swept path demonstrates the rear of the vehicle overhanging the proposed kerb while maintaining clearance to the property boundary and the adjacent building. The swept path also maintains clearance to Townhouse 2 when travelling in a forward direction. It is noted that the vehicle likely to be used in a city townhouse environment will typically resemble a B85 vehicle rather than a B99 vehicle, which will be able to turn within the provided apron width.

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Doors for entry to the garage from the public square area appear to conflict with the position of parked vehicles and appear to be unusable. The relevant excerpt from Figure 4.2 of the report is provided below and the area marked with a purple circle.

It is recommended that the garage entry doors be revised to not impact onto the garage space. Sliding doors or outwards swinging doors could be installed.

Please contact me at the Adelaide office on 8334 3600 if you have any questions,

Yours sincerely

GTA CONSULTANTS



Paul Morris
Director

INTRO

APPENDIX 05

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**Flagship (Penny Place) Pty Ltd
2 Clarendon Street
South Wharf Vic 3006**

19 January, 2018

Attention: Willy Hoogveen

Re: 27 Penny Place Adelaide – NCC – BCA – Vol1 – Initial Certifier Review Comments


Dear Willy

This correspondence is to confirm that Katnich Dodd has been engaged as the Private Certifiers for the project. To date we have undertaken a preliminary review of the planning documentation and believe that the building (subject to performance based alternate solutions to be further reviewed and supported) will be able to satisfy the minimum requirements of the NCC BCA Vol 1 Parts A-J with regards to a mixed use building of Class 2, 6 & 7a classifications.

The initial review and comments are based on the Woods Bagot Architects drawings received via email dated 19 January 2018 Job Number 140292 Rev G sheet SK02-13

This correspondence does not constitute a certificate of compliance with the Building Rules and is to be considered only for a planning application and approval process only.

Yours faithfully



Vic Barone

19 January, 2018

Certificate of Registration as a Private Certifier No. 057

©



Address

1st Floor
20 Greenhill Rd
Wayville SA 5034

Postal Address

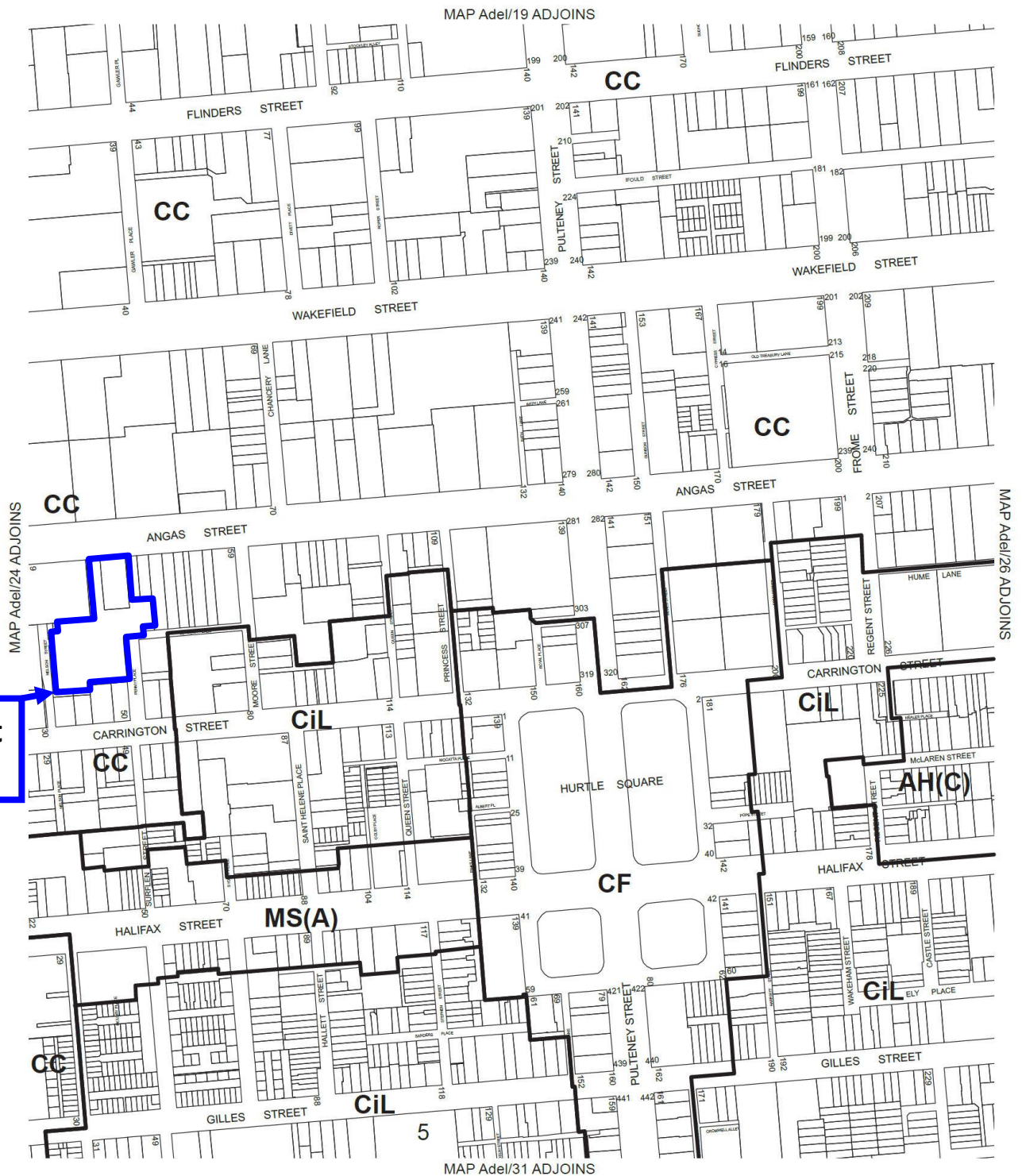
P.O. Box 109
Goodwood SA 5034

Contact

Ph: (08) 8273 0888
Fax: (08) 8273 0800

Directors

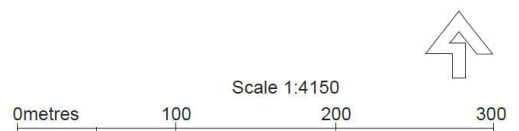
Ian Dodd: 0417 827 800
Peter Harmer: 0417 827 013
Vic Barone: 0433 457 588



NOTE : For Policy Areas See MAP Adel/56

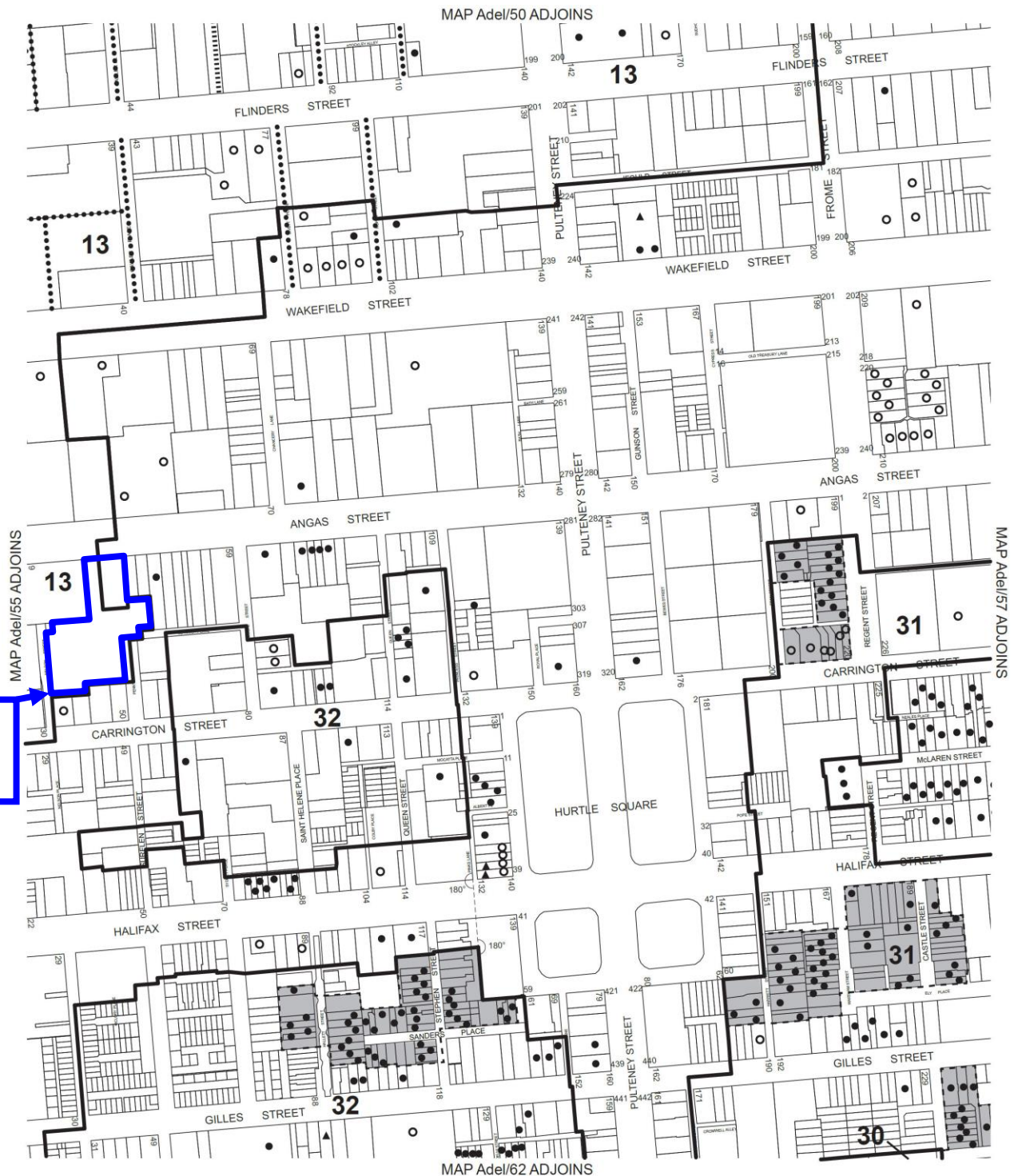
AH(C) Adelaide Historic (Conservation) Zone
CC Capital City Zone
CF City Frame Zone
CiL City Living Zone
MS(A) Main Street (Adelaide) Zone

————— Zone Boundary
 - - - - - Development Plan Boundary



ADELAIDE (CITY) ZONES MAP Adel/25

Consolidated - 20 June 2017



- 13 Central Business Policy Area
- 30 South Terrace Policy Area
- 31 South East Policy Area
- 32 South Central Policy Area

- Maximum height of 2 storeys
- State Heritage Place
- Local Heritage Place
- Significant Tree

- Existing Pedestrian Link
- Proposed Pedestrian Link

Policy Area Boundary

Scale 1:4150
0metres 100 200 300

ADELAIDE (CITY) POLICY AREAS MAP Adel/56

Consolidated - 20 June 2017

Central Business Policy Area 13

Introduction

The Objectives and Principles of Development Control that follow apply to the Policy Area as shown on [Maps Adel/49, 50, 55 and 56](#). They are additional to those expressed for the Zone and, in cases of apparent conflict, take precedence over the Zone provisions. In the assessment of development, the greatest weight is to be applied to satisfying the Desired Character for the Policy Area.

DESIRED CHARACTER

The Central Business Policy Area is the pre-eminent economic, governance and cultural hub for the State. This role will be supported by educational, hospitality and entertainment activities and increased opportunities for residential, student and tourist accommodation.

Buildings will exhibit innovative design approaches and produce stylish and evocative architecture, including tall and imposing buildings that provide a hard edge to the street and are of the highest design quality. A wide variety of design outcomes of enduring appeal are expected. Complementary and harmonious buildings in individual streets will create localised character and legible differences between streets, founded on the existing activity focus, building and settlement patterns, and street widths.

OBJECTIVES

- Objective 1:** A concentration of employment, governance, entertainment and residential land uses that form the heart of the City and central place for the State.
- Objective 2:** Development of a high standard of design and external appearance that integrates with the public realm.
- Objective 3:** Development that contributes to the Desired Character of the Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1** Development should contribute to the area's role and function as the State's premier business district, having the highest concentration of office, retail, mixed business, cultural, public administration, hospitality, educational and tourist activities.
- 2** Buildings should be of a height that ensures airport operational safety is not adversely affected.
- 3** To enable an activated street level, residential development or similar should be located above ground floor level.

CAPITAL CITY ZONE

Introduction

The Desired Character, Objectives and Principles of Development Control that follow apply in the whole of the Capital City Zone shown on [Maps Adel/17 to 20, 23 to 26 and 29 to 31](#). They are additional to those expressed for the whole of the Council area and in cases of apparent conflict, take precedence over the more general provisions. In the assessment of development, the greatest weight is to be applied to satisfying the Desired Character for the Zone.

DESIRED CHARACTER

This Zone is the economic and cultural focus of the State and includes a range of employment, community, educational, tourism and entertainment facilities. It is anticipated that an increased

population within the Zone will complement the range of opportunities and experiences provided in the City and increase its vibrancy.

The Zone will be active during the day, evening and late night. Licensed entertainment premises, nightclubs and bars are encouraged throughout the Zone, particularly where they are located above or below ground floor level to maintain street level activation during the day and evening.

High-scale development is envisaged in the Zone with high street walls that frame the streets. However an interesting pedestrian environment and human scale will be created at ground floor levels through careful building articulation and fenestration, frequent openings in building façades, verandahs, balconies, awnings and other features that provide weather protection.

In important pedestrian areas, buildings will be set back at higher levels above the street wall to provide views to the sky and create a comfortable pedestrian environment. In narrow streets and laneways the street setback above the street wall may be relatively shallow or non-existent to create intimate spaces through a greater sense of enclosure. In the Central Business Policy Areas, upper level setbacks are not envisaged.

Non-residential land uses at ground floor level that generate high levels of pedestrian activity such as shops, cafés and restaurants will occur throughout the Zone. Within the Central Business Policy Area, residential land uses at ground level are discouraged. At ground level, development will continue to provide visual interest after hours by being well lit and having no external shutters. Non-residential and / or residential land uses will face the street at the first floor level to contribute to street vibrancy.

New development will achieve high design quality by being:

- (a) **Contextual** – so that it responds to its surroundings, recognises and carefully considers the adjacent built form, and positively contributes to the character of the immediate area.
- (b) **Durable** – by being fit for purpose, adaptable and long lasting, and carefully considers the existing development around it.
- (c) **Inclusive** – by integrating landscape design to optimize pedestrian and cyclist usability, privacy, and equitable access, and also promote the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimize security and safety both internally and into the public realm, for occupants and visitors alike.
- (d) **Sustainable** – by integrating sustainable systems into new buildings and the surrounding landscape design to improve environmental performance and minimise energy consumption.
- (e) **Amenable** – by providing natural light and ventilation to habitable spaces.

Contemporary juxtapositions will provide new settings for heritage places. Innovative design is expected in areas of identified street character with an emphasis on contemporary architecture that responds to site context and broader streetscape, while supporting optimal site development. The addition of height, bulk and massing of new form should be given due consideration in the wider context of the proposed development.

There will also be a rich display of art that is accessible to the public and contextually relevant.

Adelaide's pattern of streets and squares

The distinctive grid pattern of Adelaide will be reinforced through the creation of a series of attractive boulevards as shown on Concept Plan [Figures CC/1 and 2](#). These boulevards will provide a clear sense of arrival into the City and be characterised by buildings that are aligned to the street pattern, particularly at ground level.

Views to important civic landmarks, the Park Lands and the Adelaide Hills will be retained as an important part of the City's charm and character.

The City's boulevards, terraces and Squares will be developed as follows:

- (a) North Terrace will be reinforced as an important pedestrian promenade and cultural boulevard that provides an important northern edge to the City square mile.
- (b) King William Street will be enhanced as the City's principal north-south boulevard and will be reinforced as the City's commercial spine.
- (c) Grote Street-Wakefield Street will be enhanced as the City's principal east-west boulevard and will be developed to provide a strong frame that presents a sense of enclosure to the street.
- (d) East Terrace will be characterised by buildings that maximise views through to the Park Lands and provide a distinct City edge.
- (e) West Terrace will be reinforced as the western 'gateway' to the City centre and will form an imposing frontage to the western City edge. Buildings will be constructed to the front and side boundaries, and designed to maximise views through to the Park Lands. Corner sites at the junctions of West Terrace and the major east-west streets will be developed as strongly defined visual gateways to the City. This will provide an imposing frontage to the western edge of the City, which comprises a mixture of commercial, showroom and residential development.
- (f) Pulteney and Morphett streets are key north-south boulevards. A sense of activation and enclosure of these streets will be enhanced through mixed use development with a strong built form edge. Pulteney Street will include residential, office and institutional uses, and retail activities. These boulevards will become important tree-lined commercial corridors.
- (g) Currie, Grenfell, Franklin and Flinders streets, as wider east-west boulevards provide important entry points to the City. Currie and Grenfell streets will become a key focus for pedestrians, cycling and public transport. These streets also provide long views to the hills as their closing vistas and these view corridors should remain uncluttered.
- (h) Victoria, Hindmarsh and Light Squares will have a continuous edge of medium to high-scale development that frames the Squares and increases ground level activity.

The Zone also includes a number of Main Street areas, encompassing Rundle Mall, Rundle Street, Hindley Street and Gouger Street, which are envisaged to have a wide range of retail, commercial and community uses that generate high levels of activity. These areas will have an intimately scaled built form with narrow and frequent building frontages. These areas are shown on Concept Plan [Figures CC/1 and 2](#).

Development fronting North Terrace, King William Street, Wakefield Street, Grote Street, the Squares, and in the Main Street Policy Area, will reflect their importance through highly contextual design that reflects and responds to their setting and role.

Minor streets and laneways will have a sense of enclosure (a tall street wall compared to street width) and an intimate, welcoming and comfortable pedestrian environment with buildings sited and composed in a way that responds to the buildings' context. There will be a strong emphasis on ground level activation through frequent window openings, land uses that spill out onto the footpath, and control of wind impacts.

Development in minor streets and laneways with a high value character will respond to important character elements and provide a comfortable pedestrian environment, particularly in the following streets: Gray, Leigh, Union, Chesser, Coromandel, Tucker, Cardwell, Kenton, Market, Ruthven, Cannon, Tatham, Bentham streets, Murrays Lane and Wright Court.

A comprehensive, safe and convenient movement network throughout the City will develop, focusing on the provision of linkages on both public and private land between important destinations and public transport. A high quality system of bicycle or shared pedestrian and bicycle routes will be established within the Zone.

OBJECTIVES

General

- Objective 1:** The principal focus for the economic, social and political life of metropolitan Adelaide and the State.
- Objective 2:** A vibrant mix of commercial, retail, professional services, hospitality, entertainment, educational facilities, and medium and high density living.
- Objective 3:** Design and management of City living to ensure the compatibility of residential amenity with the essential commercial and leisure functions of the Zone.
- Objective 4:** City streets that provide a comfortable pedestrian environment.
- Objective 5:** Innovative design approaches and contemporary architecture that respond to a building's context.
- Objective 6:** Buildings that reinforce the gridded layout of Adelaide's streets and respond to the underlying built-form framework of the City.
- Objective 7:** Large sites developed to their full potential while ensuring a cohesive scale of development and responding to a building's context.
- Objective 8:** Development that contributes to the Desired Character of the Zone.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1** The following types of development, or combinations thereof, are envisaged:

Affordable housing
 Aged persons accommodation
 Community centre
 Consulting room
 Convention centre
 Dwelling
 Educational establishment
 Emergency services facility
 Hospital
 Hotel
 Indoor recreation centre
 Licensed entertainment premises
 Library
 Motel
 Office
 Pre-school
 Personal service establishment
 Place of worship
 Serviced apartment
 Restaurant
 Residential flat building
 Student accommodation
 Shop or group of shops
 Tourist accommodation

- 2** Land uses that are typically closed during the day should be designed to maximise daytime and evening activation at street level and be compatible with surrounding land uses, in particular residential development.

- 3 Low impact industries should be located outside the Central Business Policy Area and have minimal off-site impacts with respect to noise, air, water and waste emissions, traffic generation and movement.
- 4 Development listed as non-complying is generally inappropriate.

Form and Character

- 5 Development should be consistent with the Desired Character for the Zone.

Design and Appearance

- 6 Development should be of a high standard of architectural design and finish which is appropriate to the City's role and image as the capital of the State.
- 7 Buildings should achieve a high standard of external appearance by:
 - (a) the use of high quality materials and finishes. This may be achieved through the use of materials such as masonry, natural stone, prefinished materials that minimise staining, discolouring or deterioration, and avoiding painted surfaces particularly above ground level;
 - (b) providing a high degree of visual interest through articulation, avoiding any large blank facades, and incorporating design features within blank walls on side boundaries which have the potential to be built out;
 - (c) ensuring lower levels are well integrated with, and contribute to a vibrant public realm; and
 - (d) ensuring any ground and first floor level car parking elements are sleeved by residential or non-residential land uses (such as shops, offices and consulting rooms) to ensure an activated street frontage.
- 8 Buildings should present an attractive pedestrian-oriented frontage that adds interest and vitality to City streets and laneways.
- 9 The finished ground floor level of buildings should be at grade and/or level with the footpath to provide direct pedestrian access and street level activation.
- 10 Providing footpath widths and street tree growth permit, development should contribute to the comfort of pedestrians through the incorporation of verandahs, balconies, awnings and/or canopies that provide pedestrian shelter.
- 11 Buildings should be positioned regularly on the site and built to the street frontage, except where a setback is required to accommodate outdoor dining or provide a contextual response to a heritage place.
- 12 Buildings should be designed to include a podium/street wall height and upper level setback (in the order of 3-6 metres) that:
 - (a) relates to the scale and context of adjoining built form;
 - (b) provides a human scale at street level;
 - (c) creates a well-defined and continuity of frontage;
 - (d) gives emphasis and definition to street corners to clearly define the street grid;
 - (e) contributes to the interest, vitality and security of the pedestrian environment;
 - (f) maintains a sense of openness to the sky for pedestrians and brings daylight to the street; and

- (g) achieves pedestrian comfort by minimising micro climatic impacts (particularly shade/shelter, wind tunnelling and downward drafts);

other than (h) or (i):

- (h) in the Central Business Policy Area;

- (i) where a lesser (or zero) upper level setback and/or podium height is warranted to correspond with and complement the form of adjacent development, in which case alternative design solutions should be included to achieve a cohesive streetscape, provided parts (b) to (g) are still achieved.

- 13** Buildings north of Rundle Mall, Rundle Street, Hindley Street and Gouger Street should have a built form that incorporates slender tower elements, spaces between buildings or other design techniques that enable sunlight access to the southern footpath.
- 14** Buildings, advertisements, site landscaping, street planting and paving should have an integrated, coordinated appearance and should enhance the urban environment.
- 15** Building façades should be strongly modelled, incorporate a vertical composition which reflects the proportions of existing frontages, and ensure that architectural detailing is consistent around corners and along minor streets and laneways.
- 16** Development that exceeds the maximum building height shown in Concept Plan [Figures CC/1 and 2](#), and meets the relevant quantitative provisions should demonstrate a significantly higher standard of design outcome in relation to qualitative policy provisions including site configuration that acknowledges and responds to the desired future character of an area but that also responds to adjacent conditions (including any special qualities of a locality), pedestrian and cyclist amenity, activation, sustainability, and public realm and streetscape contribution.

The Squares (Victoria, Hindmarsh and Light)

- 17** Outdoor eating and drinking facilities associated with cafés and restaurants are appropriate ground floor uses and should contribute to the vitality of the Squares and create a focus for leisure.
- 18** Buildings fronting the Squares should:
 - (a) provide a comfortable pedestrian and recreation environment by enabling direct sunlight to a minimum of 75 percent of the landscaped part of each Square at the September equinox; and
 - (b) reinforce the enclosure of the Squares with a continuous built-form with no upper level setbacks.

The Terraces (North, East and West)

- 19** Development along the terraces should contribute to a continuous built form to frame the City edge and activate the Park Lands.
- 20** Development along North Terrace should reinforce the predominant scale and 'City wall' character of the Terrace frontage.

Building Height

- 21** Development should not exceed the maximum building height shown in Concept Plan [Figures CC/1 and 2](#) unless;
 - (a) it is demonstrated that the development reinforces the anticipated city form in Concept Plan [Figures CC/1 and 2](#), and

(b) only if:

(i) at least two of the following features are provided:

- (1) the development provides an orderly transition up to an existing taller building or prescribed maximum building height in an adjoining Zone or Policy Area;
- (2) the development incorporates the retention, conservation and reuse of a building which is a listed heritage place;
- (3) high quality universally accessible open space that is directly connected to, and well integrated with, public realm areas of the street;
- (4) universally accessible, safe and secure pedestrian linkages that connect through the development site as part of the cities pedestrian network on [Map Adel/1 \(Overlay 2A\)](#);
- (5) on site car parking does not exceed a rate of 0.5 spaces per dwelling, car parking areas are adaptable to future uses or all car parking is provided underground;
- (6) residential, office or any other actively occupied use is located on all of the street facing side of the building, with any above ground car parking located behind;
- (7) a range of dwelling types that includes at least 10% of 3+ bedroom apartments;
- (8) more than 15 per cent of dwellings as affordable housing.

(ii) plus all of the following sustainable design measures are provided:

- (1) a rooftop garden covering a majority of the available roof area supported by services that ensure ongoing maintenance;
- (2) a greenroof, or greenwalls / façades supported by services that ensure ongoing maintenance;
- (3) innovative external shading devices on all of the western side of a street facing façade; and
- (4) higher amenity through provision of private open space in excess of minimum requirements, access to natural light and ventilation to all habitable spaces and common circulation areas.

22 Development should have optimal height and floor space yields to take advantage of the premium City location and should have a building height no less than half the maximum shown on Concept Plan [Figures CC/1 and 2](#), or 28 metres in the Central Business Policy Area, except where one or more of the following applies:

- (a) a lower building height is necessary to achieve compliance with the Commonwealth Airports (Protection of Airspace) Regulations;
- (b) the site is adjacent to the City Living Zone or the Adelaide Historic (Conservation) Zone and a lesser building height is required to manage the interface with low-rise residential development;
- (c) the site is adjacent to a heritage place, or includes a heritage place;
- (d) the development includes the construction of a building in the same, or substantially the same, position as a building which was demolished, as a result of significant damage caused by an event, within the previous 3 years where the new building has the same, or substantially the same, layout and external appearance as the previous building.

Interface

- 23** Development should manage the interface with the City Living Zone or the Adelaide Historic (Conservation) Zone in relation to building height, overshadowing, massing, building proportions and traffic impacts and should avoid land uses, or intensity of land uses, that adversely affect residential amenity.
- 24** Development on all sites on the southern side of Gouger Street - Angas Street and adjacent to a northern boundary of the City Living Zone or the Adelaide Historic (Conservation) Zone should not exceed 22 metres in building height unless the Council Wide overshadowing Principles of Development Control are met.
- 25** Parts of a development that exceed the prescribed maximum building height shown on Concept Plan [Figures CC/1 and 2](#) that are directly adjacent to the City Living, Main Street (Adelaide) and Adelaide Historic (Conservation) Zone boundaries should be designed to minimise visual impacts on sensitive uses in the adjoining zones and to maintain the established or desired future character of the area. This may be achieved through a number of techniques such as additional setback, avoiding tall sheer walls, centrally locating taller elements, providing variation of light and shadow through articulation to provide a sense of depth and create visual interest, and the like.

Movement

- 26** Pedestrian movement should be based on a network of pedestrian malls, arcades and lanes, linking the surrounding Zones and giving a variety of north-south and east-west links.
- 27** Development should provide pedestrian linkages for safe and convenient movement with arcades and lanes clearly designated and well-lit to encourage pedestrian access to public transport and areas of activity. Blank surfaces, shutters and solid infills lining such routes should be avoided.
- 28** Development should ensure existing through-site and on-street pedestrian links are maintained and new pedestrian links are developed in accordance with [Map Adel/1 \(Overlay 2A\)](#).
- 29** Car parking should be provided in accordance with [Table Adel/7](#).
- 30** Multi-level car parks should locate vehicle access points away from the primary street frontage wherever possible and should not be located:
 - (a) within any of the following areas:
 - (i) the Core Pedestrian Area identified in [Map Adel/1 \(Overlays 2, 2A and 3\)](#)
 - (ii) on frontages to North Terrace, East Terrace, Rundle Street, Hindley Street, Currie Street, Waymouth Street (east of Light Square), Victoria Square or King William Street;
 - (b) where they conflict with existing or projected pedestrian movement and/or activity;
 - (c) where they would cause undue disruption to traffic flow; and
 - (d) where it involves creating new crossovers in North Terrace, Rundle Street, Hindley Street, Currie Street and Waymouth Street (east of Light Square), Grenfell Street and Pirie Street (west of Pulteney Street), Victoria Square, Light Square, Hindmarsh Square, Gawler Place and King William Street or access across primary City access and secondary City access roads identified in [Map Adel/1 \(Overlay 1\)](#).
- 31** Multi-level, non-ancillary car parks are inappropriate within the Core Pedestrian Area as shown on [Map Adel/1 \(Overlays 2, 2A and 3\)](#).
- 32** Vehicle parking spaces and multi-level vehicle parking structures within buildings should:
 - (a) enhance active street frontages by providing land uses such as commercial, retail or other non-car park uses along ground floor street frontages;

- (b) complement the surrounding built form in terms of height, massing and scale; and
- (c) incorporate façade treatments along major street frontages that are sufficiently enclosed and detailed to complement neighbouring buildings consistent with the Desired Character of the locality.

Advertising

- 33** Other than signs along Hindley Street, advertisements should use simple graphics and be restrained in their size, design and colour.
- 34** In minor streets and laneways, a greater diversity of type, shape, numbers and design of advertisements are appropriate provided they are of a small-scale and located to present a consistent message band to pedestrians.
- 35** There should be an overall consistency achieved by advertisements along individual street frontages.
- 36** In Chesser Street, French Street and Coromandel Place advertisements should be small and preferably square and should not be located more than 3.7 metres above natural ground level or an abutting footpath or street. However, advertisements in these streets may be considered above 3.7 metres at locations near the intersections with major streets.
- 37** Advertisements on the Currie Street frontages between Topham Mall and Gilbert Place and its north-south prolongation should be of a size, shape and location complementary to the desired townscape character, with particular regard to the following:
 - (a) On the southern side of Currie Street, advertisements should be fixed with their underside at a common height, except where the architectural detailing of building façades precludes it. At this 'canopy' level advertisements should be of a uniform size and fixed without the support of guy wires. Where architectural detailing permits, advertisements may mark the major entrances to buildings along the southern side of Currie Street with vertical projecting advertisements 1.5 metres high by 1.2 metres wide at, or marginally above, the existing canopy level. Painted wall or window signs should be restrained.
 - (b) On the northern side of Currie Street, advertisements should be of a uniform fixing height and consistent dimensions to match those prevailing in the area.

PROCEDURAL MATTERS

Complying Development

- 38** Complying developments are prescribed in Schedule 4 of the *Development Regulations 2008*.

In addition, the following forms of development are assigned as **complying**:

- (a) Other than in relation to a State heritage place, Local heritage place (City Significance), or Local heritage place, work undertaken within a building which does not involve a change of use or affect the external appearance of the building;
- (b) Temporary depot for Council for a period of no more than 3 months where it can be demonstrated that appropriate provision has been made for:
 - (i) dust control;
 - (ii) screening, including landscaping;
 - (iii) containment of litter and water; and
 - (iv) securing of the site.

- (c) Change in the use of land from a non-residential use to an office, shop or consulting room (excluding any retail showroom, adult entertainment premises, adult products and services premises or licensed premises).

Non-complying Development

39 The following kinds of development are **non-complying**:

A change in use of land to any of the following:

Amusement machine centre

Advertisements involving any of the following:

- (a) third party advertising except on Hindley Street, Rundle Mall or on allotments at the intersection of Rundle Street and Pulteney Street, or temporary advertisements on construction sites;
- (b) advertisements located at roof level where the sky or another building forms the background when viewed from ground level;
- (c) advertisements in the area bounded by West Terrace, Grote Street, Franklin Street and Gray Street;
- (d) animation of advertisements along and adjacent to the North Terrace, King William Street and Victoria Square frontages.

Total demolition of a State Heritage Place (as identified in [Table Adel/1](#)).

Vehicle parking except:

- (a) where it is ancillary to an approved or existing use;
- (b) it is a multi-level car park located outside the Core Pedestrian Area as indicated on [Map Adel/1 \(Overlay 2, 2A and 3\)](#); or
- (c) it is within an existing building located outside the Core Pedestrian Area as indicated on [Map Adel/1 \(Overlay 2, 2A and 3\)](#).

Public Notification

40 Categories of public notification are prescribed in Schedule 9 of the *Development Regulations 2008*.

In addition, the following forms of development, or any combination of (except where the development is non-complying), are assigned:

- (a) **Category 1**, public notification not required:

All forms of development other than where it is assigned Category 2.

- (b) **Category 2**, public notification required. Third parties do not have any appeal rights.

Any development where the site of the development is adjacent land to land in the City Living Zone or Adelaide Historic (Conservation) Zone and it exceeds 22 metres in building height.

Note: For Category 3 development, public notification is required. Third parties may make written representations, appear before the relevant authority on the matter, and may appeal against a development consent. This includes any development not classified as either Category 1 or Category 2.

COUNCIL WIDE

City Living

Housing Choice

OBJECTIVES

- Objective 6:** A variety of housing options which supplement existing types of housing and suit the widely differing social, cultural and economic needs of all existing and future residents.
- Objective 7:** A range of long and short term residential opportunities to increase the number and range of dwellings available whilst protecting identified areas of special character and improving the quality of the residential environment.
- Objective 8:** A broad range of accommodation to meet the needs of low income, disadvantaged and groups with complex needs whilst ensuring integration with existing residential communities.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1** Development should comprise of a range of housing types, tenures and cost, to meet the widely differing social and economic needs of residents.

Medium to High Scale Residential/Serviced Apartment

OBJECTIVE

- Objective 22:** Medium to high scale residential (including student accommodation) or serviced apartment development that:
 - (a) has a high standard of amenity and environmental performance;
 - (b) comprises functional internal layouts;
 - (c) is adaptable to meet a variety of accommodation and living needs; and
 - (d) includes well-designed and functional recreation and storage areas.

PRINCIPLES OF DEVELOPMENT CONTROL

Building Entrances

- 2** Entrances to medium to high scale residential or serviced apartment development should:
 - (a) be oriented towards the street;
 - (b) be visible and easily identifiable from the street; and
 - (c) provide shelter, a sense of personal address and transitional space around the entry.
- 3** Entrances to individual dwellings or apartments within medium to high scale residential or serviced apartment development should:
 - (a) be located as close as practical to the lift and/or lobby access and minimise the need for long access corridors;
 - (b) be clearly identifiable; and

avoid the creation of potential areas for entrapment.

Daylight, Sunlight and Ventilation

- 4 Medium to high scale residential or serviced apartment development should be designed to maximise opportunities to facilitate natural ventilation and capitalise on natural daylight and minimise the need for artificial lighting during daylight hours.
- 5 Medium to high scale residential or serviced apartment development should be designed and located to maximise solar access to dwellings and communal open space on the norther facade.
- 53 All new medium to high scale residential or serviced apartment development should have direct ventilation and natural light.
- 6 The maximum distance of a habitable room such as a living, dining, bedroom or kitchen from a window providing natural light and ventilation to that room is 8 metres.
- 7 Light wells should not be used as the primary source of daylight for living rooms to ensure a sufficient level of outlook and daylight.
- 8 Medium to high scale residential or serviced apartment development should be designed to ensure living areas, private open space or communal open space, where such communal open space provides the primary area of private open space, are the main recipients of sunlight.
- 9 Medium to high scale residential or serviced apartment development should locate living areas, private open space and communal open space, where such communal open space provides the primary area of private open space, where they will receive sunlight and, where possible, should maintain at least two hours of direct sunlight solar time on 22 June to:
 - (a) at least one habitable room window (excluding bathroom, toilet, laundry or storage room windows);
 - (b) to at least 20 percent of the private open space; and
 - (c) communal open space, where such communal open space provides the primary private open space for any adjacent residential development.
- 10 Natural cross ventilation of habitable rooms should be achieved by the following methods:
 - (a) positioning window and door openings in different directions to encourage cross ventilation from cooling summer breezes;
 - (b) installing small low level windows on the windward side and larger raised openings on the leeward side to maximise airspeed in the room;
 - (c) installing higher level casement or sash windows, clerestory windows or operable fanlight windows to facilitate convective currents;
 - (d) selecting windows which the occupants can reconfigure to funnel breezes such as vertical louvered, casement windows and externally opening doors;
 - (e) ensuring the internal layout minimises interruptions to airflow;
 - (f) limiting building depth to allow for ease of cross ventilation; and/or
 - (g) draught proofing doors, windows and other openings.

Private Open Space

- 11 Medium to high scale residential development and serviced apartments should provide the following private open space:

- (a) studio (where there is no separate bedroom): no minimum requirement but some provision is desirable.
- (b) 1 bedroom dwelling/apartment: 8 square metres.
- (c) 2 bedroom dwelling/apartment: 11 square metres.
- (d) 3+ bedroom dwelling/apartment: 15 square metres.

A lesser amount of private open space may be considered appropriate in circumstances where the equivalent amount of open space is provided in a communal open space accessible to all occupants of the development.

Private open space for 2 or more bedroom dwellings/apartments may be divided into different areas whilst private open space for studios or 1 bedroom dwelling/apartments should be in a single area.

Areas used for parking of motor vehicles are not included as private open space.

- 12** Medium to high scale residential (other than student accommodation) or serviced apartment development should ensure direct access from living areas to private open space areas, which may take the form of balconies, terraces, decks or other elevated outdoor areas provided the amenity and visual privacy of adjacent properties is protected.
- 13** Other than for student accommodation, private open space should have a minimum dimension of 2 metres and should be well proportioned to be functional and promote indoor/outdoor living.

Balconies should be integrated into the overall architectural form and detail of the development and should:

- (a) utilise sun screens, pergolas, shutters and openable walls to control sunlight and wind;
 - (b) be cantilevered, partially cantilevered and/or recessed in response to daylight, wind, acoustic and visual privacy;
 - (c) be of a depth that ensures sunlight can enter the dwelling below; and
 - (d) allow views and casual surveillance of the street while providing for safety and visual privacy.
- 14** Secondary balconies, including Juliet balconies or operable walls with balustrades should be considered, subject to overlooking and privacy, for additional amenity and choice.
 - 15** For clothes drying, balconies off laundries or bathrooms and roof top areas should be screened from public view.
 - 16** The incorporation of roof top gardens is encouraged providing it does not result in unreasonable overlooking or loss of privacy.

Visual Privacy

- 17** Medium to high scale residential or serviced apartment development should be designed and sited to minimise the potential overlooking of habitable rooms such as bedrooms and living areas of adjacent development.
- 18** A habitable room window, balcony, roof garden, terrace or deck should be set-back from boundaries with adjacent sites at least three metres to provide an adequate level of amenity and privacy and to not restrict the reasonable development of adjacent sites.

Noise and Internal Layout

- 19** Medium to high scale residential or serviced apartment development close to high noise sources (e.g. major roads, established places of entertainment and centres of activity) should be designed to locate noise sensitive rooms and private open space away from noise sources, or be protected by appropriate shielding techniques.
- 20** Attached or abutting dwellings/apartments should be designed to minimise the transmission of sound between dwellings and, in particular, to protect bedrooms from possible noise intrusions.

Minimum Unit Sizes

- 21** Medium to high scale residential or serviced apartment development should provide a high quality living environment by ensuring the following minimum internal floor areas:
 - (a) studio (where there is no separate bedroom): 35 square metres.
 - (b) 1 bedroom dwelling/apartment: 50 square metres
 - (c) 2 bedroom dwelling/apartment: 65 square metres
 - (d) 3+ bedroom dwelling/apartment: 80 square metres plus an additional 15 square metres for every additional bedroom over 3 bedrooms.

Note: Dwelling/apartment "unit size" includes internal storage areas but does not include balconies or car parking as part of the calculation.

- 22** Internal structural columns should correspond with the position of internal walls to ensure that the space within the dwelling/apartment is useable.

Adaptability

- 23** Within medium to high scale residential or serviced apartment development, dwelling/apartment layouts should be adaptable to accommodate:
 - (a) a range of activities and privacy levels between different spaces;
 - (b) flexible room sizes and proportions;
 - (c) efficient circulation to optimise the functionality of floor space within rooms; and
 - (d) the future reuse of student accommodation as residential apartments through a design and layout that allows individual apartments to be reconfigured into a larger dwelling or other alternative use.

Design Technique (this is ONE WAY of meeting the above Principle)

72.1 *Design solutions may include:*

- (a) *windows in all habitable rooms and to the maximum number of non-habitable rooms;*
- (b) *adequate room sizes or open plan dwellings which provide a range of furniture layout options; and/or*
- (c) *dual master bedrooms that can support two independent adults living together or a live/work situation.*

Outlook

- 24** All medium to high scale residential or serviced apartment development should be designed to ensure the living rooms have a satisfactory external outlook. Living rooms that do not have an outlook or the only source of outlook is through high level windows or a skylight are not considered to provide an appropriate level of amenity for the occupiers.

Note: Outlook is a short range prospect and is distinct from a view which is more extensive and long range to particular objects or geographic features.

- 25** Light wells may be used as a source of daylight, ventilation, outlook and sunlight for medium to high scale residential or serviced apartment development provided that:
- (a) living rooms do not have lightwells as their only source of outlook;
 - (b) lightwells up to 18 metres in height have a minimum horizontal dimension of 3 metres or 6 metres if overlooked by bedrooms; and
 - (c) lightwells higher than 18 metres in height have a minimum horizontal dimension of 6 metres or 9 metres if overlooked by bedrooms.

On-Site Parking and Fencing

OBJECTIVE

Objective 23: Safe and convenient on-site car parking for resident and visitor vehicles.

PRINCIPLES OF DEVELOPMENT CONTROL

- 26** To ensure an adequate provision of on-site parking, car parking should be provided for medium to high scale residential (other than student accommodation) or serviced apartment development in accordance with [Table Adel/7](#).
- 27** Garages and parking structures associated with medium to high scale residential or serviced apartment development should be located so that they do not visually dominate the street frontage.
- 28** Car parking areas should be designed and located to:
- (a) be close and convenient to dwellings/apartments;
 - (b) be lit at night;
 - (c) be well ventilated if enclosed;
 - (d) avoid headlight glare into windows; and
 - (e) clearly define visitor parking.
- 29** Where garages are located within a basement or undercroft:
- (a) the width of access driveways should be kept to a minimum and should not detract from the streetscape;
 - (b) driveways should be designed to ensure safe and convenient access and egress;
 - (c) access should be restricted to one driveway or one point of access and egress;
 - (d) vehicles should be able to safely exit in a forward direction and should not compromise pedestrian safety or cause conflict with other vehicles; and

- (e) the height of the car park ceiling should not exceed one metre above the finished ground floor level to ensure minimal impact on the streetscape.

30 Fencing and walls should:

- (a) be articulated and detailed to provide visual interest;
- (b) assist the development to address the street;
- (c) assist in the provision of safety and surveillance;
- (d) assist in highlighting entrances; and
- (e) enable visibility of buildings from and to the street.

Storage Areas

31 Site facilities should be readily accessible to each dwelling/serviced apartment, complement the development and relevant desired character and should include:

- (a) a common mail box structure located close to the main pedestrian entrance;
- (b) areas for the storage and collection of goods, materials, refuse and waste including facilities to enable the separation of recyclable materials as appropriate to the size and nature of the development and screened from public view; and
- (c) external clothes drying areas for residential dwellings that do not incorporate ground level open space.

32 Medium to high scale residential (other than student accommodation) or serviced apartment development should provide adequate and accessible storage facilities for the occupants at the following minimum rates:

- (a) studio: 6 cubic metres
- (b) 1 bedroom dwelling/apartment: 8 cubic metres
- (c) 2 bedroom dwelling/apartment: 10 cubic metres
- (d) 3+ bedroom dwelling/apartment: 12 cubic metres

50 percent of the storage space should be provided within the dwelling/apartment with the remainder provided in the basement or other communal areas.

Environmental

Crime Prevention Through Urban Design

OBJECTIVES

Objective 24: A safe and secure, crime resistant environment that:

- (a) ensures that land uses are integrated and designed to facilitate natural surveillance;
- (b) promotes building and site security; and
- (c) promotes visibility through the incorporation of clear lines of sight and appropriate lighting.

PRINCIPLES OF DEVELOPMENT CONTROL

33 Development should promote the safety and security of the community in the public realm and within development. Development should:

- (a) promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:
 - (i) orientating windows, doors and building entrances towards the street, open spaces, car parks, pedestrian routes and public transport stops;
 - (ii) avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;
 - (iii) arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;
 - (iv) positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;
 - (v) creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;
 - (vi) locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;
 - (vii) ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and
 - (viii) ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.
- (b) provide access control by facilitating communication, escape and path finding within development through legible design by:
 - (i) incorporating clear directional devices;
 - (ii) avoiding opportunities for concealment near well travelled routes;
 - (iii) closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;
 - (iv) use of devices such as stainless steel mirrors where a passage has a bend;
 - (v) locating main entrances and exits at the front of a site and in view of a street;
 - (vi) providing open space and pedestrian routes which are clearly defined and have clear and direct sightlines for the users; and
 - (vii) locating elevators and stairwells where they can be viewed by a maximum number of people, near the edge of buildings where there is a glass wall at the entrance.
- (c) promote territoriality or sense of ownership through physical features that express ownership and control over the environment and provide a clear delineation of public and private space by:

- (i) clear delineation of boundaries marking public, private and semi-private space, such as by paving, lighting, walls and planting;
 - (ii) dividing large development sites into territorial zones to create a sense of ownership of common space by smaller groups of dwellings; and
 - (iii) locating main entrances and exits at the front of a site and in view of a street.
- (d) provide awareness through design of what is around and what is ahead so that legitimate users and observers can make an accurate assessment of the safety of a locality and site and plan their behaviour accordingly by:
 - (i) avoiding blind sharp corners, pillars, tall solid fences and a sudden change in grade of pathways, stairs or corridors so that movement can be predicted;
 - (ii) using devices such as convex security mirrors or reflective surfaces where lines of sight are impeded;
 - (iii) ensuring barriers along pathways such as landscaping, fencing and walls are permeable;
 - (iv) planting shrubs that have a mature height less than one metre and trees with a canopy that begins at two metres;
 - (v) adequate and consistent lighting of open spaces, building entrances, parking and pedestrian areas to avoid the creation of shadowed areas; and
 - (vi) use of robust and durable design features to discourage vandalism.
- 34** Residential development should be designed to overlook streets, public and communal open space to allow casual surveillance.
- 35** To maximise security and safety, buildings should be designed to minimise access between roofs, balconies and windows of adjacent buildings.
- 36** Security features should be incorporated within the design of shop fronts to complement the design of the frontage and allow window shopping out of hours. If security grilles are provided, these should:
 - (a) be transparent and illuminated to complement the appearance of the frontage;
 - (b) provide for window shopping; and
 - (c) allow for the spill of light from the shop front onto the street.

Solid shutters with less than 75 percent permeability are not acceptable.
- 37** Public toilets should be designed and located to:
 - (a) promote the visibility of people entering and exiting the facility by avoiding recessed entrances and dense shrubbery which obstructs passive surveillance;
 - (b) limit opportunities for vandalism through the use of vandal proof lighting on the public toilet buildings and nearby;
 - (c) avoid features which facilitate loitering, such as seating or telephones immediately adjacent the structure; and
 - (d) maximise surveillance through location near public transport links, pedestrian and cyclist networks.

Operating Hours and Associated Activities of Licensed Premises

OBJECTIVE

Objective 25: Operating hours of licensed premises or licensed entertainment premises, together with associated activities of such premises, established and operated so as to reinforce the desired character of the locality and appropriate behavioural activities.

PRINCIPLES OF DEVELOPMENT CONTROL

38 Licensed premises and licensed entertainment premises or similar should:

- (a) be located, designed and operated in order to reinforce the desired character of a locality, as expressed in the relevant Zone or Policy Area;
- (b) be located, designed and operated so as to not negatively impact on peoples orderly use and enjoyment of a locality, such as through disorderly behavioural activities and/or disorderly behavioural movement to and from such land uses; and
- (c) incorporate best practice measures to effectively manage the behaviour of users moving to and from such land uses.

39 Licensed premises and licensed entertainment premises or similar should operate with operating hours to reinforce the desired character of the locality.

Noise Emissions

OBJECTIVES

Objective 26: Development that does not unreasonably interfere with the desired character of the locality by generating unduly annoying or disturbing noise.

Objective 27: Noise sensitive development designed to protect its occupants from existing noise sources and from noise sources contemplated within the relevant Zone or Policy Area and that does not unreasonably interfere with the operation of non-residential uses contemplated within the relevant Zone or Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

Noise Sources

40 Development with potential to emit significant noise (including licensed entertainment premises and licensed premises) should incorporate appropriate noise attenuation measures in to their design to prevent noise from causing unreasonable interference with the amenity and desired character of the locality, as contemplated in the relevant Zone and Policy Area.

41 Development of licensed premises or licensed entertainment premises or similar in or adjacent to a City Living Zone, the Adelaide Historic (Conservation) Zone or the North Adelaide Historic (Conservation) Zone should include noise attenuation measures to achieve the following when assessed at the nearest existing or envisaged future noise sensitive development:

- (a) the music noise ($L_{10, 15 \text{ min}}$) is:
 - (i) less than 8 dB above the level of background noise₂ ($L_{90, 15 \text{ min}}$) in any octave band of the sound spectrum; and
 - (ii) less than 5 dB(A) above the level of background noise ($L_{A 90, 15 \text{ min}}$) for the overall (sum of all octave bands) A-weighted level.

- 42** Development of licensed premises or licensed entertainment premises or similar in the Capital City, Main Street, Mixed Use and City Frame Zones should include noise attenuation measures to achieve the following when assessed at:
- (a) the nearest existing noise sensitive location in or adjacent to that Zone:
 - (i) music noise ($L_{10, 15 \text{ min}}$) less than 8 dB above the level of background noise ($L_{90,15 \text{ min}}$) in any octave band of the sound spectrum; and
 - (ii) music noise ($L_{A10, 15 \text{ min}}$) less than 5 dB(A) above the level of background noise ($L_{A90,15 \text{ min}}$) for the overall (sum of all octave bands) A-weighted levels; or
 - (b) the nearest envisaged future noise sensitive location in or adjacent to that Zone:
 - (i) music noise ($L_{10, 15 \text{ min}}$) less than 8dB above the level of background noise ($L_{90,15 \text{ min}}$) in any octave band of the sound spectrum and music noise ($L_{10, 15 \text{ min}}$) less than 5dB(A) above the level of background noise ($L_{A90,15 \text{ min}}$) for the overall (sum of all octave bands) A-weighted levels; or
 - (ii) music noise ($L_{10, 15 \text{ min}}$) less than 60dB(Lin) in any octave band of the sound spectrum and the overall ($L_{A10,15 \text{ min}}$) noise level is less than 55 dB(A).
- 43** Mechanical plant or equipment should be designed, sited and screened to minimise noise impact on adjacent premises or properties. The noise level associated with the combined operation of plant and equipment such as air conditioning, ventilation and refrigeration systems when assessed at the nearest existing or envisaged noise sensitive location in or adjacent to the site should not exceed
- (a) 55 dB(A) during daytime (7.00am to 10.00pm) and 45 dB(A) during night time (10.00pm to 7.00am) when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.
 - (b) 50 dB(A) during daytime (7.00am to 10.00pm) and 40 dB(A) during night time (10.00pm to 7.00am) in or adjacent to a City Living Zone, the Adelaide Historic (Conservation) Zone, the North Adelaide Historic (Conservation) Zone or the Park Lands Zone when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.
- 44** To ensure minimal disturbance to residents:
- (a) ancillary activities such as deliveries, collection, movement of private waste bins, goods, empty bottles and the like should not occur:
 - (i) after 10.00pm; and
 - (ii) before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.
 - (b) typical activity within any car park area including vehicles being started, doors closing and vehicles moving away from the premises should not result in sleep disturbance when proposed for use after 10.00pm as defined by the limits recommended by the World Health Organisation.

Noise Receivers

- 45** Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise sources such as major transport corridors (road, rail, tram and aircraft), commercial centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.

- 46** Noise sensitive development in mixed use areas should not unreasonably interfere with the operation of surrounding non-residential uses that generate noise levels that are commensurate with the envisaged amenity of the locality.
- 47** Noise sensitive development adjacent to noise sources should include noise attenuation measures to achieve the following:
- (a) satisfaction of the sleep disturbance criteria in the bedrooms or sleeping areas of the development as defined by the limits recommended by the World Health Organisation;
 - (b) the maximum satisfactory levels in any habitable room for development near major roads, as provided in the Australian/New Zealand Standard AS/NZS 2107:2000 - 'Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors'; and
 - (c) noise level in any bedroom, when exposed to music noise (L_{10}) from existing entertainment premises, being:
 - (i) less than 8 dB above the level of background noise ($L_{90,15 \text{ min}}$) in any octave band of the sound spectrum; and
 - (ii) less than 5 dB(A) above the level of background noise ($L_{A90,15 \text{ min}}$) for the overall (sum of all octave bands) A-weighted levels

Background noise within the habitable room can be taken to be that expected in a typical residential/apartment development of the type proposed, that is inclusive of internal noise sources such as air conditioning systems, refrigerators and the like as deemed appropriate.

Waste Management

OBJECTIVE

Objective 28: Development which supports high local environmental quality, promotes waste minimisation, re-use and recycling, encourages waste water, grey water and stormwater re-use and does not generate unacceptable levels of air, liquid or solid pollution.

PRINCIPLES OF DEVELOPMENT CONTROL

- 48** A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.
- 49** A dedicated area for the collection and sorting of construction waste and the recycling of building materials during construction as appropriate to the size and nature of the development should be provided and screened from public view.
- 50** Development greater than 2 000 square metres of total floor area should manage waste by:
- (a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;
 - (b) on-site storage and management of waste;
 - (c) disposal of non-recyclable waste; and
 - (d) incorporating waste water and stormwater re-use including the treatment and re-use of grey water.
- 51** Development should not result in emission of atmospheric, liquid or other pollutants, or cause unacceptable levels of smell and odour which would detrimentally affect the amenity of adjacent properties or its locality. Land uses such as restaurants, shops, cafés or other uses that generate smell and odour should:

- (a) ensure extraction flues, ventilation and plant equipment are located in appropriate locations that will not detrimentally affect the amenity of adjacent occupiers in terms of noise, odours and the appearance of the equipment;
- (b) ensure ventilation and extraction equipment and ducting have the capacity to clean and filter the air before being released into the atmosphere; and
- (c) ensure the size of the ventilation and extraction equipment is suitable and has the capacity to adequately cater for the demand generated by the potential number of patrons.

Contaminated Sites

OBJECTIVE

Objective 29: A safe and healthy living and working environment.

PRINCIPLES OF DEVELOPMENT CONTROL

- 52** Where there is evidence of, or reasonable suspicion that land, buildings and/or water, including underground water, may have been contaminated, or there is evidence of past potentially contaminating activity/ies, development should only occur where it is demonstrated that the land, buildings and/or water can be made suitable for its intended use prior to commencement of that use.

Energy Efficiency

OBJECTIVE

Objective 30: Development which is compatible with the long term sustainability of the environment, minimises consumption of non-renewable resources and utilises alternative energy generation systems.

PRINCIPLES OF DEVELOPMENT CONTROL

All Development

- 53** Buildings should provide adequate thermal comfort for occupants and minimise the need for energy use for heating, cooling and lighting by:
- (a) providing an internal day living area with a north-facing window, other than for minor additions*, by:
 - (i) arranging and concentrating main activity areas of a building to the north for solar penetration; and
 - (ii) placing buildings on east-west allotments against or close to the southern boundary to maximise northern solar access and separation to other buildings to the north.
 - (b) efficient layout, such as zoning house layout to enable main living areas to be separately heated and cooled, other than for minor additions;
 - (c) locating, sizing and shading windows to reduce summer heat loads and permit entry of winter sun;
 - (d) allowing for natural cross ventilation to enable cooling breezes to reduce internal temperatures in summer;
 - (e) including thermal insulation of roof, walls, floors and ceilings and by draught proofing doors, windows and openings;

* Minor additions have a floor area less than 50 percent of the existing dwelling and do not include a day living area.

- (f) ensuring light colours are applied to external surfaces that receive a high degree of sun exposure, but not to an extent that will cause glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles;
 - (g) providing an external clothes line for residential development; and
 - (h) use of landscaping.
- 54** All development should be designed to promote naturally ventilated and day lit buildings to minimise the need for mechanical ventilation and lighting systems.
- 55** Energy reductions should, where possible, be achieved by the following:
- (a) appropriate orientation of the building by:
 - (i) maximising north/south facing facades;
 - (ii) designing and locating the building so the north facade receives good direct solar radiation;
 - (iii) minimising east/west facades to protect the building from summer sun and winter winds;
 - (iv) narrow floor plates to maximise the amount of floor area receiving good daylight; and/or
 - (v) minimising the ratio of wall surface to floor area.
 - (b) window orientation and shading;
 - (c) adequate thermal mass including night time purging to cool thermal mass;
 - (d) appropriate insulation by:
 - (i) insulating windows, walls, floors and roofs; and
 - (ii) sealing of external openings to minimise infiltration.
 - (e) maximising natural ventilation including the provision of openable windows;
 - (f) appropriate selection of materials, colours and finishes; and
 - (g) introduction of efficient energy use technologies such as geo-exchange and embedded, distributed energy generation systems such as cogeneration*, wind power, fuel cells and solar photovoltaic panels that supplement the energy needs of the building and in some cases, export surplus energy to the electricity grid.
- 56** Orientation and pitch of the roof should facilitate the efficient use of solar collectors and photovoltaic cells.
- 57** Buildings, where practical, should be refurbished, adapted and reused to ensure an efficient use of resources.
- 58** New buildings should be readily adaptable to future alternative uses.
- 59** Selection of internal materials for all buildings should be made with regard to internal air quality and ensure low toxic emissions, particularly with respect to paint and joinery products.

Residential Development

- 60** New residential development and residential extensions should be designed to minimise energy consumption and limit greenhouse gas emissions.

- 61** Development is encouraged to avoid heat loss by incorporating treatments, such as double glazing of windows along the southern elevation, or by minimizing the extent of windows facing south.

Renewable Energy

OBJECTIVES

- Objective 31:** The development of renewable energy facilities, such as wind and biomass energy facilities, in appropriate locations.
- Objective 32:** Renewable energy facilities located, sited, designed and operated to avoid or minimise adverse impacts and maximise positive impacts on the environment, local community and the State.

PRINCIPLES OF DEVELOPMENT CONTROL

- 62** Renewable energy facilities, including wind farms, should be located, sited, designed and operated in a manner which avoids or minimises adverse impacts and maximises positive impacts on the environment, local community and the State.
- 63** Renewable energy facilities, including wind farms, and ancillary developments should be located in areas that maximise efficient generation and supply of electricity.

Micro-climate and Sunlight

OBJECTIVES

- Objective 33:** Buildings which are designed and sited to be energy efficient and to minimise micro-climatic and solar access impacts on land or other buildings.
- Objective 34:** Protection from rain, wind and sun without causing detriment to heritage places, street trees or the integrity of the streetscape.

PRINCIPLES OF DEVELOPMENT CONTROL

- 64** Development should be designed and sited to minimise micro-climatic and solar access impact on adjacent land or buildings, including effects of patterns of wind, temperature, daylight, sunlight, glare and shadow.
- 65** Development should be designed and sited to ensure an adequate level of daylight, minimise overshadowing of buildings, and public and private outdoor spaces, particularly during the lunch time hours.
- 66** Development should not significantly reduce daylight to private open space, communal open space, where such communal open space provides the primary private open space, and habitable rooms in adjacent City Living Zone, Adelaide Historic (Conservation) Zone and North Adelaide Historic (Conservation) Zone.
- 67** Glazing on building facades should not result in glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles.
- 68** Buildings within the Core and Primary Pedestrian Areas identified in [Map Adel/1 \(Overlays 2, 2A and 3\)](#), unless specified otherwise within the relevant Zone or Policy Area, should be designed to provide weather protection for pedestrians against rain, wind and sun. The design of canopies, verandahs and awnings should be compatible with the style and character of the building and adjoining buildings, as well as the desired character, both in scale and detail.
- 69** Weather protection should not be introduced where it would interfere with the integrity or heritage value of heritage places or unduly affect street trees.

- 70** Development that is over 21 metres in building height and is to be built at or on the street frontage should minimise wind tunnel effect.

Infrastructure

OBJECTIVES

Objective 40: Minimisation of the visual impact of infrastructure facilities.

Objective 41: Provision of services and infrastructure that are appropriate for the intended development and the desired character of the Zone or Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

- 71** Provision should be made for utility services to the site of a development, including provision for the supply of water, gas and electricity and for the satisfactory disposal and potential re-use of sewage and waste water, drainage and storm water from the site of the development.
- 72** Service structures, plant and equipment within a site should be designed to be an integral part of the development and should be suitably screened from public spaces or streets.

Heritage and Conservation

OBJECTIVES

Objective 42: Acknowledge the diversity of Adelaide's cultural heritage from pre-European occupation to current time through the conservation of heritage places and retention of their heritage value.

Objective 43: Development that retains the heritage value and setting of a heritage place and its built form contribution to the locality.

PRINCIPLES OF DEVELOPMENT CONTROL

General

- 73** Development affecting a State heritage place ([Table Adel/1](#)), Local heritage place ([Table Adel/2](#)), Local heritage place (Townscape) ([Table Adel/3](#)) or Local heritage place (City Significance) ([Table Adel/4](#)), including:

- (a) adaptation to a new use;
- (b) additional construction;
- (c) part demolition;
- (d) alterations; or
- (e) conservation works;

should facilitate its continued or adaptive use, and utilise materials, finishes, setbacks, scale and other built form qualities that are complementary to the heritage place.

- 74** Development on land adjacent to a heritage place in non-residential Zones or Policy Areas should incorporate design elements, including where it comprises an innovative contemporary design, that:
- (a) utilise materials, finishes, and other built form qualities that complement the adjacent heritage place; and
 - (b) is located no closer to the primary street frontage than the adjacent heritage place.

- 75** Development that abuts the built form/fabric of a heritage place should be carefully integrated, generally being located behind or at the side of the heritage place and without necessarily replicating historic detailing, so as to retain the heritage value of the heritage place.

Built Form and Townscape

OBJECTIVES

Objective 46: Reinforcement of the city's grid pattern of streets through:

- (a) high rise development framing city boulevards, the Squares and Park Lands
- (b) vibrant main streets of a more intimate scale that help bring the city to life
- (c) unique and interesting laneways that provide a sense of enclosure and intimacy.

Objective 47: Buildings should be designed to:

- (a) reinforce the desired character of the area as contemplated by the minimum and maximum building heights in the Zone and Policy Area provisions;
- (b) maintain a sense of openness to the sky and daylight to public spaces, open space areas and existing buildings;
- (c) contribute to pedestrian safety and comfort; and
- (d) provide for a transition of building heights between Zone and Policy Areas where building height guidelines differ.

Objective 48: Development which incorporates a high level of design excellence in terms of scale, bulk, massing, materials, finishes, colours and architectural treatment.

PRINCIPLES OF DEVELOPMENT CONTROL

- 76** Where development significantly exceeds quantitative policy provisions, it should demonstrate a significantly higher standard of design outcome in relation to qualitative policy provisions including pedestrian and cyclist amenity, activation, sustainability and public realm and streetscape contribution.

Height, Bulk and Scale

PRINCIPLES OF DEVELOPMENT CONTROL

- 77** Development should be of a high standard of design and should reinforce the grid layout and distinctive urban character of the City by maintaining a clear distinction between the following:

- (a) the intense urban development and built-form of the town acres in the Capital City, Main Street, Mixed Use, City Frame and City Living Zones;
- (b) the less intense and more informal groupings of buildings set within the landscaped environment of the Institutional Zones;
- (c) the historic character of the Adelaide and North Adelaide Historic (Conservation) Zones and groups of historic housing within the City Living Zone; and
- (d) the open landscape of the Park Lands Zone.

- 78** The height and scale of development and the type of land use should reflect and respond to the role of the street it fronts as illustrated on [Map Adel/1 \(Overlay 1\)](#).

- 79** The height, scale and massing of buildings should reinforce:

- (a) the desired character, built form, public environment and scale of the streetscape as contemplated within the Zone and Policy Area, and have regard to:
 - (i) maintaining consistent parapet lines, floor levels, height and massing with existing buildings consistent with the areas desired character;
 - (ii) reflecting the prevailing pattern of visual sub-division of neighbouring building frontages where frontages display a character pattern of vertical and horizontal sub-divisions; and
 - (iii) avoiding massive unbroken facades.
 - (b) a comfortable proportion of human scale at street level by:
 - (i) building ground level to the street frontage where zero set-backs prevail;
 - (ii) breaking up the building facade into distinct elements;
 - (iii) incorporating art work and wall and window detailing; and
 - (iv) including attractive planting, seating and pedestrian shelter.
- 80** Where possible, large sites should incorporate pedestrian links and combine them with publicly accessible open space.
- 81** Buildings and structures should not adversely affect by way of their height and location the long-term operational, safety and commercial requirements of Adelaide International Airport. Buildings and structures which exceed the heights shown in [Map Adel/1 \(Overlay 5\)](#) and which penetrate the Obstacle Limitation Surfaces (OLS) should be designed, marked or lit to ensure the safe operation of aircraft within the airspace around the Adelaide International Airport.
- 82** Buildings within the Capital City Zone should be built to the street edge to reinforce the grid pattern, create a continuity of frontage and provide definition and enclosure to the public realm whilst contributing to the interest, vitality and security of the pedestrian environment.

Composition and Proportion

- 83** Development should respect the composition and proportion of architectural elements of building facades that form an important pattern which contributes to the streetscape's distinctive character in a manner consistent with the desired character of a locality by:
- (a) establishing visual links with neighbouring buildings by reflecting and reinforcing the prevailing pattern of visual sub-division in building facades where a pattern of vertical and/or horizontal sub-divisions is evident and desirable, for example, there may be strong horizontal lines of verandahs, masonry courses, podia or openings, or there may be vertical proportions in the divisions of facades or windows; and
 - (b) clearly defining ground, middle and roof top levels.
- 84** Where there is little or no established building pattern, new buildings should create new features which contribute to an areas desired character and the way the urban environment is understood by:
- (a) frontages creating clearly defined edges;
 - (b) generating new compositions and points of interest;
 - (c) introducing elements for future neighbouring buildings; and
 - (d) emphasising the importance of the building according to the street hierarchy.

Articulation and Modelling

- 85** Building facades fronting street frontages, access ways, driveways or public spaces should be composed with an appropriate scale, rhythm and proportion which responds to the use of the building, the desired character of the locality and the modelling and proportions of adjacent buildings.
- 86** Balconies should:
- (a) respond to the street context and building orientation; and
 - (b) incorporate balustrade detailing to reflect the balcony type and location and the materials and detail of the building facade.
- 87** No part of any fully enclosed building should extend over property boundaries, including streets and public spaces, whether above a balcony at a lower level or not.

Materials, Colours and Finishes

- 88** The design, external materials, colours and finishes of buildings should have regard to their surrounding townscape context, built form and public environment, consistent with the desired character of the relevant Zone and Policy Area.
- 89** Development should be finished with materials that are sympathetic to the design and setting of the new building and which incorporate recycled or low embodied energy materials. The form, colour, texture and quality of materials should be of high quality, durable and contribute to the desired character of the locality. Materials, colours and finishes should not necessarily imitate materials and colours of an existing streetscape
- 90** Materials and finishes that are easily maintained and do not readily stain, discolour or deteriorate should be utilised.
- 91** Development should avoid the use of large expanses of highly reflective materials and large areas of monotonous, sheer materials (such as polished granite and curtained wall glazing).

Sky and Roof Lines

OBJECTIVE

Objective 49: Innovative and interesting skylines which contribute to the overall design and performance of the building.

PRINCIPLES OF DEVELOPMENT CONTROL

- 92** Where a prevailing pattern of roof form assists in establishing the desired character of the locality, new roof forms should be complementary to the shape, pitch, angle and materials of adjacent building roofs.
- 93** Buildings should be designed to incorporate well designed roof tops that:
- (a) reinforce the desired character of the locality, as expressed in the relevant Zone or Policy Area;
 - (b) enhance the skyline and local views;
 - (c) contribute to the architectural quality of the building;
 - (d) provide a compositional relationship between the upper-most levels and the lower portions of the building;
 - (e) provide an expression of identity;
 - (f) articulate the roof, breaking down its massing on large buildings to minimise apparent bulk;

- (g) respond to the orientation of the site; and
- (h) create minimal glare.

Active Street Frontages

OBJECTIVES

Objective 50: Development that enhances the public environment and, where appropriate provides activity and interest at street level, reinforcing a locality's desired character.

Objective 51: Development designed to promote pedestrian activity and provide a high quality experience for City residents, workers and visitors by:

- (a) enlivening building edges;
- (b) creating welcoming, safe and vibrant spaces;
- (c) improving perceptions of public safety through passive surveillance; and
- (d) creating interesting and lively pedestrian environments.

PRINCIPLES OF DEVELOPMENT CONTROL

- 94** Development should be designed to create active street frontages that provide activity and interest to passing pedestrians and contribute to the liveliness, vitality and security of the public realm.
- 95** Retail frontages should be designed to provide interest to passing pedestrians at street level and relief to building mass.
- 96** Commercial buildings should be designed to ensure that ground floor facades are rich in detail so they are exciting to walk by, interesting to look at and to stand beside.

Outdoor Dining

OBJECTIVE

Objective 52: Development that contributes to the vibrancy, activity and desired character of a locality.

PRINCIPLES OF DEVELOPMENT CONTROL

- 97** Outdoor dining should:
 - (a) be located outside the associated premises;
 - (b) provide sufficient set-backs, such as from kerbs and property boundaries, and clearances, such as from buildings;
 - (c) be located in an area safe for patrons where the security of the building is not compromised;
 - (d) ensure the dining area is set back from the building line at street intersections;
 - (e) ensure unimpeded pedestrian flow through free and uninterrupted pedestrian paths; and
 - (f) ensure wheelchair access to pedestrian ramps is not compromised.
- 98** Structures should:
 - (a) be of high quality design and form an integral part of the streetscape;

- (b) not restrict public access;
 - (c) not detract or restrict views of significant sightlines, buildings and landmarks;
- 99** Signage that identifies the business name or logo, or advertises goods sold on the premises is only appropriate on glass and canvas screens and umbrellas and should meet the following:
- (a) signage and advertisements should be designed to improve and complement the amenity of the premises, be of an appropriate design and consistent with the desired character of the locality;
 - (b) advertisements on outdoor dining items such as umbrellas and canvas screens should not exceed a portion that covers 10 percent of the total available space on each outdoor dining item, up to half of which may be commercial advertisements in the form of product logos used or sold by the premises;
 - (c) advertisements should not be illuminated or animated; and
 - (d) third party advertising on outdoor dining items is inappropriate.

Landscaping

OBJECTIVE

Objective 55: Water conserving landscaping that enhances the local landscape character and creates a pleasant, safe and attractive living environment.

PRINCIPLES OF DEVELOPMENT CONTROL

100 Landscaping should:

- (a) be selected and designed for water conservation;
- (b) form an integral part of the design of development; and
- (c) be used to foster human scale, define spaces, reinforce paths and edges, screen utility areas and enhance the visual amenity of the area.

101 Landscaping should incorporate local indigenous species suited to the site and development, provided such landscaping is consistent with the desired character of the locality and any heritage place.

102 Landscaping should be provided to all areas of communal space, driveways and shared car parking areas.

103 Landscaping between the road and dwellings should be provided to screen and protect the dwellings from dust and visual impacts of the road.

Advertising

OBJECTIVE

Objective 56: Outdoor advertisements that are designed and located to:

- (a) reinforce the desired character and amenity of the locality within which it is located and rectify existing unsatisfactory situations;
- (b) be concise and efficient in communicating with the public, avoiding a proliferation of confusing and cluttered displays or a large number of advertisements; and
- (c) not create a hazard.

PRINCIPLES OF DEVELOPMENT CONTROL

104 Advertisements should be designed to respect and enhance the desired character and amenity of the locality by the means listed below:

- (a) the scale, type, design, location, materials, colour, style and illumination of any advertisements should be compatible with the design and character of the buildings and land to which it is related, and should be in accordance with provisions for the Zone and Policy Area in which it is situated and any relevant adjacent Zones or Policy Areas;
- (b) advertisements should be integrated with the architectural form, style and colour of buildings and wherever possible, requirements for advertisements should be considered in the design of new buildings;
- (c) advertisements should be artistically interesting in terms of graphics and construction with intricacy and individuality in design encouraged while maintaining consistency in design and style where co-ordinated advertisements are appropriate;
- (d) structural supports should be concealed from public view or of minimal visual impact;
- (e) advertisements on individual premises should be co-ordinated in terms of type and design and should be limited in number to minimize visual clutter;
- (f) advertisements should be displayed on fascia signs or located below canopy level;
- (g) advertisements on buildings or sites occupied by a number of tenants should be co-ordinated, complementary and the number kept to a minimum; and
- (h) advertisements on or adjacent to a heritage place should be designed and located to respect the heritage value of the heritage place.

105 Product advertisements illustrating products sold on the premises in conjunction with the business name should not exceed 25 percent of the area of any advertisement.

106 Advertisements should not endanger public safety or detrimentally affect the amenity of adjacent premises by reason of their location, position, construction or design and should:

- (a) not emit excessive glare or reflection from internal or external illumination;
- (b) not obscure road users' and pedestrians' views of vehicles, pedestrians or potentially hazardous road features;
- (c) not cause confusion with, or reduce the effectiveness of traffic control devices;
- (d) have a clearance between the footpath and base or underside of projecting signage of at least 2.5 metres for permanent advertisements and 2.3 metres for temporary advertisements, and between the kerb face and outside edge of the sign of at least 600 millimetres; and
- (e) permit safe and convenient pedestrian movement.

107 Temporary advertisement hoardings or shrouds required for the screening of construction sites or for creating visual interest should occur only where they are:

- (a) of a high standard of design;
- (b) displayed only during the period of construction;
- (c) comprised of high quality opaque, solid and non-reflective material that is durable, low maintenance and appropriate to the City context;

- (d) required to conceal wiring and conduits; and
- (e) do not create undue risk to public or private safety.

Transport and Access

Access and Movement

OBJECTIVE

Objective 60: Access to and movement within the City that is easy, safe, comfortable and convenient with priority given to pedestrian and cyclist safety and access.

PRINCIPLES OF DEVELOPMENT CONTROL

- 108** Development should provide safe, convenient and comfortable access and movement.
- 109** Vehicle access points along primary and secondary city access roads and local connector roads, as shown on [Map Adel/1 \(Overlay 1\)](#) should be restricted.

Pedestrian Access

OBJECTIVES

- Objective 61:** Development that promotes the comfort, enjoyment and security of pedestrians by providing shelter and reducing conflict with motor vehicles.
- Objective 62:** Development that contributes to the quality of the public realm as a safe, secure and attractive environment for pedestrian movement and social interaction.
- Objective 63:** Safe and convenient design of and access to buildings and public spaces, particularly for people with disabilities.

PRINCIPLES OF DEVELOPMENT CONTROL

- 110** Development should reflect the significance of the paths and increase the permeability of the pedestrian network identified within [Map Adel/1 \(Overlay 2\)](#) by ensuring:
 - (a) pedestrians are not disrupted or inconvenienced by badly designed or located vehicle access ramps in footpaths or streets; and
 - (b) vehicle and service entry points are kept to a minimum to avoid adverse impact on pedestrian amenity.
- 111** Within the Core, Primary and Secondary Pedestrian Areas identified within [Map Adel/1 \(Overlays 2, 2A and 3\)](#), development should be designed to support the establishment and maintenance of continuous footpaths so that pedestrian flow is free and uninterrupted. Pedestrian access should be provided at ground level mid-block between all streets.
- 112** Development should provide and maintain pedestrian shelter, access and through-site links in accordance with the walking routes identified within [Map Adel/1 \(Overlays 2, 2A and 3\)](#) and the provisions of the Zone or Policy Area in which it is located. Such facilities should be appropriately designed and detailed to enhance the pedestrian environment, have regard to the mobility needs of people with disabilities, and be safe, suitable and accessible.
- 113** Corner buildings in the Central Business Policy Area of the Capital City Zone, buildings adjacent to street intersections and buildings along a high concentration public transport route or along public transport pedestrian routes identified within [Map Adel/1 \(Overlay 4\)](#) should provide weather protection for pedestrians in the form of verandahs, awnings or canopies. Where verandahs or awnings are provided which block street lighting, they should include additional lighting beneath the canopy.

- 114** Permanent structures over a footpath should have a minimum clearance of 3.0 metres above the existing footpath level, except for advertisements which should have a minimum clearance of 2.5 metres and temporary structures and retractable canopies which should have a minimum clearance of 2.3 metres above the existing footpath level.
- 115** Where posts are required to support permanent structures, they should be located at least 600 millimetres from the kerb line.
- 116** Access for people with disabilities should be provided to and within all buildings to which members of the public have access in accordance with the relevant Australian Standards. Such access should be provided through the principal entrance, subject to heritage considerations and for exemptions under the relevant legislation.

Bicycle Access

OBJECTIVES

- Objective 64:** Greater use of bicycles for travel to and within the City and the improvement of conditions, safety and facilities for cyclists.
- Objective 65:** Adequate supply of secure, short stay and long stay bicycle parking to support desired growth in City activities.

PRINCIPLES OF DEVELOPMENT CONTROL

- 117** Development should have regard to the bicycle routes identified within [Map Adel/1 \(Overlay 3\)](#) by:
- (a) limiting vehicular access points; and
 - (b) ensuring that vehicles can enter and leave the site in a forward direction, thereby avoiding reverse manoeuvres.
- 118** An adequate supply of on-site secure bicycle parking should be provided to meet the demand generated by the development within the site area of the development. Bicycle parking should be provided in accordance with the requirements set out in [Table Adel/6](#).
- 119** Onsite secure bicycle parking facilities for residents and employees (long stay) should be:
- (a) located in a prominent place;
 - (b) located at ground floor level;
 - (c) located undercover;
 - (d) located where passive surveillance is possible, or covered by CCTV;
 - (e) well lit and well signed;
 - (f) close to well used entrances;
 - (g) accessible by cycling along a safe, well lit route;
 - (h) take the form of a secure cage with locking rails inside or individual bicycle lockers; and
 - (i) in the case of a cage have an access key/pass common to the building access key/pass.
- 120** Onsite secure bicycle parking facilities for short stay users (i.e. bicycle rails) should be:
- (a) directly associated with the main entrance;
 - (b) located at ground floor level;

- (c) located undercover;
- (d) well lit and well signed;
- (e) located where passive surveillance is possible, or covered by CCTV; and
- (f) accessible by cycling along a safe, well lit route.

121 Access to bicycle parking should be designed to:

- (a) minimise conflict with motor vehicles and pedestrians;
- (b) ensure the route is well signed and well lit including the use of road markings such as a bicycle logo if appropriate to help guide cyclists; and
- (c) ensure the route is unhindered by low roof heights.

Traffic and Vehicle Access

OBJECTIVES

- Objective 68:** Development that supports a shift toward active and sustainable transport modes (i.e. public transport, cycling and walking).
- Objective 69:** An enhanced City environment and the maintenance of an appropriate hierarchy of roads to distribute traffic into the City to serve development in preference to through traffic.
- Objective 70:** Adequate off-street facilities for loading and unloading of courier, delivery and service vehicles and access for emergency vehicles.

PRINCIPLES OF DEVELOPMENT CONTROL

- 122** Development should be designed so that vehicle access points for parking, servicing or deliveries, and pedestrian access to a site, are located to minimise traffic hazards and vehicle queuing on public roads. Access should be safe, convenient and suitable for the development on the site, and should be obtained from minor streets and lanes unless otherwise stated in the provisions for the relevant Zone or Policy Area and provided residential amenity is not unreasonably affected.
- 123** Facilities for the loading and unloading of courier, delivery and service vehicles and access for emergency vehicles should be provided on-site as appropriate to the size and nature of the development. Such facilities should be screened from public view and designed, where possible, so that vehicles may enter and leave in a forward direction.
- 124** Where practicable, development sites should contain sufficient space for the location of construction equipment during the course of building construction, so that development does not rely on the use of Council road reserves to locate such equipment.
- 125** Vehicular access to development located within the Core and Primary Pedestrian Areas identified in [Map Adel/1 \(Overlay 2A\)](#) should be limited and designed to minimise interruption to street frontages.
- 126** Where vehicular access to a development is gained by an existing crossing in the Core Pedestrian Area identified in [Map Adel/1 \(Overlay 2A\)](#), there should be no increase in the number of parking spaces served by the crossing, nor any increase in the number of existing crossings serving that development.

Car Parking

OBJECTIVES

Objective 71: To meet community expectation for parking supply while supporting a shift toward active and sustainable transport modes.

Objective 72: An adequate supply of short-stay and long-stay parking to support desired growth in City activities without detrimental affect on traffic and pedestrian flows.

PRINCIPLES OF DEVELOPMENT CONTROL

127 Car parking areas should be located and designed to:

- (a) ensure safe and convenient pedestrian movement and traffic circulation through and within the car parking area;
- (b) include adequate provision for manoeuvring and individually accessible car standing areas;
- (c) enable, where practical, vehicles to enter and leave the site in a forward direction;
- (d) minimise interruption to the pattern of built form along street frontages;
- (e) provide for access off minor streets and for the screening from public view of such car parking areas by buildings on the site wherever possible;
- (f) minimise adverse impacts on adjoining residential properties in relation to noise and access and egress;
- (g) minimise loss of existing on-street parking spaces arising through crossovers and access;
- (h) incorporate secure bicycle parking spaces and facilitate convenient, safe and comfortable access to these spaces by cyclists; and
- (i) provide landscaping, such as semi-mature trees, to shade parked vehicles and reduce the visual impact of the car parking area while maintaining direct sight lines and informal visual surveillance.

128 Off-street parking should:

- (a) be controlled in accordance with the provisions for the relevant Policy Area;
- (b) be located away from street frontages or designed as an integral part of buildings on the site. Provision of parking at basement level is encouraged; and
- (c) not include separate garages or carports in front of buildings within front set-backs.

129 Off-street parking in the Core Pedestrian Area identified in [Map Adel/1 \(Overlay 2A\)](#) will only be appropriate where:

- (a) parking is ancillary to another activity carried out on the land;
- (b) it can be provided without loss of pedestrian amenity; and
- (c) it is not separately created on a strata title or community title basis (unless in association with another title held on the site).

130 Multi-level car parks and short stay public use of ancillary car parking spaces are discouraged at ground floor street frontages in the Primary Pedestrian Area identified in [Map Adel/1 \(Overlays 2, 2A and 3\)](#). Multi-level car parks, short stay public use of ancillary car parking spaces or non-ancillary car parking use of an existing building may be appropriate where it:

- (a) is located away from ground floor street frontages to major streets;

- (b) ensures vehicle access is from the road with less pedestrian activity in instances where a site has access to more than one road frontage;
- (c) has no more than one entry lane and one exit lane;
- (d) has a controlled exit at the property boundary to stop vehicles before travelling across the footpath;
- (e) has no more than one left in and one left out access point;
- (f) avoids access points along high concentration public transport routes identified in [Map Adel/1 \(Overlay 4\)](#); and
- (g) with respect to ancillary parking, is provided at basement level, or undercroft if located behind other uses which provide activity on the street frontage.

131 Multi-level car parks should be designed to:

- (a) provide active street frontages and land uses such as commercial, retail or other non-car park uses, along ground floor street frontages to maintain pedestrian interest and activity at street level;
- (b) be of a high quality design and complement the surrounding built form in terms of height, bulk and scale;
- (c) provide surveillance, lighting and direct sightlines along clearly defined and direct walkways, through and within car parking areas and to lift and toilet areas;
- (d) on a corner site with two major street frontages, be set back from the major street frontages, with commercial or other non-car park floor space in front of and screening the car parking building;
- (e) on a site with only one major street frontage, include screening so that any car parking is not visible from the public realm either day or night, and detailed to complement neighbouring buildings in a manner consistent with desired character in the relevant Zone and Policy Area;
- (f) incorporate treatments to manage the interface with adjacent housing, such as careful use of siting and use of materials and landscaping;
- (g) not have vehicle access points across major walking routes identified in [Map Adel/1 \(Overlay 2\)](#); and
- (h) provide safe and secure bicycle parking spaces in accordance with the requirements of [Table Adel/6](#).

Economic Growth and Land Use

OBJECTIVES

Objective 73: The role of the City enhanced as:

- (a) the community, civic and cultural heart of South Australia and as a driving force in the prosperity of the State;
- (b) the State centre for business, administration, services, employment, education, political and cultural activities, government and public administration;
- (c) a welcoming, secure, attractive and accessible meeting place for the people of metropolitan Adelaide and beyond for leisure, entertainment, civic and cultural activity, specialty shopping, personal and community services;

- (f) the gateway to the attractions of South Australia for international and interstate visitors by developing a wide range of visitor accommodation, facilities and attractions, particularly attractions which showcase the particular strengths of South Australia; and
- (g) a great place to live, with a growing diversity of accommodation for different incomes and lifestyles.

Objective 74: A business environment which encourages investment from domestic and foreign sources, business development and employment.

Objective 75: Development which reinforces clusters and nodes of activity and distinctive local character.

Objective 76: A diverse mix of commercial, community, civic and residential activities to meet the future needs of the Capital City of South Australia.

PRINCIPLES OF DEVELOPMENT CONTROL

132 Development, particularly within the Capital City and Institutional Zones, is encouraged to:

- (a) provide a range of shopping facilities in locations that are readily accessible;
- (b) provide for the growth in economic activities that sustain and enhance the variety and mix of land uses and the character and function of the City;
- (d) be accessible to all modes of transport (particularly public transport) and safe pedestrian and cycling routes; and
- (e) have minimal impact on the amenity of residential areas.