

166 The Parade Pty Ltd c/- Masterplan SA Pty Ltd

Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development, incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.

166 The Parade, Norwood

DA 155/M011/19

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OVERVIEW

Application No	DA 155/M011/19
Unique ID/KNET ID	2019/14124/01 (4612)
Applicant	166 The Parade Pty Ltd c/- Masterplan SA Pty Ltd
Proposal	Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development, incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Subject Land	166 The Parade, Norwood
Zone/Policy Area	District Centre (Norwood) Zone, Retail Core Policy Area
Relevant Authority	State Commission Assessment Panel
Lodgement Date	17 October 2019
Council	Norwood Payneham & St Peters
Development Plan	Norwood Payneham and St Peters (City), Consolidated 21 March 2019
Type of Development	Merit
Public Notification	Category 2
Representations	7 representors
Referral Agencies	Government Architect
Report Author	Will Gormly, Senior Planner
RECOMMENDATION	Development Plan Consent, subject to conditions

EXECUTIVE SUMMARY

This application was lodged on 17 October 2019. The application proposes the construction of an eight storey mixed use building, which will comprise a supermarket, specialty retail stores, medical centre, office, and residential flat buildings across the site currently occupied by Coles Norwood. The application further proposes to upgrade the canopy and pavement (and landscaping) of the Norwood Mall which provides the pedestrian link between the subject site and The Parade.

In order to facilitate the development, the demolition of the existing supermarket, specialty stores, a number of regulated and significant trees, and unprotected vegetation is required.

The application is subject to a mandatory referral to the Government Architect. The application was forwarded to the City of Norwood, Payneham and St Peters for their technical comments.

The Government Architect is generally supportive of the proposal, however considers that further exploration of the site – and particularly a master planned approach given its significant development opportunity – would be beneficial. The Government Architect considers the application falls short of optimising opportunities to deliver significantly improved user experience beyond what is offered by the existing development.

The application was subject to the case managed pre-lodgement service. Through the process, there were minor changes made between the first meeting and that of which has been lodged for assessment. The programming of the site and fundamental approach has remained unchanged.

Overall, the proposal, whilst challenging a number of Development Plan policies, is consistent with the Desired Character of the Zone, and achieves many other policies. This report summarises with a recommendation to support the proposal, and grant Development Plan Consent, subject to conditions.

ASSESSMENT REPORT

1. DESCRIPTION OF PROPOSAL

The proposal is for the demolition of the existing Coles supermarket and associated loading dock structures, demolition of the entire mall covering extending to The Parade, the removal of vegetation including three significant trees, and the clearing of the site – including most of the bituminised car parking area – ready for redevelopment.

The redevelopment will include the construction of a new supermarket building (for Coles), four specialty retail shops, a medical centre, an office, two levels of car park deck above the ground floor supermarket building, twenty-four two-storey townhouses above this car parking deck, with two five-storey apartment tower buildings on this same 'podium' level. Separate to the supermarket/townhouse/apartment building is an apartment building that disposes nine dwellings across three storeys, which fronts George Street.

A summary of the proposal is as follows:

Land Use Description	Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development, incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.		
Building Height	31.8 metres to apartment roof (34.5 metres to apartment stair roof)		
Description of levels	Main building	Ground	Main supermarket area Coles (plus Liquorland) 3x specialty stores 1x specialty store (standalone, two storey) At-grade car parking area Upgraded mall link to Norwood Parade
		Level 1	Office tenancy Medical centre tenancy Car parking deck End-of-trip facilities and bike store Plant room
		Level 2	Car parking deck Bicycle store Plant room (three, separate)
		Level 3	Landscaped plaza area Base of (first level) apartment buildings and townhouses Bin storage area
		Level 4	Upper level of townhouses Second floor of apartment towers
		Level 5	Third floor of apartment towers
		Level 6	Fourth floor of apartment towers
		Level 7	Fifth floor of apartment towers (penthouses)
	George Street Apartments	Ground	Staff car parking area (undercroft)
		Level 1	Resident parking area Bin storage area First level of apartments
		Level 2	Second level of apartments

		Level 3	Third level of apartments
Site Access	Vehicle	Utilising all existing crossovers – two two-direction crossovers to George Street and two two-direction crossovers to Edward Street.	
	Pedestrian	New, formalised pedestrian path from George Street; existing pedestrian path from Coke Street; new, formalised path from Edward Street; existing pedestrian path from The Parade ('mall' entry).	
	Bicycle	Through any of the above pedestrian/vehicle entry points described above.	
Car Parking	93 residential car parking spaces, with 347 non-residential car parking spaces (supermarket, office, specialty shops, and medical centre combined).		
Bicycle Parking	120 bicycle parking spaces.		
Encroachments	Canopy projection over Norwood Parade road reserve (footpath) – aligned with edge of existing canopies either side.		
Staging	Stage 1	Demolition of existing buildings, site works and services to be removed, excavation and associated retaining walls, piling, capping beams and footings for columns, central services core and load-bearing precast walls.	
	Stage 2	Construction of the remainder of the development.	

2. SITE AND LOCALITY

2.1 Site Description

The site consists of six allotments, which are legally described as follows:

Lot No	Section	Street	Suburb	Hundred	Title Reference
18	F3667	George Street	Norwood	Adelaide	CT 5570/115
34	F4952	George Street	Norwood	Adelaide	CT 5570/110
35	F10893	George Street	Norwood	Adelaide	CT 5570/114
101	F11348	George Street	Norwood	Adelaide	CT 5570/111
102	F11348	George Street	Norwood	Adelaide	CT 6132/762
107	D49417	George Street	Norwood	Adelaide	CT 6132/733

The subject site has its main frontages to George and Edward Streets, with pedestrian access afforded to the site through the 'Norwood Mall' which addresses The Parade, and another pedestrian access from Coke Street.

The subject site currently contains the existing Coles supermarket, a number of specialty retail shops, a café, car parking, and a covered pedestrian mall. Many of the specialty shops and the café are vacant.

The site has a gradual fall from the south to the north, and a greater fall from the east to the west. The topography of the site is being used to the advantage of the programming of the proposed uses and their respective finished levels, which will effectively require minimal ground works.

It is understood that a watercourse runs beneath the site, which is located generally at the Edward Street grade carpark portion of the site.

The site is home to a number of significant and regulated trees. Of the five significant trees, three are proposed to be removed. Of the six regulated trees, four are proposed to be removed. The site is well vegetated at its south, east, and west boundaries – however this vegetation is not controlled in any way.

2.2 Locality

The locality is characterised generally by retail and residential land uses, with some commercial uses and restaurant uses interspersed throughout – although these are generally constrained to allotments with a frontage to The Parade.

The broader locality, being Norwood's primary retail district, generally constitutes smaller boutique and specialty shops, and further features a typical-sized supermarket; being Foodland; located on the northern side of The Parade.

Immediately adjoining the subject site to the south is the Residential Character (Norwood) Zone. There are three residential buildings that adjoin this south boundary – one detached dwelling, one semi-detached dwelling, and one residential flat building. The southern boundary of the subject site joins the 'side' boundary of these residential buildings. In addition to these residential properties, Coke Park is situated along this southern boundary.

The northern boundary of the subject site is adjoined by the 'rear' of the generally narrow shop frontages which each address The Parade, with many also being double fronted to the internal car park area. These properties are varied, with cafés, pharmacy, health store, book store, shoe store, and hardware store.

To the west, Edward Street, the subject site is framed by office and commercial uses – each in former residential buildings. Towards The Parade end of Edward Street exist a number of restaurants.

To the east, George Street, the subject site is framed by residential buildings – with a mix of single storey detached dwellings and two storey residential flat buildings.



Figure 1 – Location Map

3. COUNCIL COMMENTS or TECHNICAL ADVICE

3.1 City of Norwood, Payneham and St Peters

Pursuant to Regulation 38 (4a) of Development Regulations 2008, The City of Norwood Payneham & St Peters were invited to provide referral comments, however these are done so in a non-mandatory capacity.

Council chose to respond, and grouped their comments under headings of traffic management, stormwater, encumbrance, local heritage, built form character and setbacks, and trees and landscaping.

The Council comments are included as an attachment to this report, however are repeated below – in summary – for information:

Traffic Management

Consideration of incorporating a 'no right turn' sign be installed at the exit of the supermarket loading dock, adjacent to George Street, to prevent semi-trailers from turning right out of the loading dock to George Street; in line with advice from Council's independent traffic engineer on the previous 2014 proposal, given the turning constraints at the nearby roundabout intersections.

Stormwater

A Council owned stormwater drain runs through the mall from Coke Park to The Parade, and another in the western carpark that runs to Edward Street. The 2014 proposal saw discussions of creating an easement and repositioning this stormwater drain. Discussions have not been held with respect with this new proposal, however Council do not consider there will be any insurmountable problems with the proposed stormwater management.

Council does, however, request that the SCAP withholds from making a determination until there is an 'in principal' agreement with respect to the stormwater management, given Council owns the infrastructure through the site.

Council's stormwater engineering department advise that a portion of the site would result in overland flooding in a large rainfall event, given the surface levels at this portion of the site, and subsequently affect properties fronting The Parade. Accordingly, the Council recommend a condition be imposed that ensures that this issue be investigated and managed to prevent flooding of those properties.

Encumbrance

An encumbrance is registered on the subject land, which exists to provide a prescribed rate of car parking for future development on the site. At a Council meeting held on 7 October 2019, the applicant proposed that this rate be updated to a more modern car parking rate (justifying that the rate on the encumbrance is historical and outdated for current standards).

The Council accepted and resolved a new rate, to which the proposal accords with.

From a technical perspective, the Council are of the position that there are a number of deficiencies. These relate to blind aisles, bay widths, tandem parking bays, and bicycle parking. The Council ask that the applicant consider responding to the ten points listed by Council's independent consultant.

Local Heritage

There are no buildings of any heritage significance located on the subject land, however there are several which are adjacent or nearby to the subject land. The

Council do not object to the proposal in terms of heritage impacts, with the exception of the new mall entry structure which they seek should provide sufficient clearance from the mouldings on the two Local Heritage Places it sits between.

Built Form, Character and Setbacks

Council have concern with the proposal in terms of height, which exceeds the Development Plan guidance of 25.5 metres by 6.3 metres (and two storeys). The Council consider the proposal will present as a relatively imposing built form, when viewed from various vantage points in the locality.

The Council consider the architectural expression as appropriate, however defer to the expertise of the Government Architect in this respect.

Trees and Landscaping

Council's letter erroneously states 8 regulated trees are to be removed. In fact, there are 4 regulated trees to be removed (and 3 significant trees).

Notwithstanding, they consider that only one of the total of seven trees proposed to be removed should be retained. This is Tree No. 3, which is located in a garden bed in the north-western corner of the carpark towards Edward Street. This is a River She Oak, and is regulated. Council consider the reconfigured carpark is able to support the retention of the tree, and as such the tree should be retained. The arborist report prepared by the applicant's consultant states that this tree is conflicted, where the structural root zone encroaches in the development area. The tree observes with a poorly formed in the upper crown, which reduces its structural qualities.

Council further consider that the proposed steel framed canopies with climbers are not detailed sufficiently in the plans. They consider the southern boundary strip of mature trees as an important screening element between the adjacent residential flat building and prominent landscape element for the locality. They request that the SCAP require a minimum 1.0 metre wide garden bed at this boundary, with details of replacement trees – or that the existing trees be retained in this location.

The Council are also concerned with the lack of landscaping to the George Street frontage of the property, noting that it is the intention of the applicant to soften this frontage with trees planted in the currently vacant verge (on Council land). The Council are amenable to this, however state that this is at the cost of the developer, but add that there should be increased landscaping within the private property.

The applicant's response to Council's referral comments is included as an attachment to this report.

4. STATUTORY REFERRAL BODY COMMENTS

The Government Architect 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.

A copy of the referral response from the Government Architect is included as an attachment to this report, however is summarised generally below.

4.1 Government Architect

In principle, the Government Architect strongly supports the redevelopment of this key site in the retail and high street precinct of Norwood. There is strong support for the project's ambition to deliver a successful retail destination supported by a high quality

public realm outcome. The site is considered to present a rare opportunity due to its location and size, and as such any redevelopment of this site has a responsibility to deliver a high benchmark for design.

Although the proposal has changed as a response to the original scheme presented at its first Design Review (with two sessions held), the Government Architect is of the view that the project brief falls short of optimising opportunities to deliver significantly improved user experience beyond what is offered by the existing development.

The Government Architect suggests the consideration of:

- Extending the 'mall' canopy over The Parade footpath to provide continuous weather pedestrian for The Parade pedestrians.
- Review of the area north of the main building, with the view to develop this area as a high quality public plaza, including the relocation of the service core to be integrated with the main podium form.
- Development of the double fronted specialty shop layouts, informed by back-of-house and operational requirements.
- Review of the interface treatment along George Street to better integrate the one-metre basement protrusion.
- Screening of the northern driveway on George Street to optimise presentation to the public realm and provide a consistent streetscape composition.
- Review of the ground floor arrangement of the George Street apartment building, including the number of at-grade car parking spaces, to improve residential amenity.
- Resolution of further design details of the communal open space at the top of the main building podium, including planting selection, material palette, design elements for the play area and the fencing strategy.
- Development of the maintenance strategy to ensure the long term success of the landscape elements.
- A high quality of external materials for building and outdoor spaces, supported by the provision of a materials and finishes sample board.

The Government Architect does not request any conditions be included as part of the recommendation.

5. PUBLIC NOTIFICATION

The application was notified as a Category 2 development pursuant to Schedule 9 Part 2 Clause 19 of Development Regulations 2008, where the zone of the subject land shares a boundary with a different zone. Public notification was undertaken (by directly writing to adjoining owners and occupiers of the land) and 7 representations were received.

ID	Address	Concerns
<i>R1</i>	164 The Parade, Norwood	<ul style="list-style-type: none"> • Impact on trade, and if rental relief can be offered.
<i>R2</i>	182-184 The Parade, Norwood	<ul style="list-style-type: none"> • Denigration of visual amenity. • Accessibility. • Commercial viability of rear of shops at 180-188 The Parade. • Large vehicles accessing the site. • Isolation of the eastern car park for staff.
<i>R3</i>	18 Coke Street, Norwood <i>(Withdrawn)</i>	<ul style="list-style-type: none"> • Request that transformers be installed at existing ground level (not raised as proposed).

ID	Address	Concerns
		<ul style="list-style-type: none"> Request that a solid rendered block wall fence be built to lessen noise and visual impacts. <p><i>(This representation withdrawn following discussions between the applicant and the representor)</i></p>
R4	80 Edward Street, Norwood	<ul style="list-style-type: none"> Height of development is 6.3 metres over envisaged height, which would create a precedent for height creep. Temporary car park strategy not included for construction period. Council should undertake an independent traffic study. Query of calculation of required car parking rates provided. No protection plan included for Cork tree in western car park. Plane trees in existing car parks should be retained. Site management plan should be agreed with Council to protect local residents from trucks, noise, dust, disturbance, cleaning of streets, and appropriate hours of operation. Landscaping at boundary with 80 Edward Street. No measures to reduce vehicle hooliganism/misbehaviour of youths. Traffic calming measures.
R5	84 Edward Street, Norwood (not valid)	<ul style="list-style-type: none"> Replication of representation submitted by R4.
R6	86 Edward Street, Norwood (not valid)	<ul style="list-style-type: none"> Replication of representation submitted by R4, plus two additional concerns: Overshadowing impacts on neighbouring residences, particularly in winter months. Residential development appear to have very limited balconies, and windows that can be fully opened in the apartment towers. Air conditioning units may require noise attenuation measures.
R7	160-166 The Parade, Norwood	<ul style="list-style-type: none"> Requirement of easement marked 'D' to remain as-is. Traffic plans do not show 'loading zone' on plans.



Figure 2 – Representation Map

6 of the 7 representations received expressed their wish to be heard by the State Commission Assessment Panel when the item is considered.

Following discussions between the applicant and one representor (R3 shown in Figure 2 – the above map), this representor has subsequently withdrawn their representation.

A copy of each representation, the withdrawal of one representation, and the applicant's response is contained as an attachment to this report.

6. POLICY OVERVIEW

The subject site is located wholly within the District Centre (Norwood) Zone and the Retail Core Policy Area 2.1 as described within the Norwood Payneham and St Peters (City) Development Plan, consolidated 21 March 2019.

The subject site adjoins the Residential Character (Norwood) Zone directly to its south.

Relevant planning policies used in the assessment of this application are contained an appendix to this report, and are summarised below.

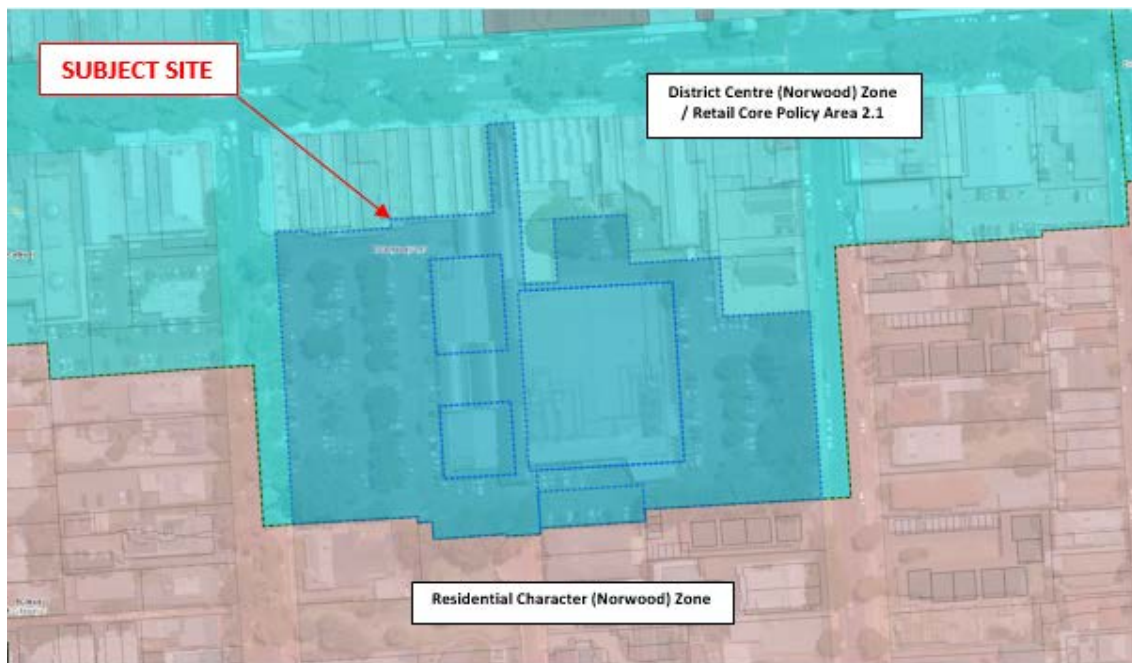
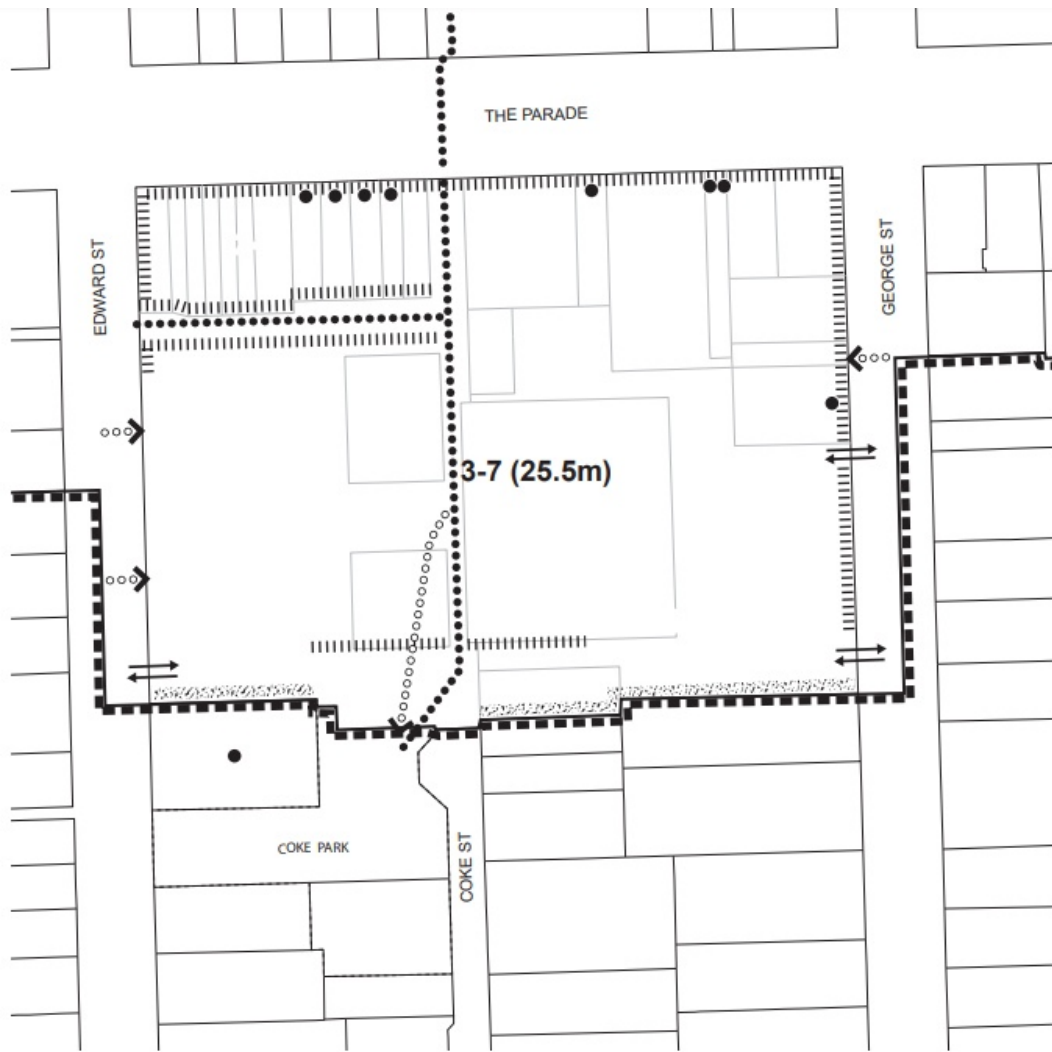


Figure 3 – Zone Map

6.1 Concept Plan



- Landscape buffer
- Pedestrian Link
- Indicative future pedestrian link
- 3-7 (25.5m) Building height range
- Interface with Residential Zone
- Local Heritage Place
- Active edge
- Indicative vehicle access
- District Centre Zone Boundary

Not to scale

NORWOOD PAYNEHAM AND ST PETERS (CITY) DISTRICT CENTRE NORWOOD KEY DEVELOPMENT AREA C CONCEPT PLAN Fig DCe/4

6.2 Retail Core Policy Area 2.1

The Retail Core Policy Area is the retail 'heart' of the District Centre (Norwood) Zone and will continue to provide a range of primarily retail uses including specialty shops, supermarkets, discount department stores, restaurants and cafes, all within an

integrated pedestrian environment. The provision of dwellings above ground-level retailing is desirable, as are business uses, such as offices and consulting rooms.

Area C, shown on Concept Plan Fig DCe/4, is located behind existing shopfronts along the southern side of The Parade, between Edward Street and George Street. It provides a significant opportunity for the development of a discount department store or other large floor area retail facility, specialty shops and medium to high density residential development located above ground level, provided that an appropriate built form transition is achieved, scaling down towards the Residential Zone to the south and development along Edward and George Streets.

The redevelopment of the existing supermarket site will contribute to an increase in the provision of public car parking, in order to match the demand associated with the anticipated increase in retail activity within the Area.

Development adjacent to the Edward Street frontage will be of a lower scale and intensity than within the core of Area C and will provide opportunities for retail and/or residential land uses. Buildings along this frontage will be limited in height to three (3) storeys, with the highest level being a small recessive element, which is set back further from the allotment frontage than the lower levels. A front set-back will be established in order to provide opportunities for landscaping or for the establishment of small outdoor dining areas. There will be no additional vehicle access points created along this section of Edward Street, in order to minimise disruption to pedestrian and vehicle movements.

Development adjacent to the George Street frontage will be limited in height to three (3) storeys, which may be built to the front allotment boundary. Land uses will be commercial in nature, as any commercial loading/unloading facilities associated with the development of the site are likely to be accessed via George Street.

The scale and massing of building elements will be designed having regard to the close proximity of residential properties in the adjacent Residential Zone to the south and James Coke Park, which is a highly utilised park serving both visitors to the District Centre and the local community. In order to minimise the visual and overshadowing impacts of tall buildings, the mass of the upper levels of a building or buildings (exceeding three (3) storeys in height) should be 'broken up' into well-articulated tower elements, which will be set back an appropriate distance from the southern boundary of the Area.

Pedestrian access between The Parade and James Coke Park will continue to be maintained and will not be obstructed through the placement of buildings and/or structures (either fixed or moveable). The northern section of this pedestrian access will remain uncovered, in order to maintain an open feel.

Development should improve east/west pedestrian connectivity through Area C and the activation of the rear of buildings fronting The Parade will be encouraged.

Any internal mall areas should, where practicable, include land uses which encourage a level of evening activity, such as cafes and outdoor dining, which pedestrians and patrons can enjoy in a safe environment.

Development which requires heavy vehicle access and loading bays will be designed to ensure that vehicle movements do not compromise pedestrian safety and that vehicles can enter and exit the site in a forward direction, without the need for heavy vehicles to queue on surrounding public streets.

6.3 District Centre (Norwood) Zone

The District Centre (Norwood) Zone is a cosmopolitan area of diverse townscape interest and character, focussed around The Parade, with attractive pedestrian spaces generating a high level of activity, visual appeal and community interaction. It will continue to serve a large residential district, which extends beyond the council boundaries, and will contain a mix of retail, business, administrative, civic, recreational, entertainment, community, medical, health, fitness and residential land uses.

Retail development will be the focus of land use activities at ground level, with The Parade being reinforced as an Activity Centre of eastern metropolitan significance for food, fashion and specialty shops. Above ground level, other business uses such as offices and consulting rooms, as well as residential uses, will be developed. The development of large floor area retailing will be contained primarily within the Retail Core Policy Area and be located behind smaller specialty shops along The Parade, in order to maintain the 'high street' character and vibrancy of The Parade.

Development which incorporates a significant residential component (more than 20 dwellings) will provide a range of dwelling sizes and a proportion of affordable housing. Short term residential accommodation, in the form of serviced apartments and tourist accommodation, is also desired in locations where it does not compromise the amenity of longer term residents.

Outdoor dining, which is complementary to existing businesses, is encouraged along The Parade frontages and, on corner sites, may extend into side streets where it can be accommodated with minimal disruption to pedestrian and vehicular movements and where it does not unreasonably impact on the amenity enjoyed by occupants of nearby residences. Opportunities to create upper level spaces above the ground floor level of buildings, which overlook The Parade and provide further opportunities for outdoor dining will be encouraged, where it will contribute to the vibrancy of The Parade.

New buildings will be sited and designed to reinforce the high street character of The Parade, particularly east of Osmond Terrace. The Norwood Town Hall (and Clock Tower), the Norwood Hotel at the corner of Osmond Terrace and The Parade and the spires of the former church and church on the northern corners of the intersection of The Parade and Portrush Road, will remain as prominent visual elements along The Parade.

The scale and massing of taller building elements within the Zone will be designed having regard to the visual, overlooking and overshadowing impacts on residential properties in adjacent Residential Zones, whilst recognising that there is a need to carefully balance the level of amenity expected by nearby residents, with the nature of development desired within the Zone.

The character of The Parade will be reinforced by a well-defined low to medium scale built form edge abutting the footpath and continuing the established width, rhythm and pattern of facades that generally support a variety of tenancies with narrow frontages. To maintain a human scale at street level, the upper levels of buildings will be recessed behind the dominant two (2) and three (3) storey podium/street wall heights.

The front and side elevations of buildings (or portions of buildings) fronting The Parade and extending into adjacent side streets, will incorporate materials and finishes of a high quality and complement (without replicating) the materials and finishes used in the historic building fabric and will avoid visible expanses of tilt-up concrete walling. Shopfronts will incorporate visible entry foyers and display windows and will not be secured through the use of roller shutters.

The level of public car parking spaces will be increased over time, particularly in association with any expansion of development within the Retail Core, to ensure that good accessibility to The Parade as a destination location is maintained.

Pedestrian movement in the District Centre (Norwood) Zone will continue to be concentrated along The Parade frontages and along the north/south pedestrian ways linking the Webbe Street car park to the north and James Coke Park to the south. Development will ensure that pedestrian movement is not unduly obstructed by the placement of either fixed or moveable items on footpaths or along pedestrian access ways. The existing open nature of the pedestrian link on the southern side of The Parade will be maintained.

Development will enhance the pedestrian environment of The Parade and adjacent secondary streets, with verandahs, pergolas and awnings extending over the footpath, to provide pedestrian protection and achieve a human scale and a visually interesting environment. Where there is a dominant existing verandah height, this will be continued by new development. Where possible, structures over the footpath will be cantilevered to minimise the potential for damage from vehicles and the like.

Cycling is an increasingly popular form of transport and recreation, therefore development on public and private land will consider the needs of cyclists, in terms of providing secure bicycle parking and storage facilities and creating linkages through the District Centre, which can be shared safely by both pedestrians and cyclists. Larger scale commercial developments will also provide appropriate end of journey facilities such as showers and change rooms.

6.4 City Wide

City Wide provisions of the Development Plan provide guidance on the way in which future development will occur.

The headings of which are relative to this application are: Orderly and Sustainable Development; Design and Appearance of Land and Buildings; Energy Efficiency; Landscaping, Fences and Walls; Interface Between Land Uses; Movement, Transport and Car Parking; Stormwater Management; Medium and High Rise Development (3 or More Storeys); Centres, Shops & Business; Advertisements; Regulated Trees; Significant Trees.

A copy of the provisions used in the assessment of this application are included as an attachment to this report.

6.5 Overlays

6.5.1 Affordable Housing

The proposal is subject to the affordable housing overlay. No affordable housing is proposed as part of the application.

6.5.2 Noise and Air Emissions

This site is located within the designated area for the Noise and Air Emissions Overlay, and as such requires assessment against *Minister's Specification SA 78B for Construction Requirements for the Control of External Sound*.

7. PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Norwood Payneham and St Peters Development Plan. Those relevant provisions are included as an attachment to this report.

7.1 Quantitative Provisions

	Development Plan Guideline	Proposed	Guideline Achieved	Comment
Building Height	3 to 7 storeys (and up to 25.5 metres)	8 storeys (31.8 metres to apartment roof; 34.5 metres to apartment stair roof)	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> PARTIAL <input type="checkbox"/>	Departure of 1 storey (and 6.3 metres to apartment roof).
Land Use	<ul style="list-style-type: none"> Consulting room Dwellings above ground level Office Shop or group of shops Supermarket 	<ul style="list-style-type: none"> Consulting room Dwellings above ground level Office Shop or group of shops Supermarket 	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	All proposed land uses accord with the envisaged land uses for the District Centre (Norwood) Zone.
Car Parking	<ul style="list-style-type: none"> 262 to 422 spaces. An encumbrance overrides this Development Plan requirement. 	<ul style="list-style-type: none"> 440 spaces: 93 residential spaces plus 347 non-residential spaces 	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	Car parking rates set by the encumbrance registered to Certificate of Titles.
Bicycle Parking	111 spaces	120 spaces	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	

7.2 Land Uses

The District Centre (Norwood) Zone is explicit on envisaged land uses it seeks, which will accommodate a range of retail facilities, offices, and consulting rooms which serve the community and visitors within the surrounding district.

The Zone sets out land uses in Principle of Development Control (PDC) 1, where consulting room, dwellings above ground level, office, shop or group of shops, supermarket are all listed as envisaged uses.

The proposed uses, being each of those listed above, accord with those which are sought in the Zone. The mixing of these land uses on the subject land is supported, with the success of the mixing of these dependent on access and signage (wayfinding).

7.3 Design and Appearance

The Development Plan provides policy guidance as to the design and appearance of new development:

New buildings will be sited and designed to reinforce the high street character of The Parade, particularly east of Osmond Terrace.

The scale and massing of taller building elements within the Zone will be designed having regard to the visual, overlooking and overshadowing impacts on residential properties in adjacent Residential Zones, whilst recognising that there is a need to carefully balance the level of amenity expected by nearby residents, with the nature of development desired within the Zone.

The front and side elevations of buildings (or portions of buildings) fronting the Parade and extending into adjacent side streets will incorporate materials and finishes of a high quality and complement (without replicating) the materials and finishes used in the historic building fabric and will avoid visible expanses of tilt-up concrete walling. Shopfronts will incorporate visible entry foyers and display windows and will not be secured through the use of roller shutters.

Where a development comprises more than two storeys above natural ground level, the levels above the ground and first floors levels should comprise residential accommodation. Where residential accommodation above ground floor level non-residential uses are proposed, the average floor area of the residential component should not exceed 100 square metres per dwelling.

To minimise building massing at the interface with residential development outside of the zone, buildings should be constructed within a building envelope provided by a 30 degree plane, measured from a height of 3 metres above natural ground level at the zone boundary, as illustrated in Figure 4 below:

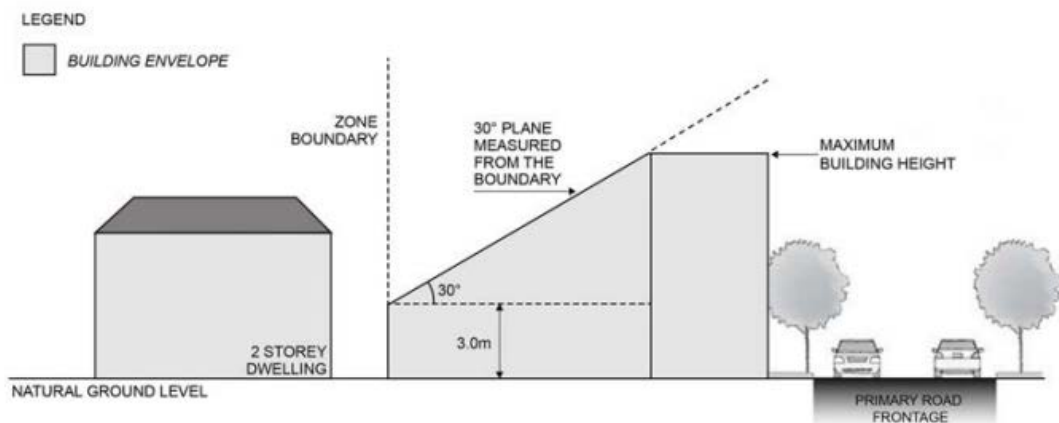


Figure 4 – Residential interface diagram

Whilst the proposal does not achieve the envelope as sought above, the proposed development locates its tallest elements towards the north – and indeed furthest from the south – which results in the least impact to the residential properties in the adjacent Residential Character (Norwood) Zone.

The materials and finishes are considered to be of an acceptable nature, which comprise generally a media-blasted sandstone coloured concrete to the lower part of the building, a light brown terracotta cladding to the townhouses and apartment buildings above the podium, with bronze aluminium fins and charcoal expanded mesh features. The colour palette is warm, with bronzes, light browns, sandstone, and mid-browns used, with charcoal and light greys complementing these.

It is considered the finishes are high quality, and complement (without replicating) the materials and finishes used in the historic building fabric, as sought by the Desired Character of the District Centre (Norwood) Zone.

Whilst the proposed development will be a prominent feature of the Norwood skyline, it will not compete with the historic character, nor be an overbearing development – particularly given the great setback from all road frontages and shielding by single storey development that addresses The Parade. The proposed development is considered to appear somewhat recessive because of this. The warm, soft palette is further considered to be a gentle and contextual approach to materiality in this locality.

A materials palette, as requested by the Government Architect, will ensure the suitability of the proposed materials to this end.

7.3.1 Residential Amenity

For the purposes of the assessment of residential amenity, it is broken up into the three residential components on the site; podium townhouses, podium apartments, George Street apartments.

7.3.1.1 Podium Townhouses

On the third level podium, four sets of two-storey townhouses are proposed. These sit between and alongside the two podium apartment towers, and each have outlook – to the north, south, east and west. Given the programming of the site, with the podium sitting somewhat isolated and surrounded by either car parking or other development, the quality of the outlook from some of the dwellings may be compromised.

Four of the six northern group of podium townhouses are a three-bedroom typology (with the other two being two-bedroom), four of the eight southern group are three-bedroom (with the other four being two-bedroom), and the east and west groups both two-bedroom.

With the three-bedroom typology, one bedroom and the kitchen and main living area are at the ground floor. There are enclosed/fenced courtyard areas off this bedroom and the living space. An internal staircase links the ground and first levels, where two bedrooms exist at the extreme ends of this level.

All three-bedroom typologies have operable windows to each bedroom, ample storage space within the bedrooms and common spaces, and four of the northern group of podium townhouses also featuring a second living/study space at the upper level.

The two-bedroom typology townhouses situate both bedrooms at opposite ends of the upper level, with kitchen and living areas at the ground.

The two-bedroom typologies, as with the three-bedroom, have operable windows to each bedroom, ample storage at the upper level and common space, and 2+ bathrooms in each.

The access to these podium townhouses is from a lift which connects the ground to this third level podium – and to the two levels of deck car park below it. A resident, or their visitor, must travel through either the Edward Street car park, through the car park via Coke Street, or The Parade mall to this residential lift. There are no 'private' entry points. If accessing from ground level, the residential lift lobby is alongside the travelator adjacent the Liquorland and Coles store.

It is considered that the access to these podium townhouses is a rather clunky and uninspiring user experience – with the only options being entering either from a multi-level car park; or through a publicly accessible shopping mall (or needing to navigate through the Edward Street car park) to access your dwelling if not arriving by private vehicle. There are clear safety concerns with this approach, as is described further in this report.

7.3.1.2 Podium Apartments

On the same podium level as the townhouses are the two, five-storey podium apartment buildings. These are both located towards the northern edge of the podium, and an eastern and western tower are proposed.

In both of these towers, the first four floors of each tower are identical – with every apartment being a two-bedroom dwelling (with the exception of a one-bedroom dwelling in each tower at the ground level). The fifth floor of both towers is the penthouse level, with two penthouses per tower. These penthouses are all three-bedroom dwellings, and feature a generous balcony to the living space, and a smaller balcony accessible from one of the bedrooms in each penthouse. In the two-bedroom apartments, these feature only one balcony, which is accessible only from the living space. There are screens on these balconies which would obscure the views from these balconies into neighbouring apartments/podium townhouses.

The access to these podium apartment towers is from the same lift as described in the 'podium townhouses' section above. A resident, or their visitor, once at the podium level, will exit the lift and walk across the podium to the respective lift in either the west or east tower (unless they occupy an apartment on the 'ground' level of this podium).

The same safety concerns exist for these dwellings, in terms of the user paths required to access their dwelling.

7.3.1.3 George Street Apartments

Above the undercroft car park at the George Street frontage are 9 apartment dwellings configured over a three-level building.

At the ground level, each of the three dwellings are two-bedroom, with the two northern dwellings accommodating only a single bed in one of each of their bedrooms. Given the layout, each bedroom and living area of all dwellings have windows (and an outlook) to George Street.

On the first level, each of the three dwellings are three-bedroom. An open kitchen and living area affords additional space through a balcony directly accessible off this space.

On the top level, each of the three dwellings are again three-bedroom. The layout of the apartments on this level closely aligns with the layout of the apartments to the level below it – creating construction efficiencies by doing so. As with the first level apartments, a balcony space exists which is directly accessible from the living space. And, as above, this balcony space spans the width of the dwelling.

Access to the upper levels are by one of two lift cores across this apartment building. The northern lift core accesses only the northern apartments, where the southern lift core accesses the dwellings to the south. These are by way of a 'walk up' from George Street, or can similarly be accessed from the private (and secure) car park located at the rear of the ground floor dwellings.

7.3.1.4 Private Open Space

The Development Plan provides a guidance as to the quantitative requirements for private open space, both for dwellings (which would

incorporate the 'podium townhouses'), and for apartments (which would incorporate the 'podium apartments', and 'George Street apartments').

Principle of Development Control 226 states that development for one-bedroom apartments should provide 10 square metres of private open space, two-bedroom apartments should provide 12 square metres, and three-bedroom should provide 15 square metres. A lesser amount may be considered where there is a communal open space accessible to all occupants of the development, such is the case in this proposal for the podium dwellings.

The George Street apartment has private open space for their two-bedroom dwellings ranging between 12.9 and 28.7 square metres. These private open space provisions meet the Development Plan guide. The three-bedroom dwellings range from 30.2 and 42.3 square metres. This exceeds the requirement by a minimum of double, and as such, the George Street apartment private open space requirements are satisfied. All of the private open spaces of the George Street apartments are directly accessible from a living area, which further accords with Development Plan policy.

In the podium townhouses, the two-bedroom dwellings range from 23.8 to 48.9 square metres, with the three-bedroom dwellings ranging from 22.7 to 27.2 square metres. Each of the townhouses far exceed the minimum sought, and all feature these spaces at the 'front' and 'rear' of the townhouse, with the larger of the two all accessible directly from a living area. This accords with Development Plan policy.

In the podium apartment towers have their one-bedroom apartments at 10.7 square metres, two-bedroom apartments between 8.9 and 11.3 square metres, and three-bedroom (penthouse) apartments at 49.9 square metres. The majority meet the minimum required, with the exception of the dwellings that provide 8.9 square metres (a shortfall of 3.1 square metres). It is considered, where there is dispensation permitted through the provision of common open space – at the landscaped podium area – that this is an acceptable deviance. All open spaces are accessible directly from the living space, which accords with Development Plan policy.

In summary, the private open space requirements are all achieved, with the exception of 8 dwellings – being the 'central' two-bedroom apartments in the two towers. The Development Plan does, as mentioned, give dispensation to this, and it is considered that the generous communal space at the podium level offsets this minor shortfall.

7.4 Building Height

The Development Plan provides policy guidance as to the height of new development:

The Desired Character of the Policy Area calls for buildings between 3 and 7 storeys in height, and up to a height of 25.5 metres; as depicted in 'Area C' of Figure DCe/4 – a Concept Plan developed for this particular area.

Development adjacent to the Edward Street frontage will be of a lower scale and intensity than within the core of Area C and will provide opportunities for retail and/or residential land uses. Buildings along this frontage will be limited in height to 3 storeys, with the highest level being a small recessive element, which is set back further from the allotment frontage than the lower levels. A front set-back will be established in order to provide opportunities for landscaping or for the establishment of small outdoor dining areas.

Development adjacent to the George Street frontage will be limited in height to 3 storeys, which may be built to the front allotment boundary.

The scale and massing of building elements will be designed having regard to the close proximity of residential properties in the adjacent Residential Zone to the south and James Coke Park. In order to minimise the visual and overshadowing impacts of tall buildings, the mass of the upper levels of a building or buildings (exceeding 3 storeys in height) should be 'broken up' into well-articulated tower elements, which will be set back an appropriate distance from the southern boundary of the Area.

The tallest part of proposed development, being the apartment stair roof, stands at 34.5 metres above ground floor level, and 8 storeys. This exceeds guideline of by 9 metres and 1 storey. Whilst the apartment stair roof is the tallest element, it is somewhat constrained in size. The bulk of the tallest part of the development are the apartment roofs, which are 31.8 metres above ground floor level – and a departure of 6.3 metres from the height sought by the Development Plan.

The Development Plan does not offer any dispensation for 'over height' development, however does seek that the tallest elements be positioned towards the north, and that the upper levels be 'broken up' into tower elements. The proposed development does both – whereby the five-storey apartment towers atop the podium are positioned to the north (which lessens the visual and overshadowing – and overlooking – impacts to residential properties to the south), and are in two distinctly separated tower forms.

Figure 4, above, sets out a building envelope which all new development should be built within. The proposed development penetrates this envelope – marginally with the townhouses towards the western part of the podium, and more so at the eastern part of the podium; where the boundary point is closer to the built form.

Council hold some concern to the proposed height of the development, as they consider it will result in a relatively imposing built form as viewed from various vantage points along surrounding streets and residential properties. They go on to say that the relatively small footprint of the towers and their central location on the site reduces those impacts, however the scale remains inconsistent with what the Council envisaged for the area – as represented in the relevant Development Plan policy.

The Government Architect gives her in principle support for the overall height (and massing) approach. She considers the large-scale building elements being located to the north of the site successfully mitigates the impact of over height elements to the adjoining residential properties to the south.

7.4.1 Overshadowing

The applicant has provided shadow diagrams which demonstrate the overshadowing impacts to the locality.

From these diagrams, it is clear that there will be little overshadowing impact at the proposed height in the winter months, compared to that of which would be compliant with the height sought by the Development Plan.

It is considered that the overshadowing impacts, as guided by PDC 83 of the Development Plan, is satisfied, where non-residential development adjacent to a residential zone or within a residential zone should be located, designed and sited to minimise overshadowing of nearby residential properties.

7.4.2 Overlooking

PDC 83 further provides guidance to overlooking, where non-residential development on land abutting a residential zone or within a residential zone should be located, designed and sited to minimise overlooking of nearby residential properties.

The greatest impact of overlooking will be to the residential properties to the south, as the other elevations are either commercial uses, or residential uses which do not site their private open or habitable spaces towards the proposed development, which in turn will not be impacted by overlooking.

Given the considerable separation between the proposed development and the existing residential development to the south, it is considered that the overlooking impacts will be negligible, and are not direct. The installation of screened enclosures to the courtyards will further mitigate any possible overlooking.

7.5 Heritage

A number of Local Heritage Places exist which directly adjoin the subject site. These being: 140-144, 160, 162, 164, 166, 168-178, 186 and 188 The Parade, 55 George Street, 65 Edward Street, and 80 Edward Street, Norwood.

Whilst the proposed development does not 'materially' affect the heritage values of these places – as there is physical disconnection between the proposed development and the existing heritage places – the greatest impact will be the proposed mall canopy structure which sits between the shops at 166 The Parade, and 168 The Parade.

The proposed mall canopy is of polycarbonate and steel construction, and is proposed so sit taller than the Local Heritage Places it sits between. Council raised concern as to the proximity of the steel structural members to the decorative cornice moulding which runs along the outside walls of the Local Heritage Places, and the applicant has since provided, in their amended drawings, detailed drawings which demonstrate a minimum of 50mm clearance to the closest heritage fabric. This is in accordance with the request put forward by the Council to the applicant.

Whilst the Desired Character for the Zone calls for new verandahs to match dominant existing verandah height, where this particular part of the Zone does, it is considered that mimicry of heights (putting construction style and materiality aside) could be detrimental to the desire to juxtapose from the existing heights either side of it.

Accordingly, it is considered that the proposal has minimal impacts to the Local Heritage Places which are in the immediate locality of the subject site.

7.6 Landscaping

PDC 288 seeks that development to any zone that has a primary purpose of accommodating low rise residential activity (as the adjacent zone does) should incorporate deep soil zones along the common boundary to enable medium to large trees to be retained or established to assist in screening new buildings of 3 or more storeys in height. This application proposes to eliminate all of the mature trees at this boundary, and replace with solid fencing – and a climber supported by an arbour structure. It is considered that this falls well short of achieving this PDC.

PDC 282 seeks deep soil zones be provided to retain existing vegetation or provide areas that can accommodate new deep root vegetation, including tall trees with large canopies. Neither the apartment tower/townhouse building, nor the George Street

apartments propose any form of deep soil zones, and as such the amenity planting will be restricted to small trees, shrubs, and climbers.

Two trees in the Edward Street/western car park and one tree in the northern car park will have their garden bed areas enlarged from their existing size, which will seek to ensure the health, and subsequent life, of these trees. Additional trees are proposed in this car park area, however the landscape 'concept' plans provided lack any detail as to the species of these trees – and as such an assessment as to their suitability cannot be made. A reserved matter is recommended to require the provision of a detailed landscaping plan to ensure a successful outcome of the proposed landscaping scheme.

The landscaping of the George Street apartments is limited only to groundcover plantings at the step-up section (with the car park set beneath this) at the George Street edge. Whilst there are no deep soil zones at these George Street apartments, it is considered that the planting of the currently devoid Council verge areas (to the agreement of Council and cost of developer) will offset this.

7.7 Parking, Access and Traffic Impact

7.7.1 Vehicle Parking

Ordinarily, the Development Plan, and in this particular instance, Table NPSP/9A (Off-street Vehicle Parking Requirements for Designated Areas), would provide guidance as to the required car parking rates for the proposed development.

This table provides a desired minimum number of vehicle parking spaces, and conversely, a maximum number. For the mix of development, the rates guided by the Development Plan result in a theoretical requirement of a minimum of 262 spaces and a maximum of 422.

More specifically to this site, however, is the existence of an encumbrance registered to the title which requires a rate for commercial uses that is different to that sought by the Development Plan. In a recent Council meeting (8 October 2019), this encumbrance was updated to a more modern rate – of providing a minimum of 268 spaces plus 3 per 100 square metres of gross leasable floor area over 2717 square metres.

The encumbrance further requires that all of the commercial car parking spaces on the land be made free to the public for the first two hours of use.

The application provides 347 non-residential (commercial) vehicle car parking spaces, and 93 spaces for the residential component. The commercial rates satisfy the encumbrance requirement. The 93 residential spaces are distributed across the 77 dwellings (townhouses and apartments), which are considered satisfactory in accordance with the Table NPSP/9A guide.

Four shade structures are proposed in the Edward Street grade car park. These structures are a dark grey coloured steel frame, with the covering a translucent cladding, 'Danpalon', which offers shade but still maintain light transmission. The shade structures are architecturally designed, limited in numbers, and are considered an appropriate response to providing shade where trees would otherwise be unsuitable.

7.7.2 Bicycle Parking

Table NPSP/10 of the Development Plan provides guidance for the off street bicycle parking requirements for various land uses in new development.

For the residential component, one resident space for every two dwellings plus one visitor space for every five dwellings are required.

For the shop (which the medical centre has been included in) component, one employee space for every 150 square metres plus one customer space for every 300 square metres are required.

For the office component, one employee space for every 100 square metres of gross leasable floor area plus two visitor spaces plus one for every 500 square metres of gross leasable floor area.

The resultant requirements are 75 spaces for the residential and staff (combined), and 36 spaces for all visitors – a total of 111 spaces.

The application provides 120 bicycle car parking spaces on the site, which satisfies the Development Plan requirement.

These bicycle parking spaces are located throughout the site at ground level, for the use of shoppers and visitors, with secure bicycle storage areas on both car parking levels of the main building, and the podium.

It is considered that the location of these bicycle parking spaces are convenient, safe, and efficient, and meets Development Plan policy (PDC 109 and 110) where they are coupled with end-of-trip facilities on the first level of car parking.

7.7.3 Access Points

Each of the four vehicle crossovers are proposed to be retained, with the function of them being modified slightly, owing to the new programming on the site – with deliveries now occurring from the George Street north crossover.

The George Street north crossover will now facilitate the majority of loading and waste collection, with this double crossover also functioning as access to the car parks in the north-eastern area of the subject site – which also doubles as visitor car parking for the double-fronted shops which address The Parade.

The George Street south crossover provides for access to the George Street apartment car parks, and access to the deck car park of the main building.

Each of the Edward Street crossovers (north and south) remain as currently exists, which are for access to the grade car park at the west of the subject site, and further to the deck car park of the main building.

The traffic report, prepared by Cirqa, notes the proposed arrangement maintains pedestrian sight lines, and will satisfy the relevant Australian Standards.

New pedestrian access points are proposed alongside the George Street south crossover, and at the approximate centre of the Edward Street car park – which links to the plaza area of the development.

The remaining pedestrian access points – to the north of the Edward Street car park, the Coke Street link, and The Parade 'mall' each remain as currently exists on the site.

The access points are considered to be legible, safe, and accord with Development Plan policy (PDC 105, 106, 112, 113, 118).

7.7.4 Traffic Impact

Modelling of the proposed development has been undertaken by Cirqa, and represented in their traffic report. This modelling has been done so on the southern access points on both George and Edward Streets, as these are the most trafficked points – with the northern George Street excluded from this given the nature of vehicle movements being mostly commercial.

Peak periods of the pre and post development have been analysed as part of this traffic report. The report notes a peak increase of 122 Thursday PM peak hour movements on George Street, and a peak increase of 50 movements per hour on Edward Street. The report notes that each of these increases are ‘low’ in numbers, and would be readily accommodated on each street with minimal impacts.

7.8 Environmental Factors

7.8.1 Crime Prevention

Development Plan policy seeks that development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visibly permeable barriers wherever practicable, with buildings designed to overlook public and communal open spaces and streets to allow casual (passive) surveillance.

Development should avoid pedestrian entrapment spots and routes and paths that are predictable or unchangeable and offer no choice to pedestrians.

In one of the representations received, vehicle hooliganism, misbehaviour and civil disobedience was raised as a concern with the proposed development. The applicant has incorporated CPTED (Crime Prevention Through Urban Design) principles which include:

- Clear lines of sight and the avoidance of hiding and entrapment spots
- Movement-activated lighting along the southern boundary and in the car park area north of the supermarket building
- CCTV cameras at strategic locations
- Bollard lighting for wayfinding purposes
- Casual surveillance from all apartments and townhouses facing the surrounding public and private realm

As a result of creating a residential community above a supermarket/car park structure, and a further result of the ground floor programming not changing to any substantial degree from what currently exists on site, it is requisite that those arriving to their dwellings by foot will need to either walk through one of two at-grade car parks, or through a shopping mall. This raises some CPTED concern, whereby the safety of this travel path could be compromised. Whilst the convoluted and atypical pedestrian movement path is far from ideal, the illumination of the car parking area, the inclusion of CCTV cameras, and the possibility of casual surveillance from the dwellings above the podium (and neighbouring the site) are consistent with achieving CPTED principles to reduce crime (and increase safety).

It is considered that the above CPTED measures are appropriate and sufficient to minimise any criminal or unsafe behaviour that might otherwise be present, and in turn satisfying those provisions of the Development Plan which directly relate to Crime Prevention under the Council Wide provisions.

7.8.2 Noise Emissions

The application is accompanied by a report prepared by Resonate. The report considers the external noise intrusion into the various uses of the development from the car park and, the external noise intrusion from mechanical plant, and environmental noise from plant and equipment servicing the development to adjacent existing development.

The closest noise sensitive receiver is those residential dwellings that share the southern boundary of the subject site, and those on the eastern side of George Street opposite the subject site.

The acoustic report recommends attenuation measures are required for the Coles plant, which could comprise:

- Low power or night mode to reduce noise during night operation
- Acoustic louvre roof over the plant deck
- Acoustic treatment to the façade of affected residences (which would ordinarily be required as part of Minister's Specification SA 78B).

The report notes that noise mitigation treatment will be progressed throughout design development to ensure noise from mechanical plant does not adversely impact on noise sensitive receivers within the site. Accordingly, it is considered not necessary to include additional conditions to any consent beyond those that recommend the adoption of noise mitigation recommended in the Resonate report.

7.8.3 Waste Management

The application is accompanied by a waste management plan prepared by Colby Phillips Advisory. The report details the recommended services, including estimated waste and recycling volumes, bin sizes, collection details, waste storage area, and travel paths.

Separate bin storage areas exist for the Coles supermarket; the ground level retail tenancies; the commercial tenancies on level 1; the townhouses/apartments on the podium; and the George Street apartments.

The waste from the podium dwellings is collected from its bin room by maintenance staff, and collected by Council's contractor. Discussions have been held with this contractor (East Waste), who are supportive of the proposed arrangement.

The Colby Phillips report includes diagrams of transfer paths which demonstrate how each land use/element of the proposed development stores and has their waste collected.

Council do not provide any commentary as to the waste management proposed.

7.8.4 Environmental Sustainability

The application is accompanied by a sustainability management plan prepared by Lucid Consulting Australia.

The plan identifies that the proposed development incorporates environmentally sustainable design initiatives, which comprise:

- R-values of insulation to meet best-practice guidelines
- High performance glazing
- Heavy-weight construction materials responsive to thermal mass

- A highly efficient mechanical system and domestic hot water plant
- LED lighting used throughout
- Natural ventilation and daylight to all dwellings
- Water efficient fixtures and fittings
- Communal rooftop greenspace and landscaping throughout the site
- Light coloured roofing to reduce the 'urban heat island' effect.

The plan identifies additional measures, which the applicant states they will consider during the detailed design phase; prior to Development Approval being issued. These include:

- Motion and daylight sensors for energy efficient lighting
- Low VOC finishes
- Absorptive interior finishes and low noise equipment
- Provision of separated recycling and composting areas
- Generation of on-site renewable energy through solar PV

Overall, it is considered that the proposed development achieves an appropriate level of environmentally sustainable design elements, and the measures for inclusion during design development phase will see a well-performing development.

7.8.5 Wind Analysis

A preliminary wind effects report has been prepared by TMK Consulting Engineers for the proposal.

The report discusses the likely wind effects on pedestrian comfort at ground level and the residence/amenity comfort at the open podium level of the townhouses and apartment towers.

Given the expansive setbacks from The Parade, George Street and Edward Street, the wind effects felt from these public spaces is considered negligible.

A minor/moderate window impact on the podium level is noted. The report does not consider this impact to be of any concern, however notes that consideration may wish to be given in the future to the type of landscaping and covering areas with canopy structures to improve amenity. The application does proposed a landscaped arbour structure at this podium, which is considered to provide a level of deflection from down-swept winds experienced from a south-westerly wind event.

The wind impacts are considered to be acceptable.

7.9 Signage

The application includes a number of 'indicative signage zones' for the development, but does not provide any details of this signage.

The applicant confirms that signage does not form part of this application, and that a separate development application will be lodged for any signage.

7.10 Staging

The application proposes the development be undertaken in stages.

Stage 1 will involve the demolition of existing buildings, site works and services to be removed, plus excavation and associated retaining walls, piling, capping beams and footings for columns, the central services core and load-bearing precast walls.

Stage 2 will involve construction of the remainder of the development through to practical completion.

The proposed staging strategy is acceptable, and consistent with development of this nature and scale.

8. CONCLUSION

The proposal for a mixed use development is encouraged in the District Centre (Norwood) Zone. Where any mix of land uses are proposed, a careful, strategic approach should be taken to minimise any conflicts between these uses – and indeed to protect the locality and surrounding existing development.

Residential land uses above commercial land uses are explicitly sought in the Objectives of the Zone; of which this application proposes.

The proposed development raises the following key planning concerns:

- Divergence from building height guidance by 6.3 metres
- Penetration of building interface envelope
- Removal of mature vegetation at southern boundary
- Lack of deep soil zones for all residential development

The applicant provides a justification to the over-height components, stating that the setting back of these tall elements from any street, the shielding of view by way of existing built form, and the general support from the Government Architect, all being factors for the relevant authority to support the proposed height.

The penetration of the building envelope is considered relatively minor, and as demonstrated by the shadow diagrams provided by the applicant, will have minimal impacts in terms of overshadowing. Similarly, the overlooking impacts given this penetration are appropriately managed through screening – in addition to the physical distance separation between any possible vantage point and any habitable or open space of adjoining properties.

The landscape strategy is considered to be lacking in some respects. There are no provisions of any deep soil zones for any of the residential component – something the Development Plan places importance on. The removal of the stand of mature vegetation at the southern boundary (particularly at the George Street end) further compounds the problematic approach to landscaping. The applicant does, however, propose an arbour structure at this point; however still lacks trees and deep soil zones as sought by Development Plan policy. Whilst the arbour structure may offer good obscurity and relief at the interface, it does not strictly meet policy. With the above said, it is not considered fatal to the overall development. The clearing of regulated and significant trees are done so to avoid conflict with the proposed built form. The retention of the trees as proposed is considered a fair balance between developable area and tree retention.

When considered in its entirety, it is concluded that the proposed development warrants the granting of Development Plan Consent, subject to the conditions set out in the section below.

9. 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 Norwood Payneham and St Peters (City) Development Plan.
- 3) RESOLVE to grant Development Plan Consent to Development Application 155/M011/19 by 166 The Parade Pty Ltd c/- Masterplan SA Pty Ltd for the demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development, incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages at 166 The Parade, Norwood, subject to the following reserved matters and conditions of consent.

RESERVED MATTERS

1. Pursuant to Section 33 (3) of the Development Act 1993, the following matters shall be reserved for further assessment, to the satisfaction of the State Commission Assessment Panel, prior to the granting of Development Approval:
 - 1.1 Detailed landscaping plans be provided which demonstrates specific species, their locations, number and mature heights at all landscaped areas of the proposed development.

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 plans submitted in Development Application No 155/M011/19.

Reason for condition: to ensure the development is constructed in accordance with endorsed plans and application details.

2. Prior to Development Approval being issued, the applicant shall provide a physical materials board which demonstrates accurately the proposed materials and finishes, to the satisfaction of the State Commission Assessment Panel in consultation with the Government Architect.

Reason for condition: to ensure the proposed materials and finishes are consistent with the level of quality represented in the documentation.

3. All external lighting on the site shall be designed and constructed to conform to Australian Standard (AS 4282-1997).

Reason for condition: to ensure external lighting does not introduce undue potential for hazards to users of the adjacent road network in accordance with the necessary standard.

4. All stormwater infrastructure 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.

Reason for condition: to ensure stormwater infrastructure is designed and constructed to minimise potential for flood risk to adjoining property or public roads associated with stormwater runoff in accordance with the necessary standard.

5. All bicycle facilities shall be designed in accordance with AS/NZS 2890.3:2015.

Reason for condition: to ensure bicycle facilities are designed to adhere to the necessary standard.

6. The development will comply with noise level criteria specified in Environmental Protection (Noise) Policy 2007 (under the Environmental Protection Act). This includes noise from roof-level plant and equipment and the air-conditioning units with consideration given to the adjacent properties. Noise attenuation devices and visual screening will be implemented as necessary, and in accordance with the recommendations contained in the Resonate report titled 'Planning Stage Acoustic Assessment' dated 10 October 2019.

Reason for condition: to ensure mechanical equipment does not cause unreasonable nuisance or loss of amenity in the locality.

7. 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.

Reason for condition: to ensure appropriate reinstatement of any Council, utility or state-agency maintained infrastructure affected by construction activities.

8. All off-street car parking areas shall be designed in accordance with AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009.

Reason for condition: to ensure off-street car parking facilities are designed to adhere to the necessary standards.

ADVISORY NOTES

- a. 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.
- b. 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.
- c. 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).

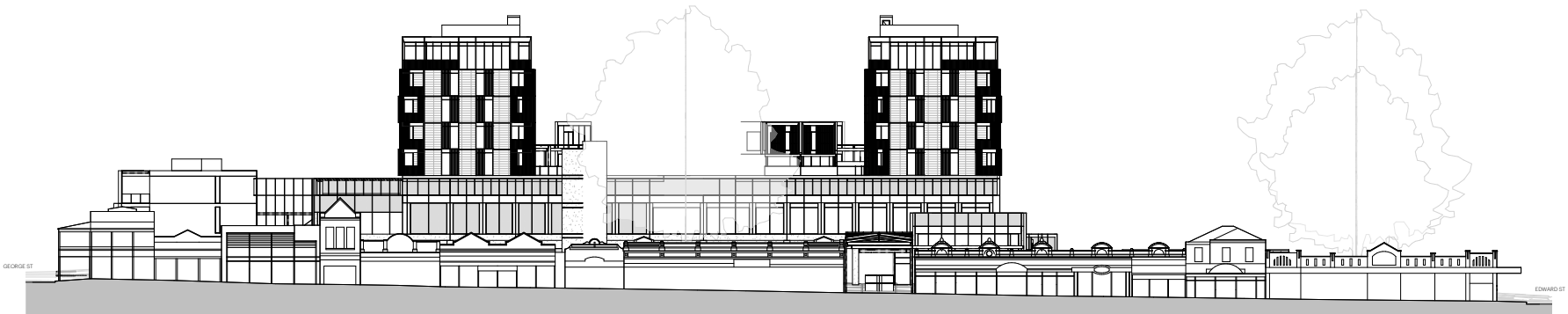
- d. The applicant is reminded of their obligations under the Local Nuisance and Litter Control Act 2016 and the Environment Protection Act 1993, in regard to the appropriate management of environmental impacts and matters of local nuisance. For further information about appropriate management of construction site, please contact the City of Norwood, Payneham and St Peters.
- e. Footpaths adjacent to the site are to be kept in a safe condition for pedestrians at all times during construction works. All driveways and footpaths transverse by vehicles using the site are to be maintained in a reasonable condition for the duration of the works, and are to be reinstated to the satisfaction of Council on completion of the works.
- f. Signage has not been assessed and does not form part of this application. A separate application must be lodged for any signage/advertisement on the land.



Will Gormly
Senior Planning Officer
CITY & INNER METRO DEVELOPMENT ASSESSMENT
DEPARTMENT OF PLANNING, TRANSPORT and INFRASTRUCTURE

0906-184 - COLES NORWOOD MIXED DEVELOPMENT - SHEET LIST

SHEET NO.	CONTENTS	DRAWN BY	CHECKED BY	REVISION	REV DATE	REVISION NOTE
0000	COVER SHEET	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0001	GENERAL NOTES	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0002	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0003	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0004	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0005	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0006	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0007	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
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0014	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0015	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0016	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0017	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
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0019	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL
0020	SECTIONAL ELEVATION	PA000	PA000	A	14.10.2019	ISSUED FOR APPROVAL





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0016	0014	DATE ISSUED 14.10.2019	1:4 PLATE No: 14.10.2019
0017	1 OF 15	0016000	0016000
0018	1 OF 15	0016000	0016000
0019	1 OF 15	0016000	0016000
0020	1 OF 15	0016000	0016000

REVISION	DATE	AMENDMENT
A	14.10.2019	ISSUED FOR APPROVAL



PROJECT
COLES NORWOOD MIXED
DEVELOPMENT
300 THE PRINCE, NORWOOD SA 5007

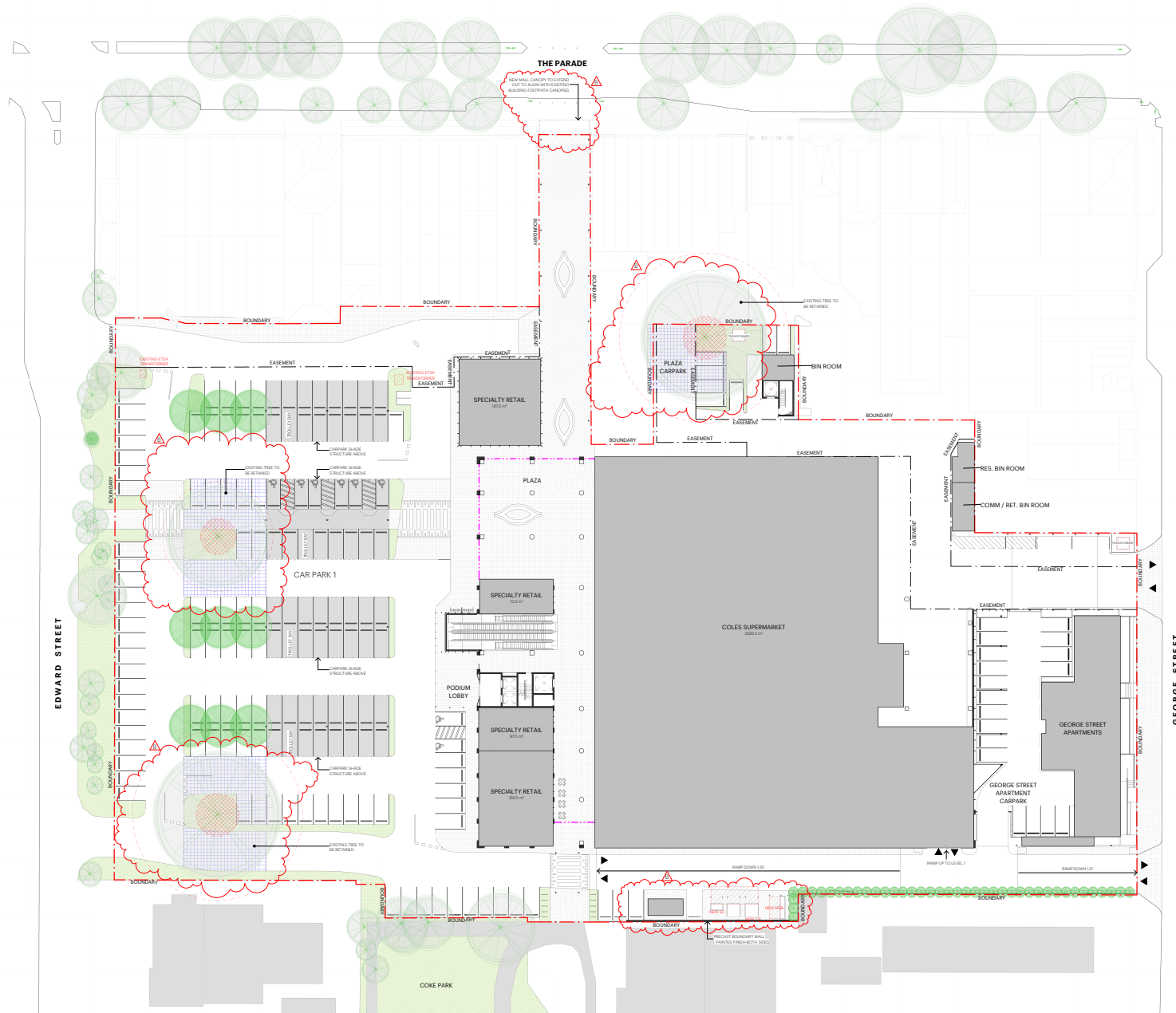
CLIENT
AUSTRALASIAN PROPERTY DEVELOPMENTS

DRAWING TITLE
COVER SHEET

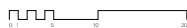
DRAWING NUMBER
0906-184-PA00

REVISION
A

PUBLIC CARPARK SCHEDULE OVERALL	
TYPE	NO.
CARPARK 1	
Accessable Parking Space	8
Parking Space	148
Drop/Pick Up	1
	(5)
LEVEL OF CARPARK	
Accessable Parking Space	2
Parking Space	98
	100
LEVEL 02 CARPARK	
Accessable Parking Space	2
Parking Space	57
	59
BLACK CARPARK	
Parking Space	5
	5
STAFF CARPARK	
5452 (Payable) Park	1
6300 (Payable) Park	1
6600 (Payable) Park	1
Parking Space	32
	35
GRAND TOTAL	100



SITE PLAN - FFL 62.52
SCALE 1/250



DRAWING AMENDMENTS		
Rev	Date	Amendment
A	14.10.19	ISSUED FOR APPROVAL
B	10.12.19	RESPONSE TO REPRESENTATION - FOR APPROVAL

FOR APPROVAL
DATED 14.10.2016

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Project: 0906184-0000-001-000

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Knox Town SA 5007
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0002	14/10/19	0906184-0000-001-000	0906184-0000-001-000	14/10/19
0003	14/10/19	0906184-0000-001-000	0906184-0000-001-000	14/10/19
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NO.	DATE	ISSUED TO	BY	DATE
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FOR APPROVAL
14/10/19

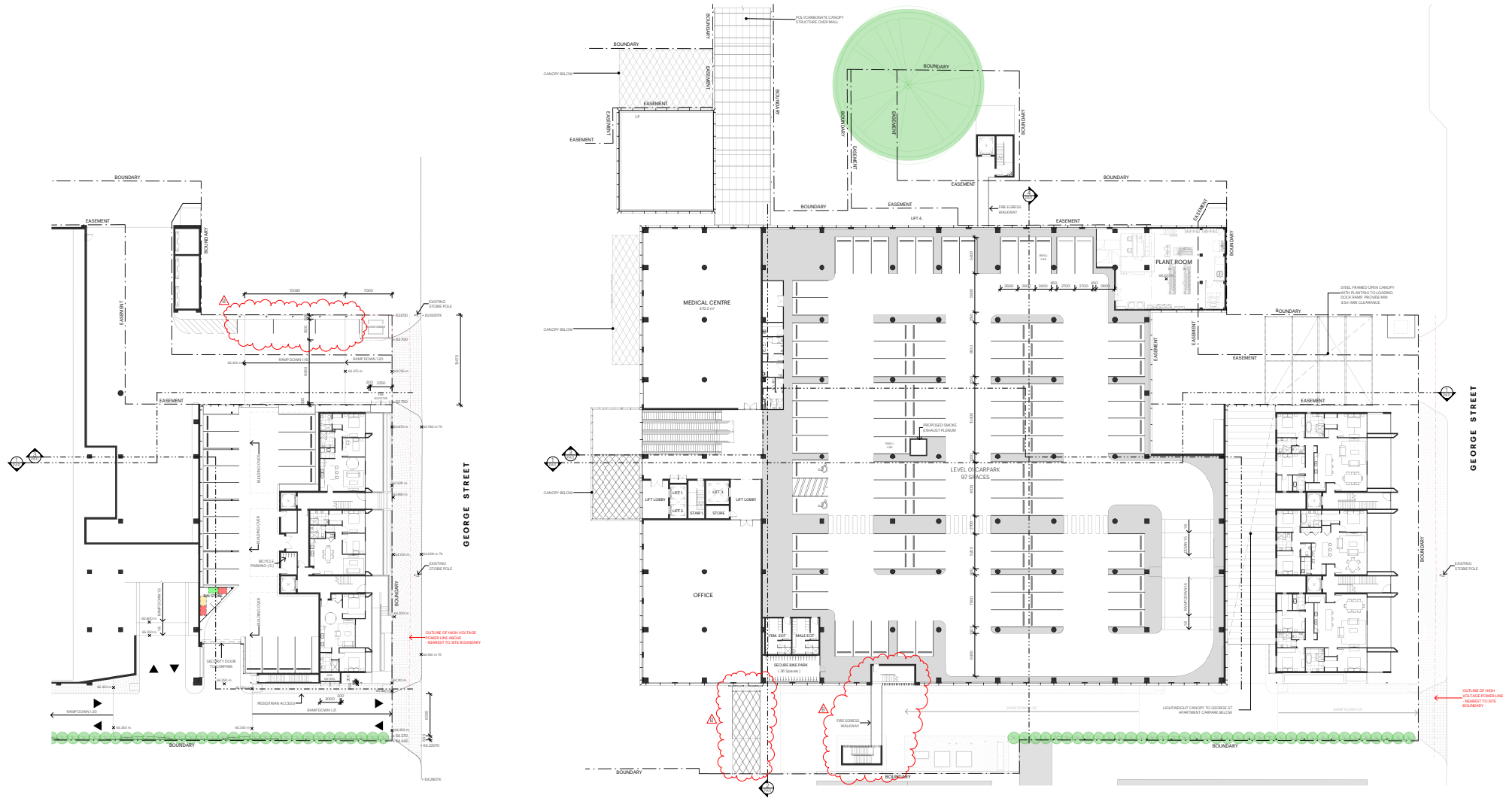
GEORGE ST APARTMENTS - GROUND PLAN - FFL 65.53
SCALE 1:200

RESIDENTIAL CARPARK SCHEDULE GRND	
TYPE	NO.
Carpark	10
Storage	10
Grand Total	20

FIRST LEVEL PLAN - FFL 68.52
SCALE 1:200

PUBLIC CARPARK SCHEDULE LEVEL 1	
TYPE	NO.
Carpark	10
Storage	10
Grand Total	20

AREA SCHEDULE (LEVEL 1 COMMERCIAL)	
NAME	AREA
Medical Centre	1000.00
Office	1000.00
Plant Room	1000.00
Grand Total	3000.00



PROJECT
COLES NORWOOD MIXED
DEVELOPMENT
CLIENT
AUSTRALIAN PROPERTY DEVELOPMENTS

DRAWING NO.
GEORGE ST APARTMENT /
FIRST LEVEL PLAN
DRAWING NUMBER
0906-184-PA03
REVISION
0



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Kart Town SA 5067 F +61 8 8363 7699 studionine.net.au



TYPE	NO.
LEVEL 02 SECURED CARPARK	
Accessible Parking Space	2
Parking Space	71
	73
GRAND TOTAL	73

ISSUE:	ODPA	DATE ISSUED:	14/10/2019	D.A. PLAN:	NH 14/10/2019
SHEET:	5 OF 15	DRAWN:	PMJG	D.A. BUILD:	
SCALE AT AD:	1:200	CHECKED:	NH	TENDER:	
FIRST ISSUED:	14/10/2019			CONS:	

DRAWING AMENDMENTS		
Rev	Date	Amendment
A	14.10.19	ISSUED FOR APPROVAL
B	10.12.19	RESPONSE TO REPRESENTATION - FOR APPROVAL



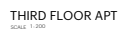
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**COLES NORWOOD MIXED
DEVELOPMENT**
100 RIVERVALE AVENUE, NORWOOD SA 5067
CLIENT
AUSTRALASIAN PROPERTY DEVELOPMENTS

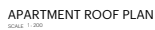
DRAWING TITLE
SECOND LEVEL PLAN

DRAWING NUMBER
0906-184-PA04









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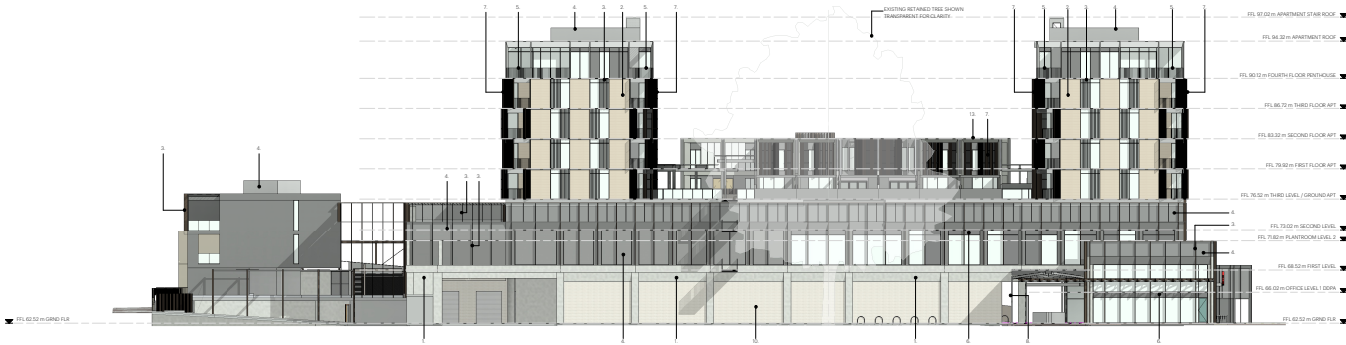
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SHEET:	9 OF 15	DRAWN:	PM/NG	D/A BUILD:	
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FIRST ISSUED:	16/10/2019			CONGT:	

FOR APPROVAL
DATED 14.10.2018

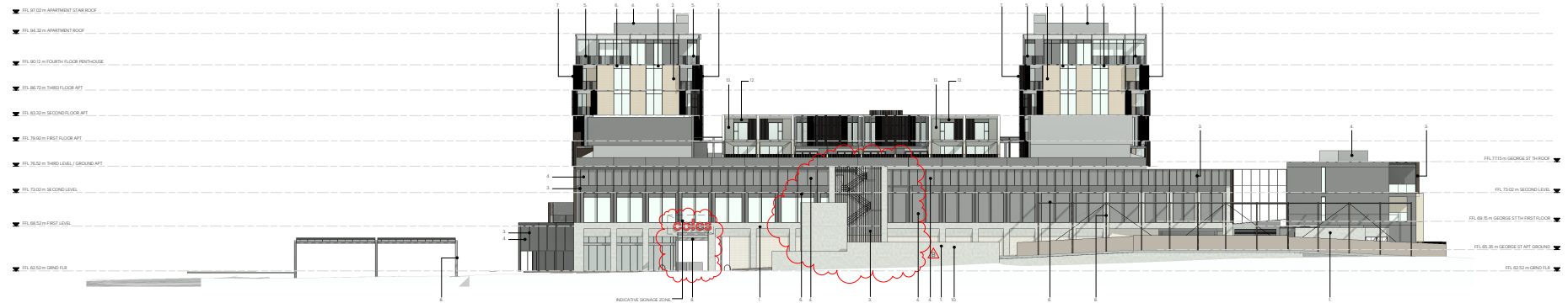


ELEVATION MATERIALS LEGEND

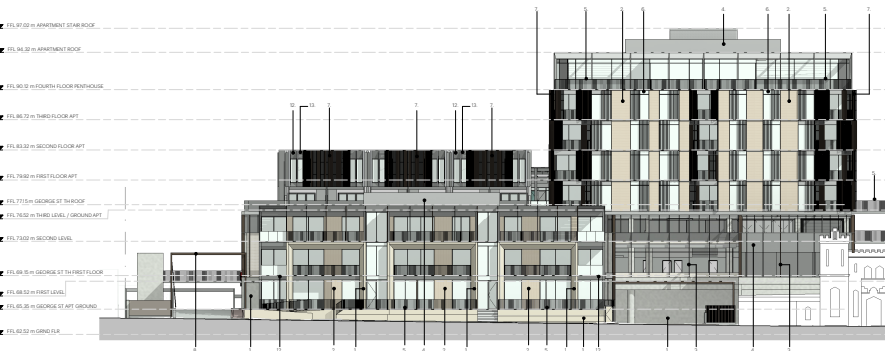
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2. TERRAZZOTA CLADDING (SLIGHT BRONZE)
3. VERTICAL ALUMINIUM FINIS (BRONZE)
4. EXPOSED ALUMINIUM MESH (CHROME)
5. VERTICAL STEEL SHELLS (BRONZE/CHROME)
6. COLOURBACK GLASS SPINNEL PANEL (CHROME)
7. OPERABLE FOLDING SHUTTERS (BRONZE)
8. STEEL FRAMING (CHROME/BLACK BRONZE)
9. FOLDED ALUMINIUM SLAT CANOPY (BRONZE)
10. STACK BOXED BRONZE/BLACK BRONZE
11. VERTICAL TRASS SLAT FINISH



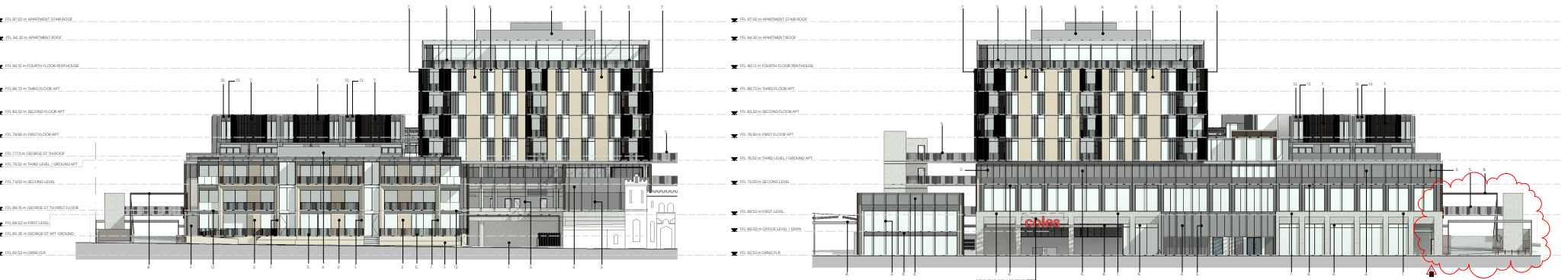
EXTERNAL ELEVATION NORTH
SCALE: 1:200



EXTERNAL ELEVATION SOUTH
SCALE: 1:200



EXTERNAL ELEVATION EAST
SCALE: 1:200



EXTERNAL ELEVATION WEST
SCALE: 1:200

PROJECT	COLES	DATE ISSUED	14/10/2024	1:4 PLATE NO.	14/10/2024
CLIENT	COLES	DATE	14/10/2024	DATE	14/10/2024
SCALE	1:200	DATE	14/10/2024	DATE	14/10/2024
PROJECT	COLES	DATE	14/10/2024	DATE	14/10/2024

REVISION	DATE	DESCRIPTION
A	14/10/2024	ISSUED FOR APPROVAL
B	14/10/2024	RESPONSE TO REPRESENTATION - FOR APPROVAL

FOR APPROVAL
DATE: 14/10/2024

PROJECT	COLES NORWOOD MIXED DEVELOPMENT	EXTERNAL ELEVATIONS
CLIENT	AUSTRALIAN PROPERTY DEVELOPMENTS	REVISION
DRAWING NUMBER	0906-184-PA09	B



STREETSCAPE ELEVATION - THE PARADE

SCALE: 1:500



STREETSCAPE ELEVATION - EDWARD STREET

SCALE: 1:500



STREETSCAPE ELEVATION - GEORGE STREET

SCALE: 1:500

File: Y:\Design\Projects\0906-0006_NorwoodMixedDevelopment\0906-0006_NorwoodMixedDevelopment.dwg



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NO. 0001	DATE ISSUED 14/10/2019	1:50 PLATE NO. 14/10/2019
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NO. 0001	1:50 PLATE NO. 14/10/2019	1:50 PLATE NO. 14/10/2019
NO. 0001	1:50 PLATE NO. 14/10/2019	1:50 PLATE NO. 14/10/2019
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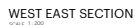
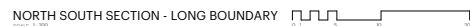
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FOR APPROVAL
DATE: 14/10/2019

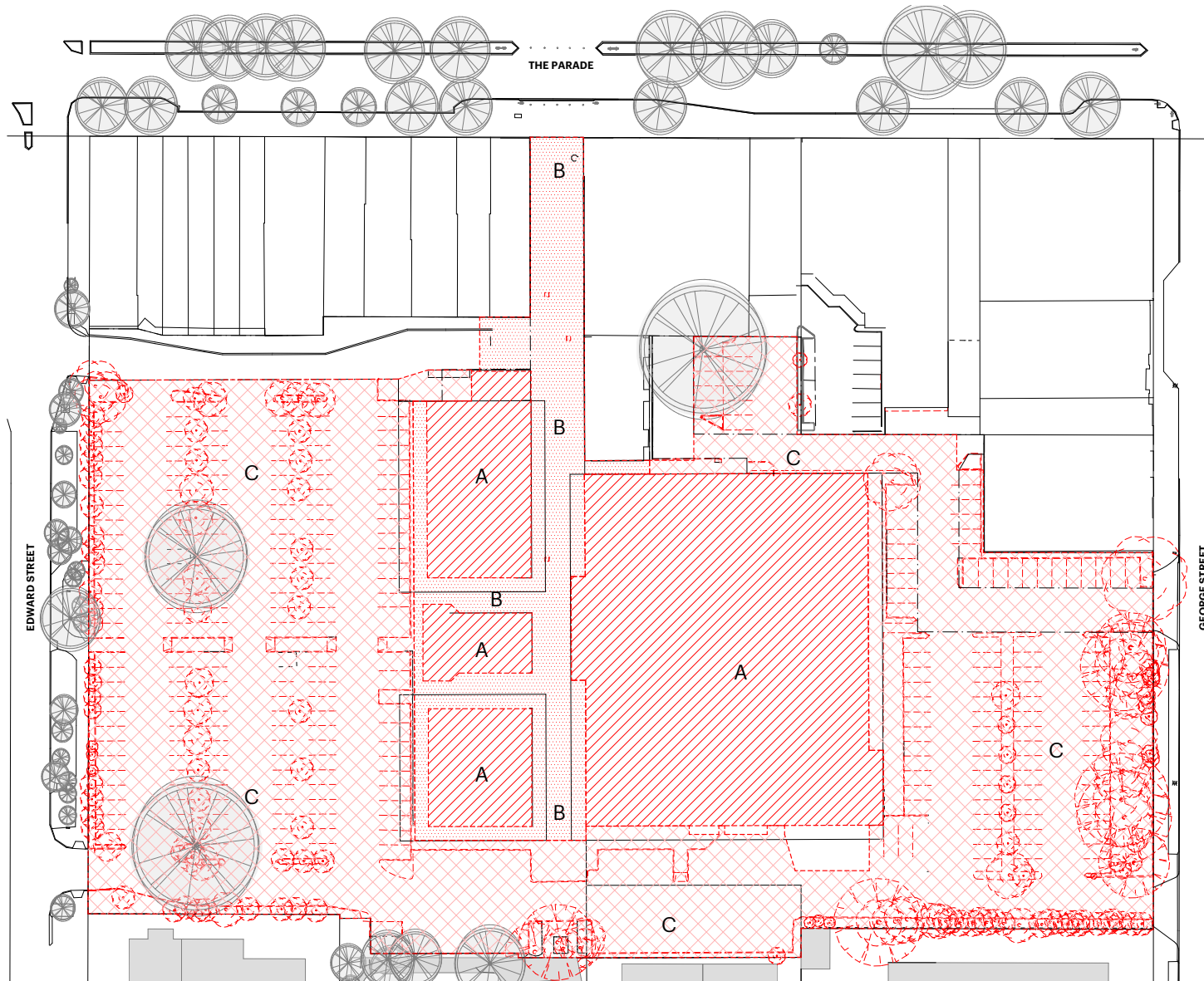
PROJECT COLES NORWOOD MIXED DEVELOPMENT 9 KING WILLIAM STREET, NORWOOD, SA 5007	DRAWING TITLE STREETSCAPE ELEVATIONS
CLIENT AUSTRALASIAN PROPERTY DEVELOPMENTS	DRAWING NUMBER 0906-184-PA10
	REVISION A

1. GRAY-BLASTED SANDSTONE CONCRETE
2. TERRACOTTA CLADDING (LIGHT BROWN)
3. VERTICAL ALUMINUM FINIS (BRONZE)
4. EXPANDED ALUMINUM MESH (CHARCOAL)
5. VERTICAL STEEL BALLS TRADES BRONZE/CHARCOAL
6. COLOURBACK GLASS SPANDREL PANEL (CHARCOAL)
7. OPERABLE FOLDING SHUTTERS (BRONZE)
8. STEEL FRAMING (CHARCOAL/BRONZE)
9. FOLDED ALUMINUM SLIDE CANOPY (BRONZE)
10. STACK BONDED BRICKWORK (MID-BROWN)
11. VERTICAL TIMBER SLAT FENCING





- LEGEND - DEMOLITION PLAN
- EXISTING COLORED SUPERMARKET BUILDING AND ADJACENT SPECIALTY SHOP BUILDINGS
 - EXISTING WALL, STEEL FRAMED CANOPY, EXISTING LIGHTS, SIGNAGE, ETC.
 - EXISTING STRIPED PARKED CAR PARKING AREAS, ASSOCIATED RETARD WALLS, CONCRETE KERBS, RAILS, SIGNAGE, ETC.



DEMOLITION FLOOR PLAN
Scale: 1:500

File: Y:\Projects\0906184\0906184-PA13\0906184-PA13-DEMOLITION.FDW



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Australia

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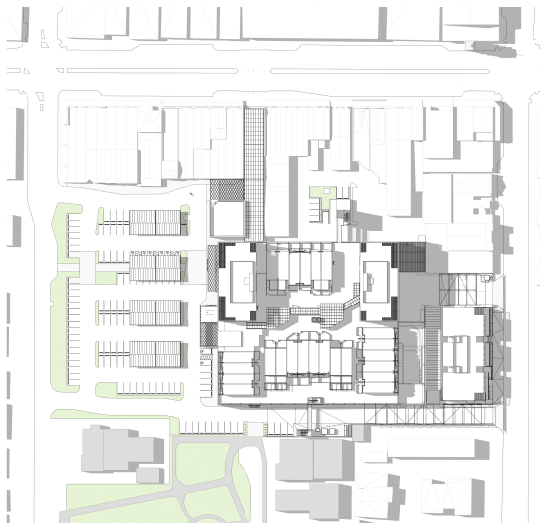
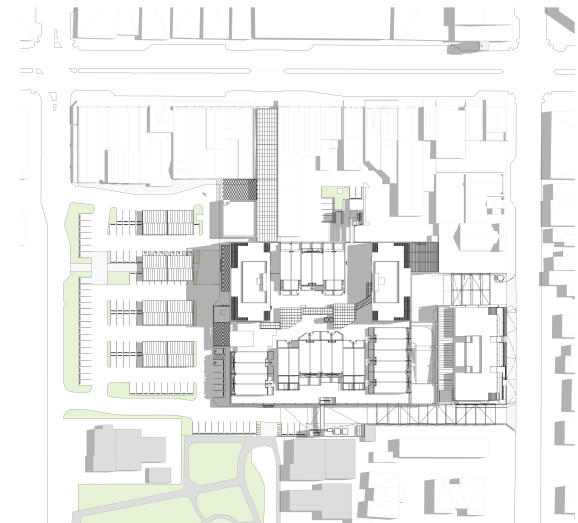
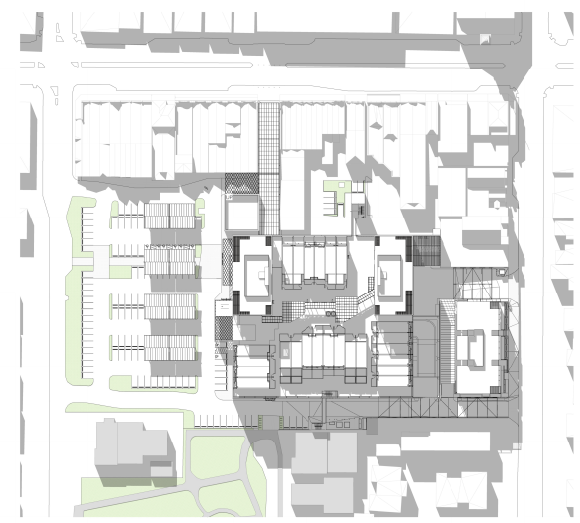
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FOR APPROVAL
14/10/2024

PROJECT
COLES NORWOOD MIXED
DEVELOPMENT
CLIENT
AUSTRALASIAN PROPERTY DEVELOPMENTS

DRAWING TITLE
DEMOLITION PLAN
DRAWING NUMBER
0906-184-PA13
REVISION
A





DEVELOPMENT APPLICATION FORM

COUNCIL: NORWOOD PAYNEHAM & ST PETERS COUNCIL

APPLICANT: 166 THE PARADE PTY LTD

Postal Address: C/- MASTERPLAN SA PTY LTD

33 CARRINGTON STREET, ADELAIDE, SA, 5000

OWNER: UNDER CONTRACT TO 166 THE PARADE PTY LTD

Postal Address: 42 NELSON STREET

STEPNEY SA 5069

BUILDER: TO BE ADVISED

Postal Address: _____

Licence No: _____

CONTACT PERSON FOR FURTHER INFORMATION:

Name: GRAHAM BURNS - MASTERPLAN SA PTY LTD

Telephone: 8193 5600

Email: GRAHAMB@MASTERPLAN.COM.AU

Mobile: 0413 832 602

EXISTING USE:

COLES SUPERMARKET AND ASSOCIATED OFF STREET PARKING

FOR OFFICE USE

Development No: _____

Previous Development No: _____

Assessment No: _____

<input type="checkbox"/> Complying	Application forwarded to DA Commission/Council on: _____ / _____ / _____ Decision: _____ Type: _____ Date: _____ / _____ / _____			
<input type="checkbox"/> Non-complying				
<input type="checkbox"/> Notification Cat 2				
<input type="checkbox"/> Notification Cat 3				
<input type="checkbox"/> Referrals/Concurrence				
<input type="checkbox"/> DA Commission				
	Decision	Fees	Receipt No	Date
Planning:				
Building:				
Land Division:				
Additional:				
Dev Approval:				

DESCRIPTION OF PROPOSED DEVELOPMENT: DEMOLISH SUPERMARKET AND REDEVELOP SITE FOR MIXED USE PURPOSES

LOCATION OF PROPOSED DEVELOPMENT:

House No: 166 Lot No: 18,34,35,101, 102, 107 Street: EDWARD & GEORGE STREETS Town/Suburb: NORWOOD

Section No (full/part): _____ Hundred: _____ Volume: 5570 Folio: 115

Section No (full/part): _____ Hundred: _____ Volume: 5570 Folio: 111

5570 114

6132 762

6132 733

5570 110

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:

If Class 5, 6, 7, 8 or 9 classification is sought, state the proposed number of employees: _____ Female: _____ Male: _____

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

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 1993 LEVY BEEN PAID? YES: ☐ NO: ☒

DEVELOPMENT COST (Do not include any fit-out costs): \$50.0 MILLION

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

SIGNATURE: _____

14 OCTOBER 2019

FOR: 166 THE PARADE PTY LTD

DEVELOPMENT REGULATIONS 2008

**Form of Declaration
(Schedule 5, Clause 2A)**

To: State Commission Assessment Panel
From: MasterPlan SA Pty Ltd on behalf of 166 The Parade Pty Ltd
Date of Application: 14 October 2019

Location of Proposed Development:

House Number:	166	Lot Number:	18, 34, 35, 101, 102, 107
Street:	George Street and Edward Street	Town/Suburb:	Norwood
Section No (full/part):	-	Hundred:	-
Volume:	5570, 5570, 5570, 6132, 6132, 5570	Folio:	115, 111, 114, 762, 733, 110

Nature of Proposed Development:

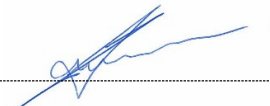
Demolish existing supermarket and construct new supermarket, specialty shops, office and medium density housing with associated off-street parking, access and loading facilities

MasterPlan SA Pty Ltd, being the company acting on behalf of 166 The Parade Pty Ltd for the development described above, declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of Section 86 of the *Electricity Act 1996*. I make this declaration under Clause 2A(1) of Schedule 5 of the *Development Regulations 2008*.

14 October 2019

Date

Signed



Note 1

This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in Section 4(1) of the *Development Act 1993*), other than where the development is limited to:

- an internal alteration of a building; or
- an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2

The requirements of Section 86 of the *Electricity Act 1996* do not apply in relation to:

- a fence that is less than 2.0 m in height; or
- a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3

Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4

The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5

Information brochures 'Powerline Clearance Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from Council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6

In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

REAL PROPERTY ACT, 1986



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.



Certificate of Title - Volume 5570 Folio 110

Parent Title(s) CT 4179/299
Creating Dealing(s) SC 8458272
Title Issued 31/08/1998 **Edition** 3 **Edition Issued** 18/05/2012

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
 OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 34 FILED PLAN 4952
 IN THE AREA NAMED NORWOOD
 HUNDRED OF ADELAIDE

Easements

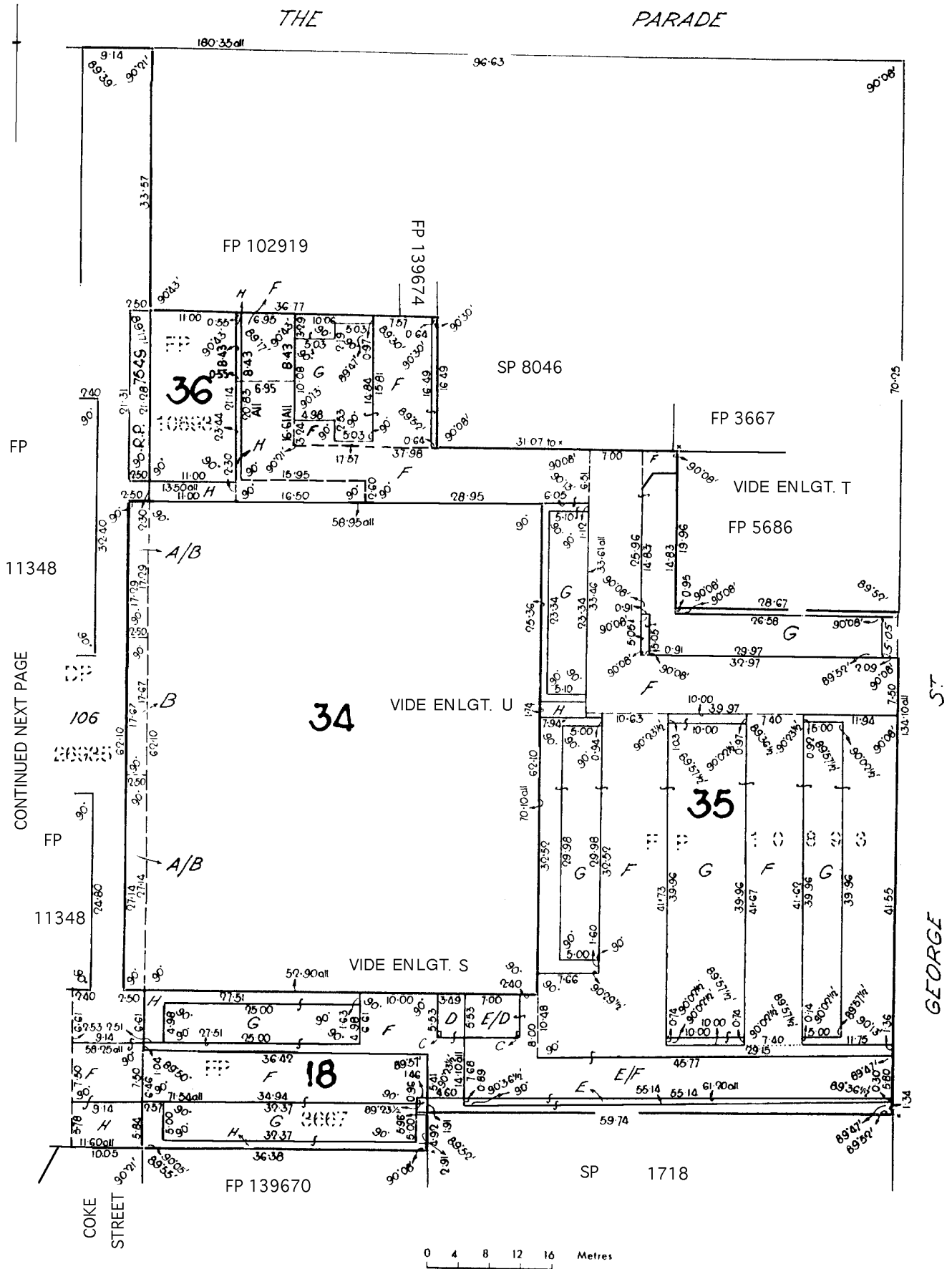
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (V 4504997)
 SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED B (GRO NO.103 BOOK 148)
 TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED C AND D (T 4705318)
 TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED F AND G (T 4705319)
 TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED H (T 4705319)
 TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED E

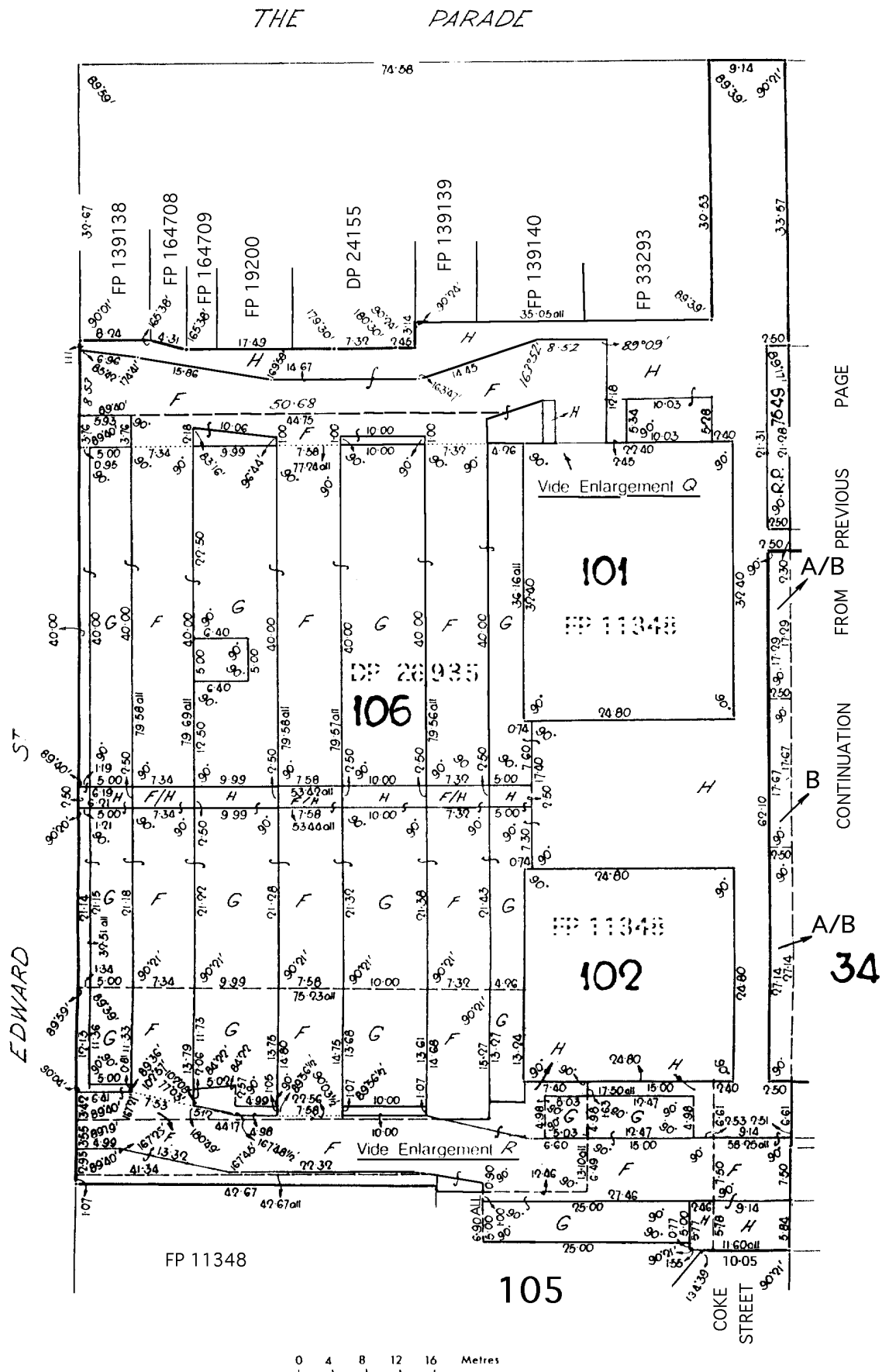
Schedule of Dealings

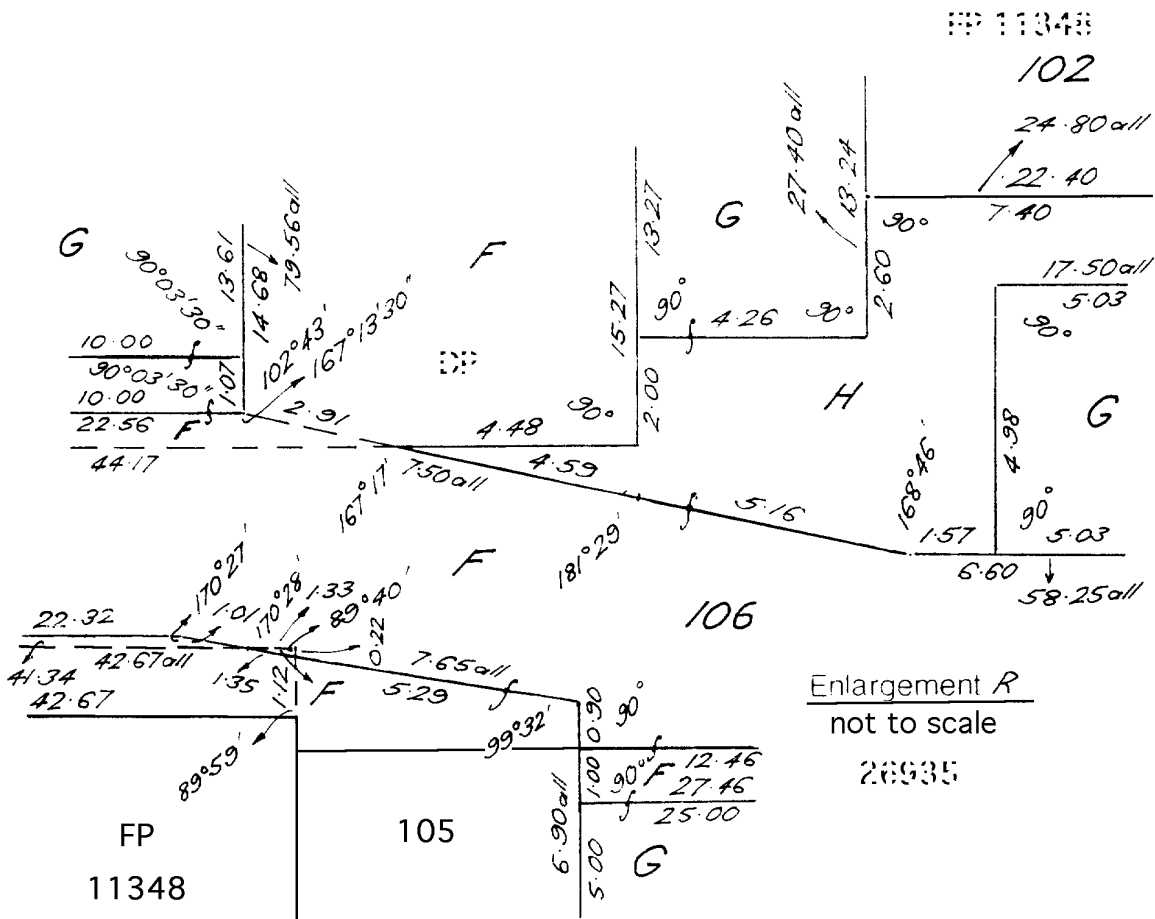
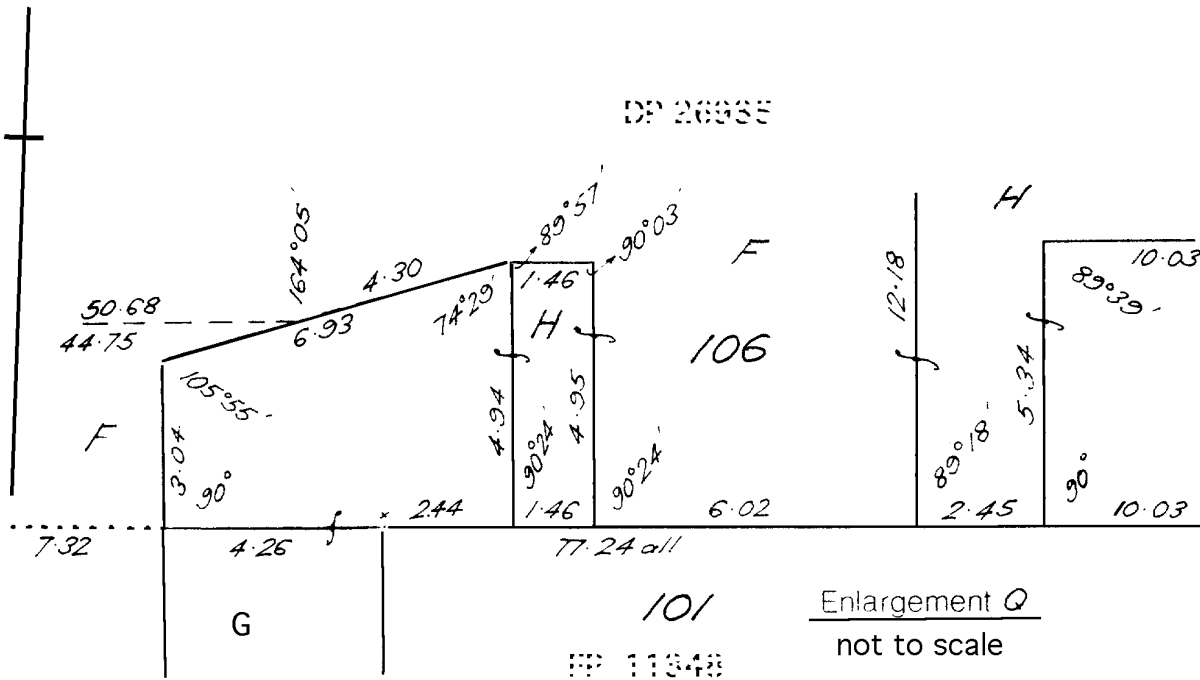
Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS (SINGLE COPY ONLY)

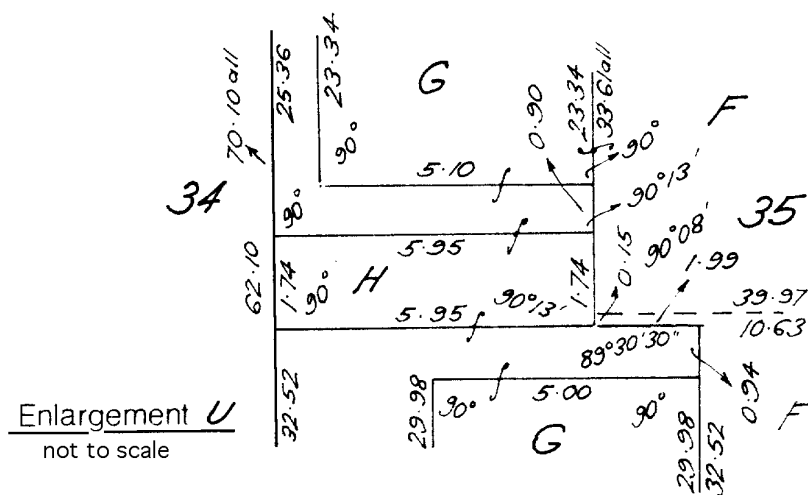
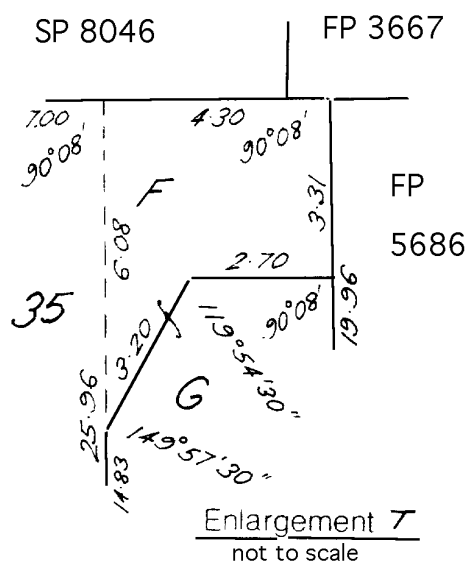
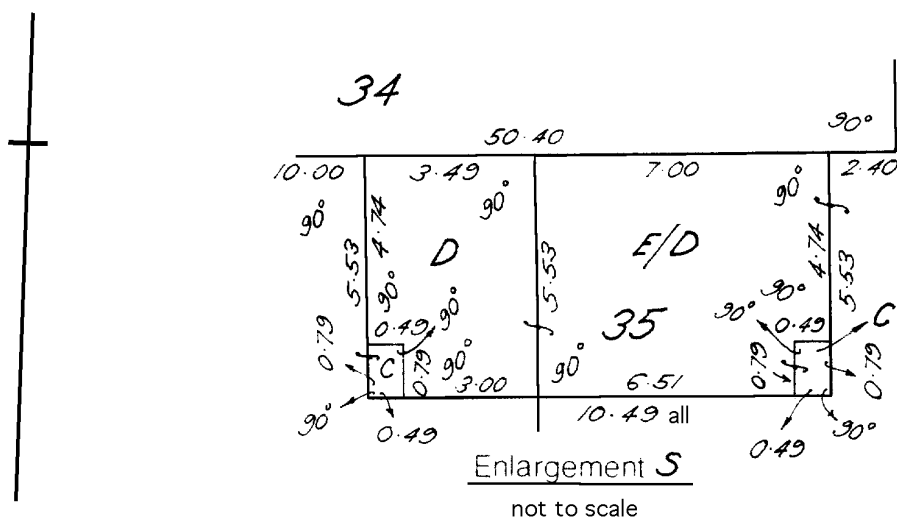
Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL











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.



Certificate of Title - Volume 5570 Folio 111

Parent Title(s)	CT 4179/300		
Creating Dealing(s)	SC 8458272		
Title Issued	31/08/1998	Edition 10	Edition Issued 18/05/2012

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 101 FILED PLAN 11348
IN THE AREA NAMED NORWOOD
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (V 4504996)
SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED A (GRO NO.103 BOOK 148)
TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED C AND D (T 4705319)
TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED E (T 4705319)
TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B

Schedule of Dealings

Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS (SINGLE COPY ONLY)

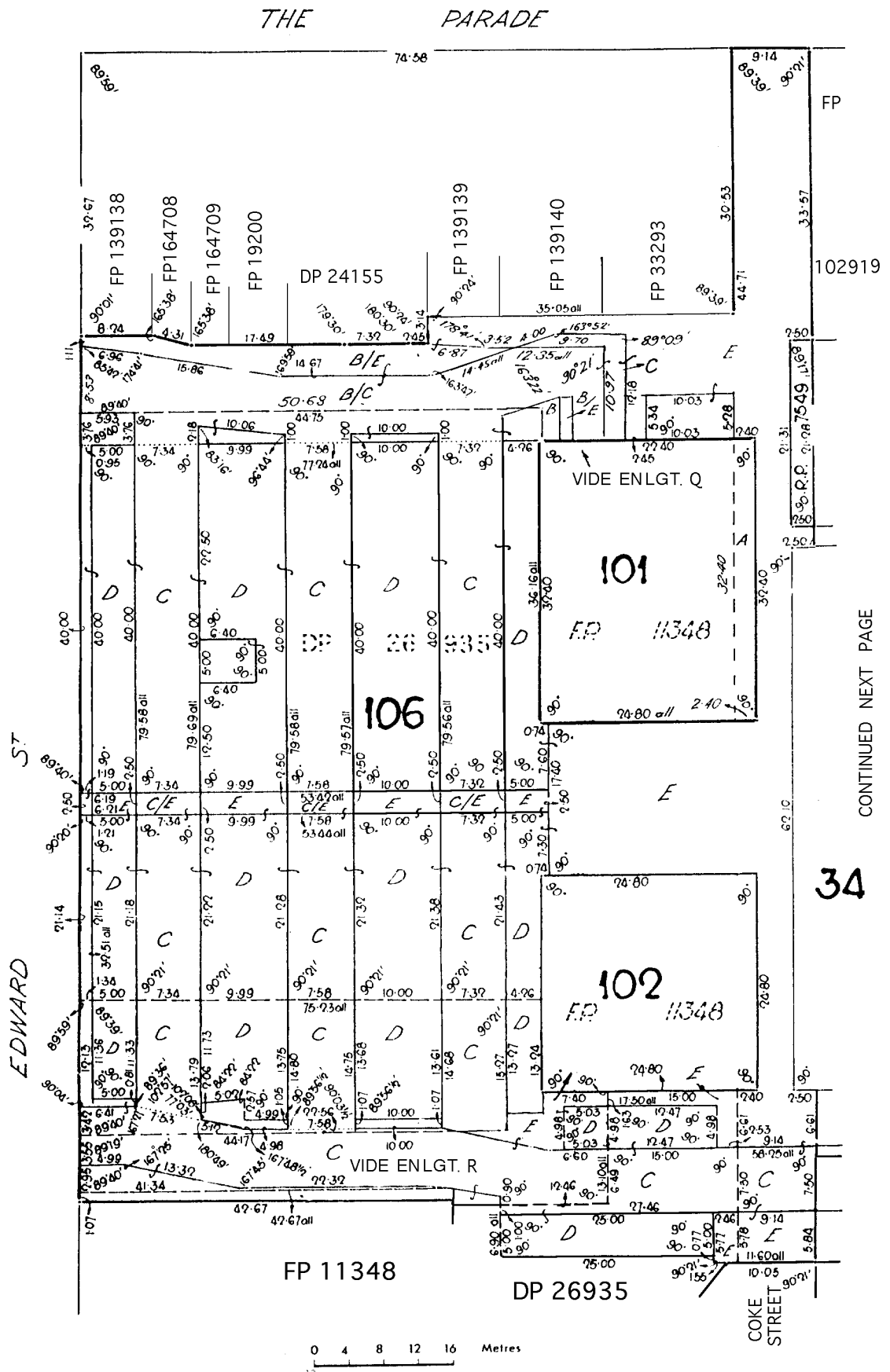
Notations

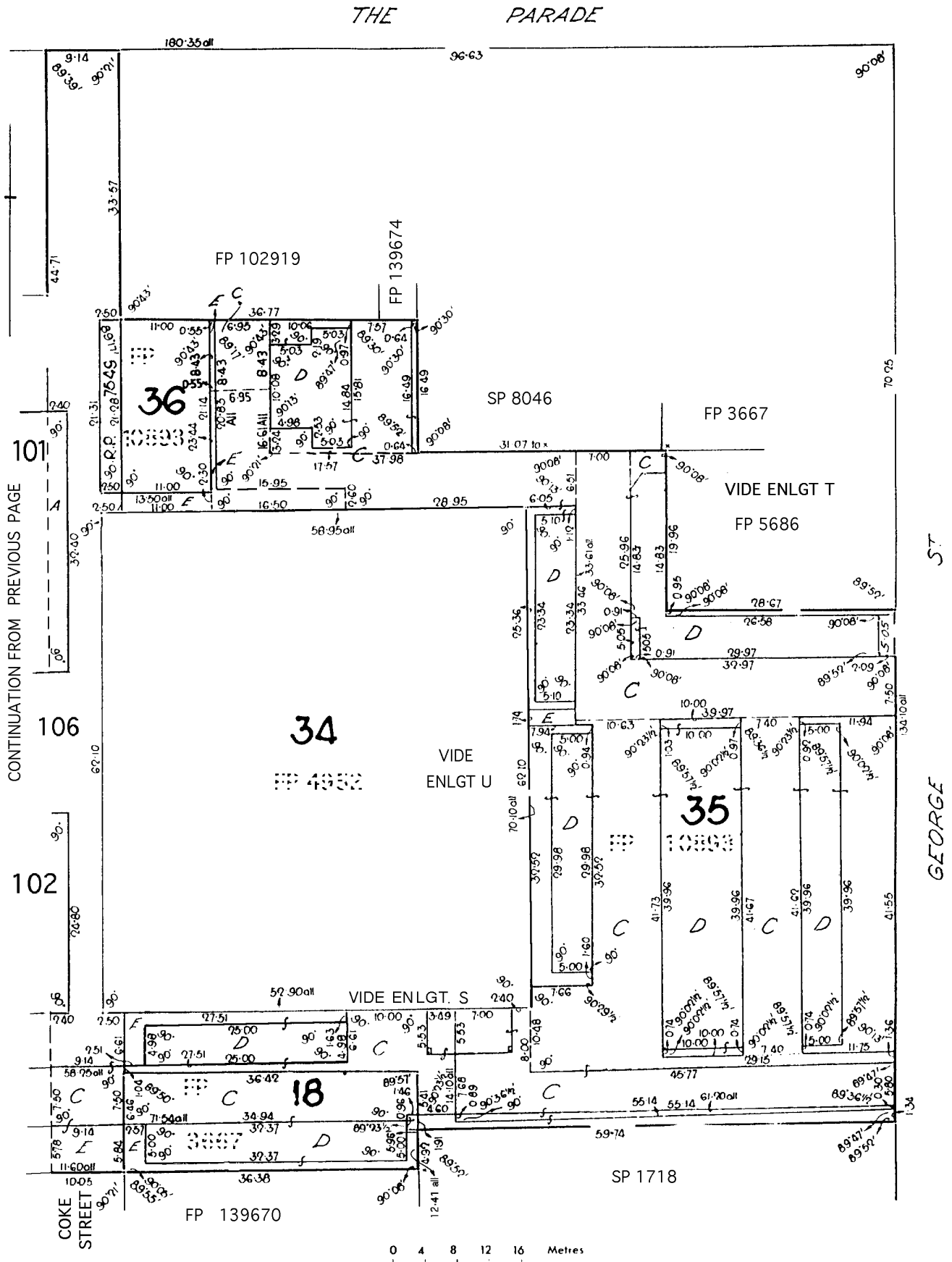
Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

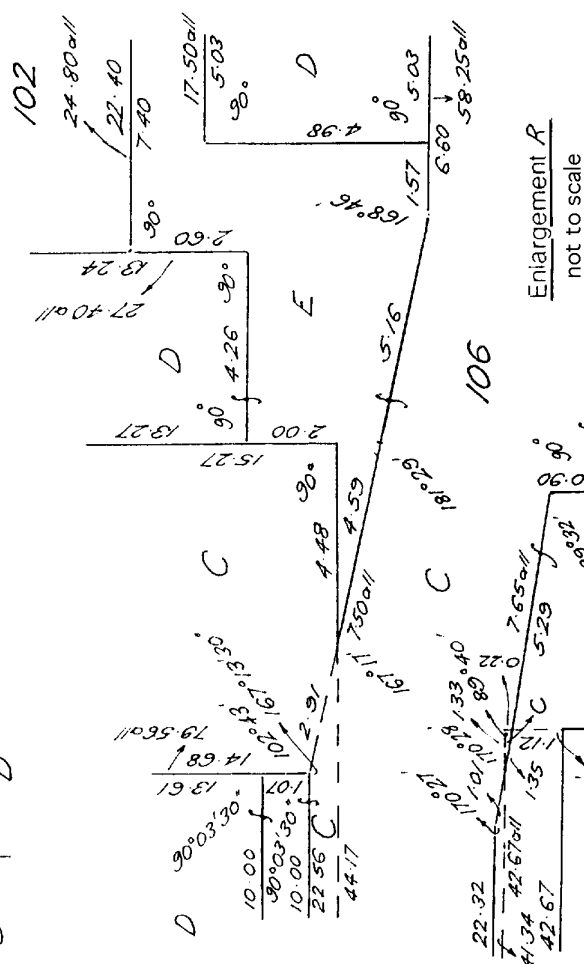
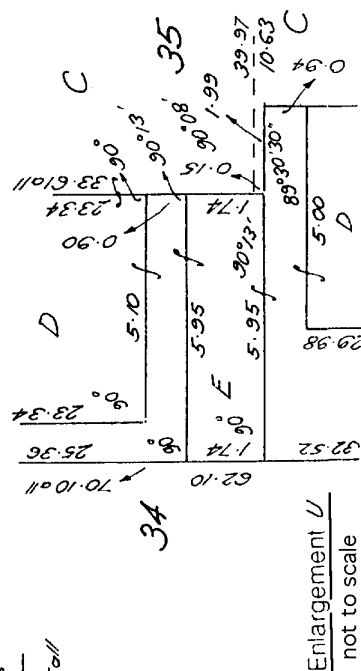
Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G103/2005
PLAN FOR LEASE PURPOSES VIDE G69/1979

Administrative Interests	NIL
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REAL PROPERTY ACT, 1886



South Australia

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.



Certificate of Title - Volume 5570 Folio 114

Parent Title(s)	CT 5406/31			
Creating Dealing(s)	SC 8458272			
Title Issued	31/08/1998	Edition 3	Edition Issued	18/05/2012

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 35 FILED PLAN 10893
IN THE AREA NAMED NORWOOD
HUNDRED OF ADELAIDE

Easements

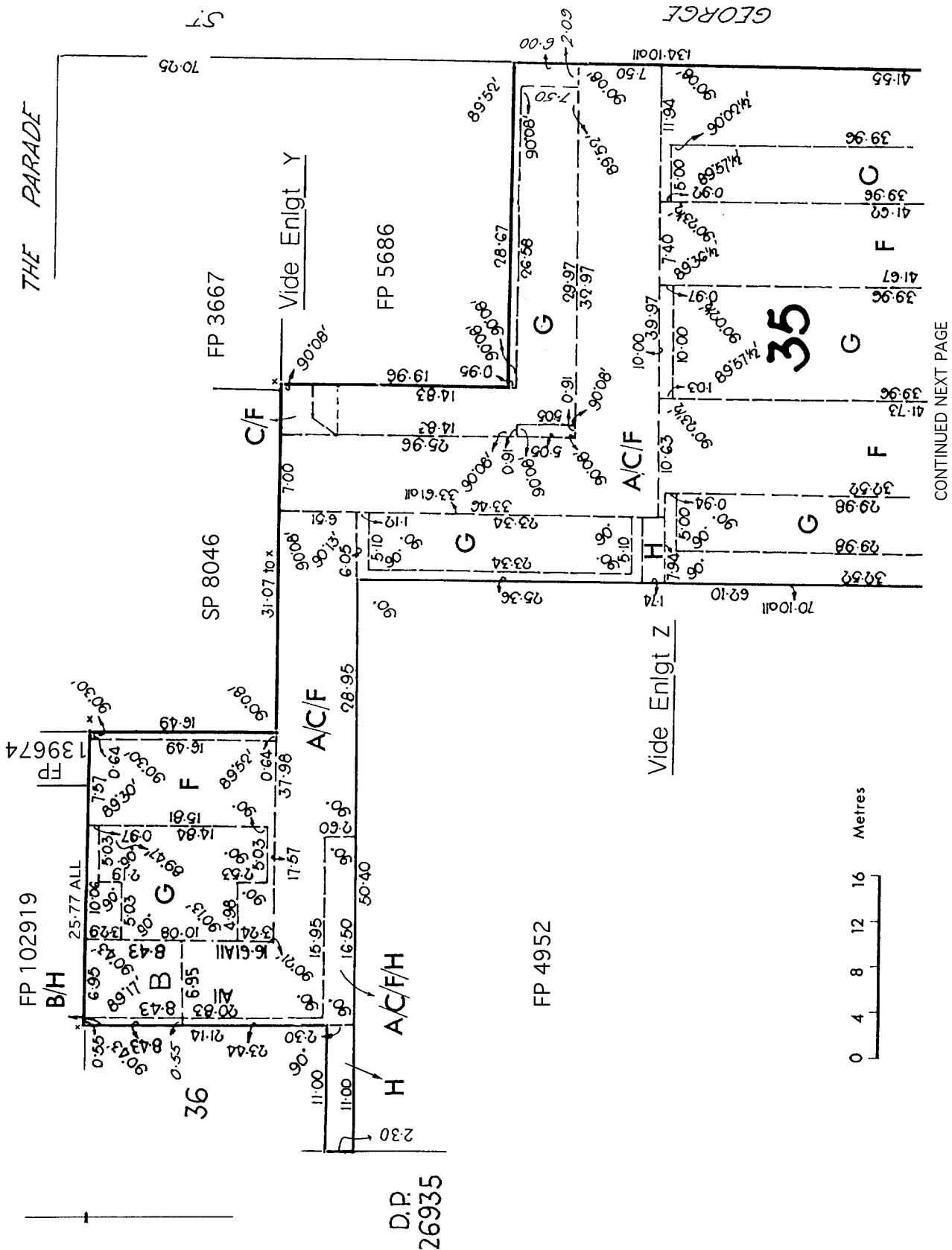
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A AND B (T 4693967 AND T 4693968 RESPECTIVELY)
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED D AND E (T 4705318)
SUBJECT TO EASEMENT(S) OVER THE LAND MARKED F AND G (T 4705319)
SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED H (T 4705319)
SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B
SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

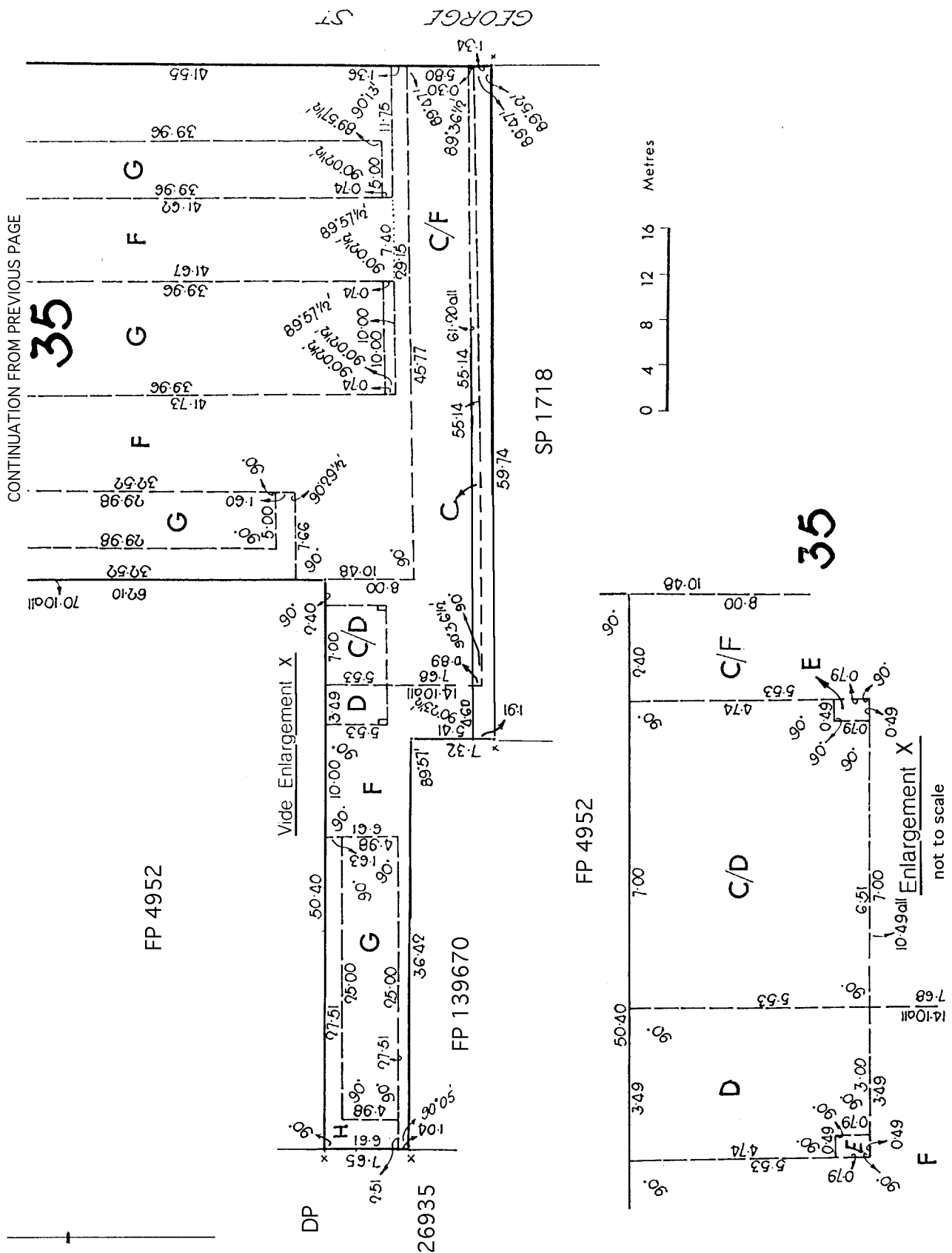
Schedule of Dealings

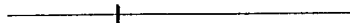
Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS (SINGLE COPY ONLY)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL







REAL PROPERTY ACT, 1886



South Australia

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.



Certificate of Title - Volume 5570 Folio 115

Parent Title(s)	CT 5484/688			
Creating Dealing(s)	SC 8458272			
Title Issued	31/08/1998	Edition 3	Edition Issued	18/05/2012

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 18 FILED PLAN 3667
IN THE AREA NAMED NORWOOD
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A AND B (T 4705319)

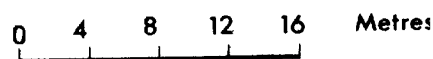
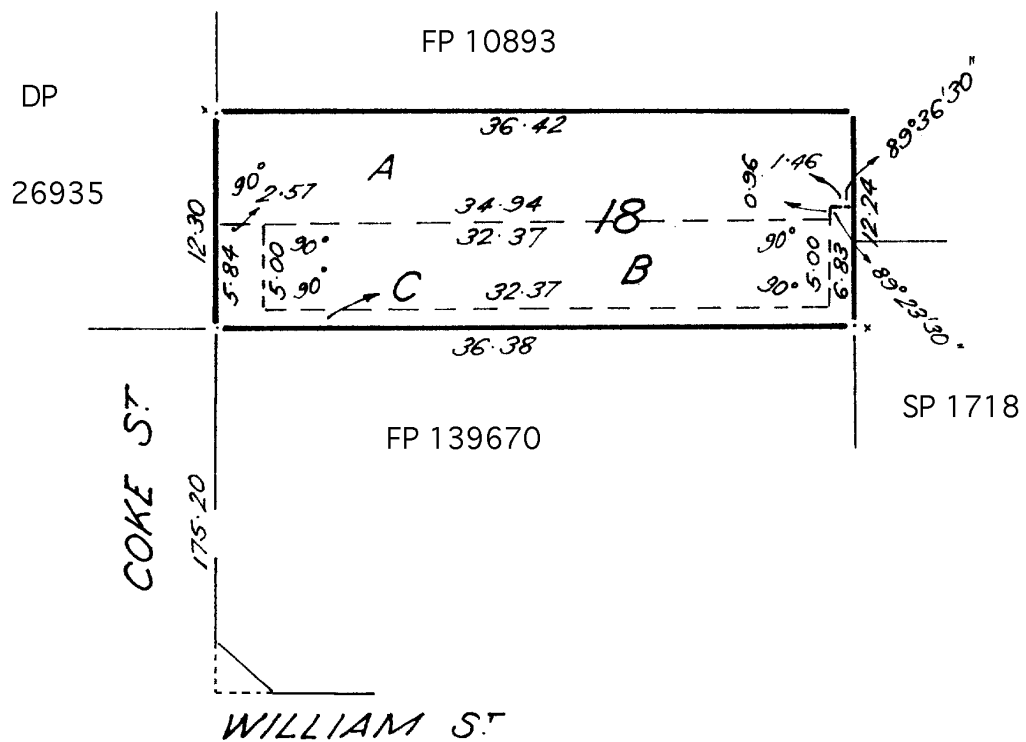
SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED C (T 4705319)

Schedule of Dealings

Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS (SINGLE COPY ONLY)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



REAL PROPERTY ACT, 1886



South Australia

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.



Certificate of Title - Volume 6132 Folio 733

Parent Title(s)	CT 5570/112, CT 5949/998		
Creating Dealing(s)	VE 11772918		
Title Issued	03/03/2014	Edition 1	Edition Issued 03/03/2014

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 107 DEPOSITED PLAN 49417
IN THE AREA NAMED NORWOOD
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED C TO THE MINISTER FOR INFRASTRUCTURE (V 4553960)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED N FOR WATER SUPPLY PURPOSES TO THE SOUTH AUSTRALIAN WATER CORPORATION (VM 8484219)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED P FOR SEWERAGE PURPOSES TO THE SOUTH AUSTRALIAN WATER CORPORATION (VM 8484219)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED J AND K TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (TG 10264788)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (T 2560655 AND T 4255202)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B (T 2607469)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED E AND F (T 4705319)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED G (T 4705319)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED C (GRO NO.103 BOOK 148)

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED D

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED H APPURTENANT ONLY TO THE LAND MARKED X (GRO NO.103 BOOK 148)

Schedule of Dealings

Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS

Notations

Dealings Affecting Title NIL

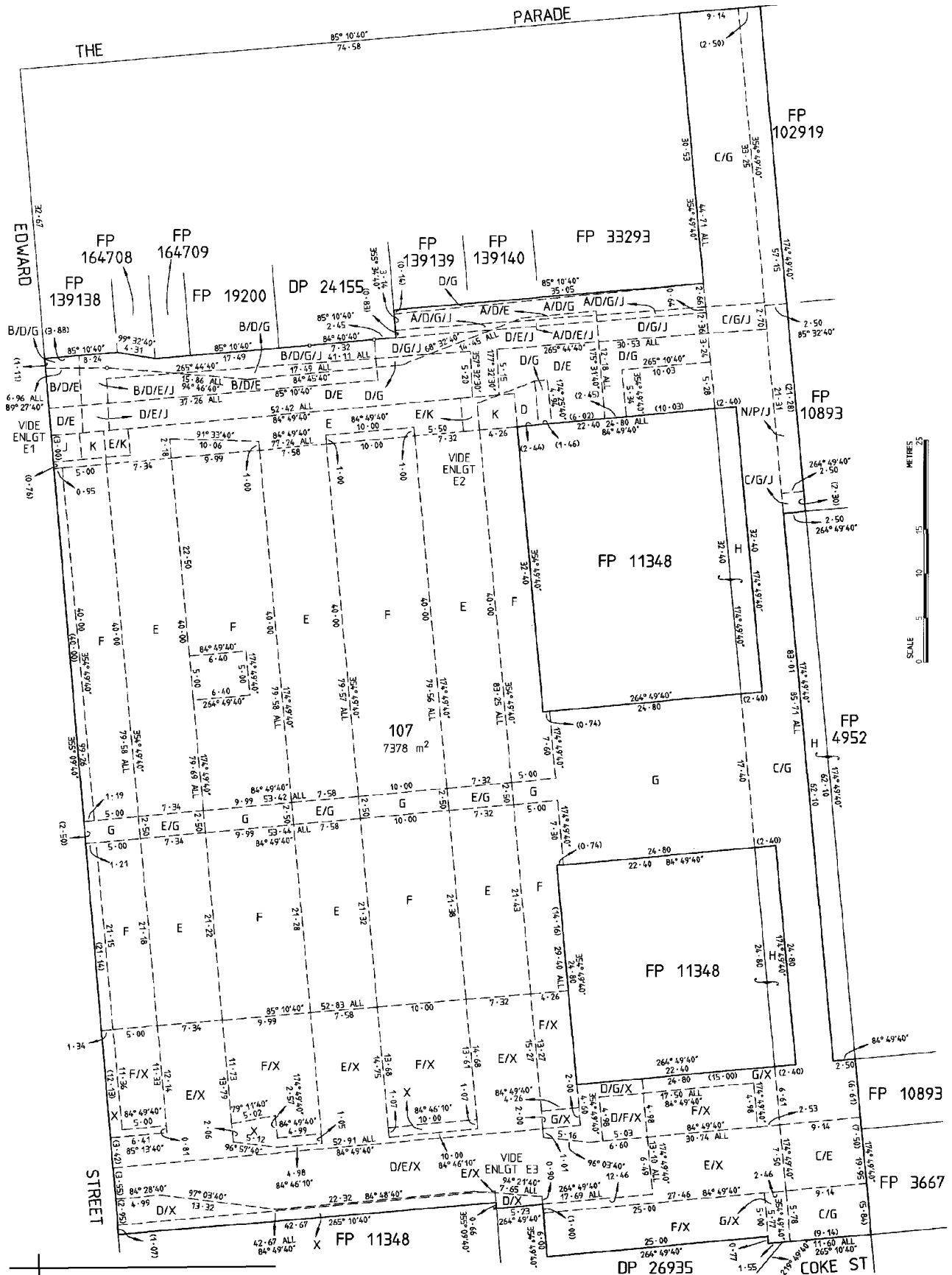
Priority Notices NIL

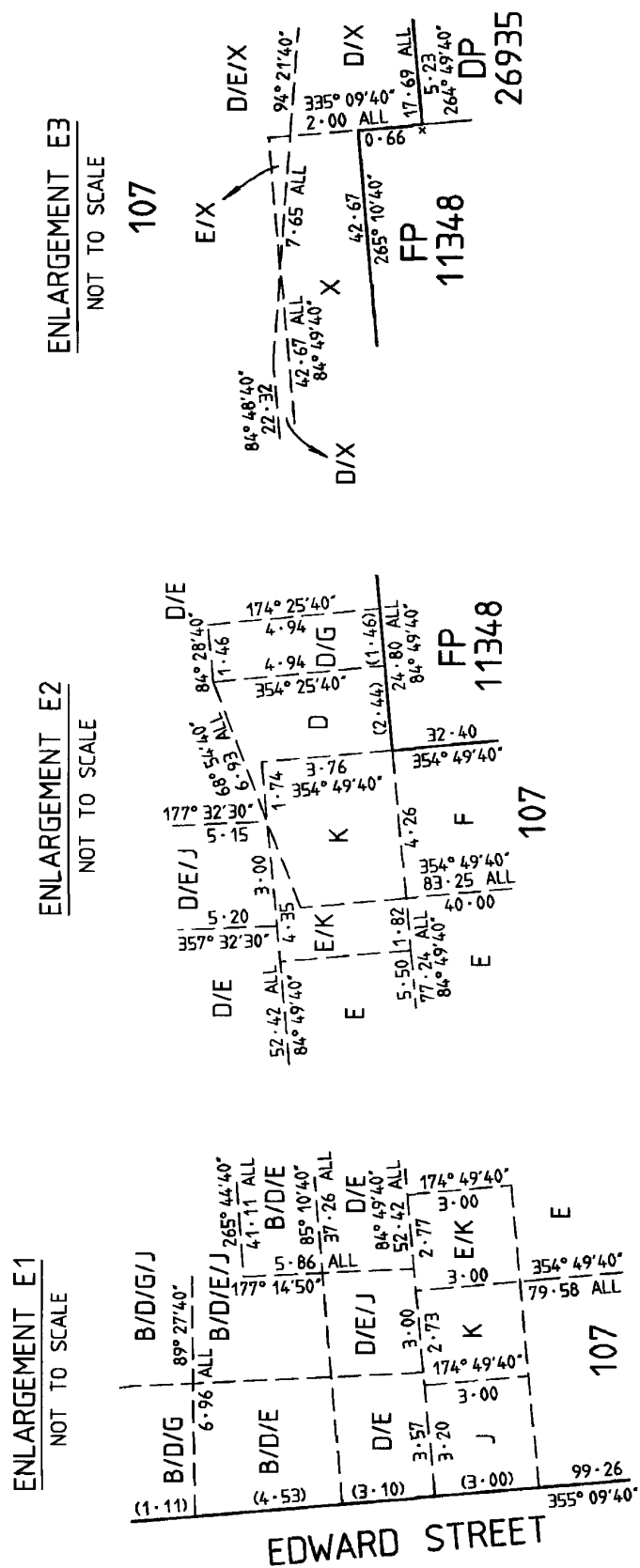
Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G103/2005

Administrative Interests NIL





REAL PROPERTY ACT, 1886



South Australia

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.



Certificate of Title - Volume 6132 Folio 762

Parent Title(s)	CT 5570/112			
Creating Dealing(s)	VE 11772918			
Title Issued	03/03/2014	Edition 1	Edition Issued	03/03/2014

Estate Type

FEE SIMPLE

Registered Proprietor

COLES GROUP PROPERTY DEVELOPMENTS LTD. (ACN: 004 428 326)
OF 800 TOORAK ROAD TOORONGA VIC 3146

Description of Land

ALLOTMENT 102 FILED PLAN 11348
IN THE AREA NAMED NORWOOD
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (V 4504995)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED A (GRO NO.103 BOOK 148)

TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED D AND E (T 4705319)

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED B APPURTENANT ONLY TO THE LAND MARKED X (GRO NO.103 BOOK 148)

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED F (T 47055319)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

Schedule of Dealings

Dealing Number	Description
8910339	ENCUMBRANCE TO THE CORPORATION OF THE CITY OF NORWOOD, PAYNEHAM AND ST. PETERS

Notations

Dealings Affecting Title NIL

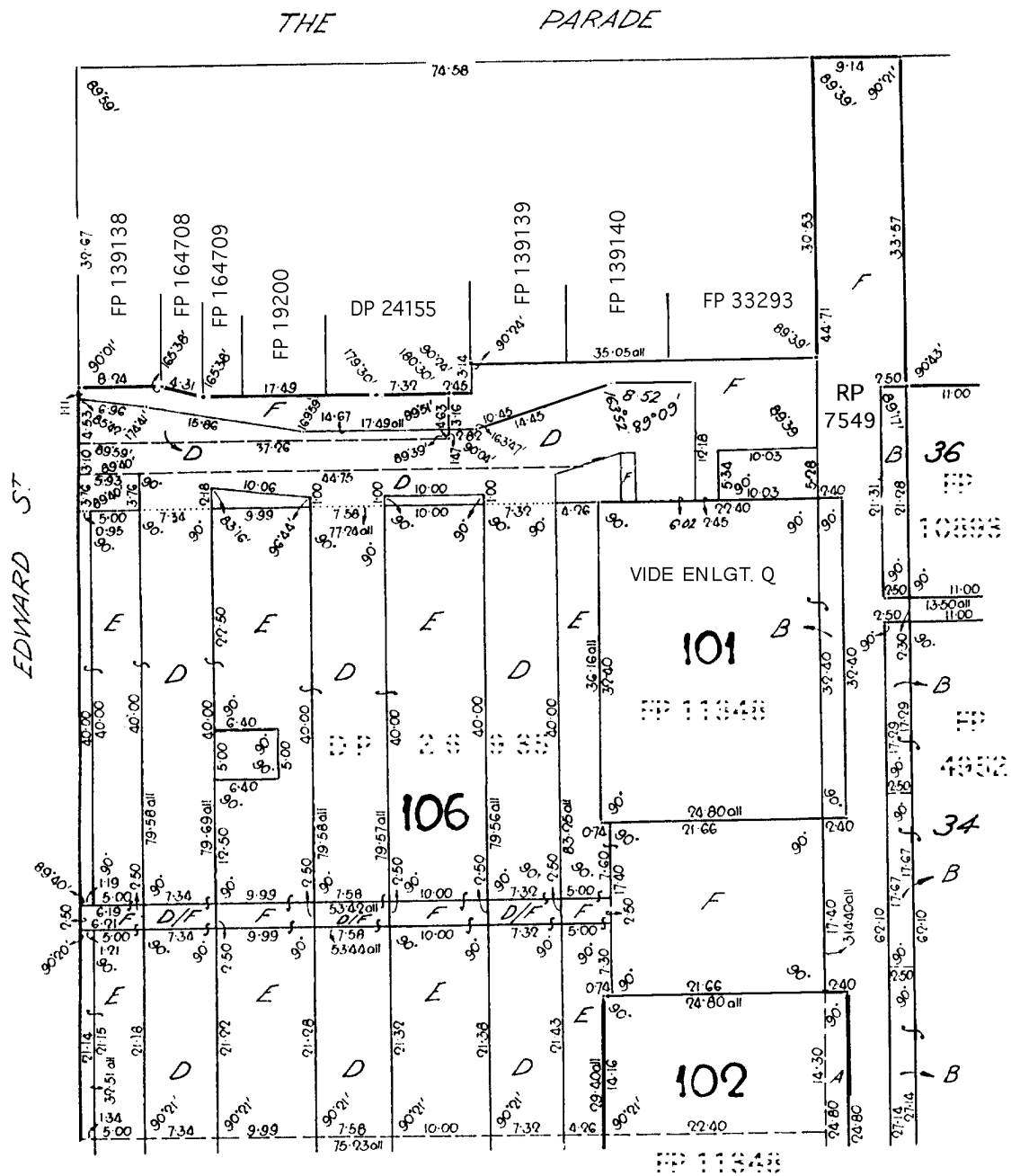
Priority Notices NIL

Notations on Plan NIL

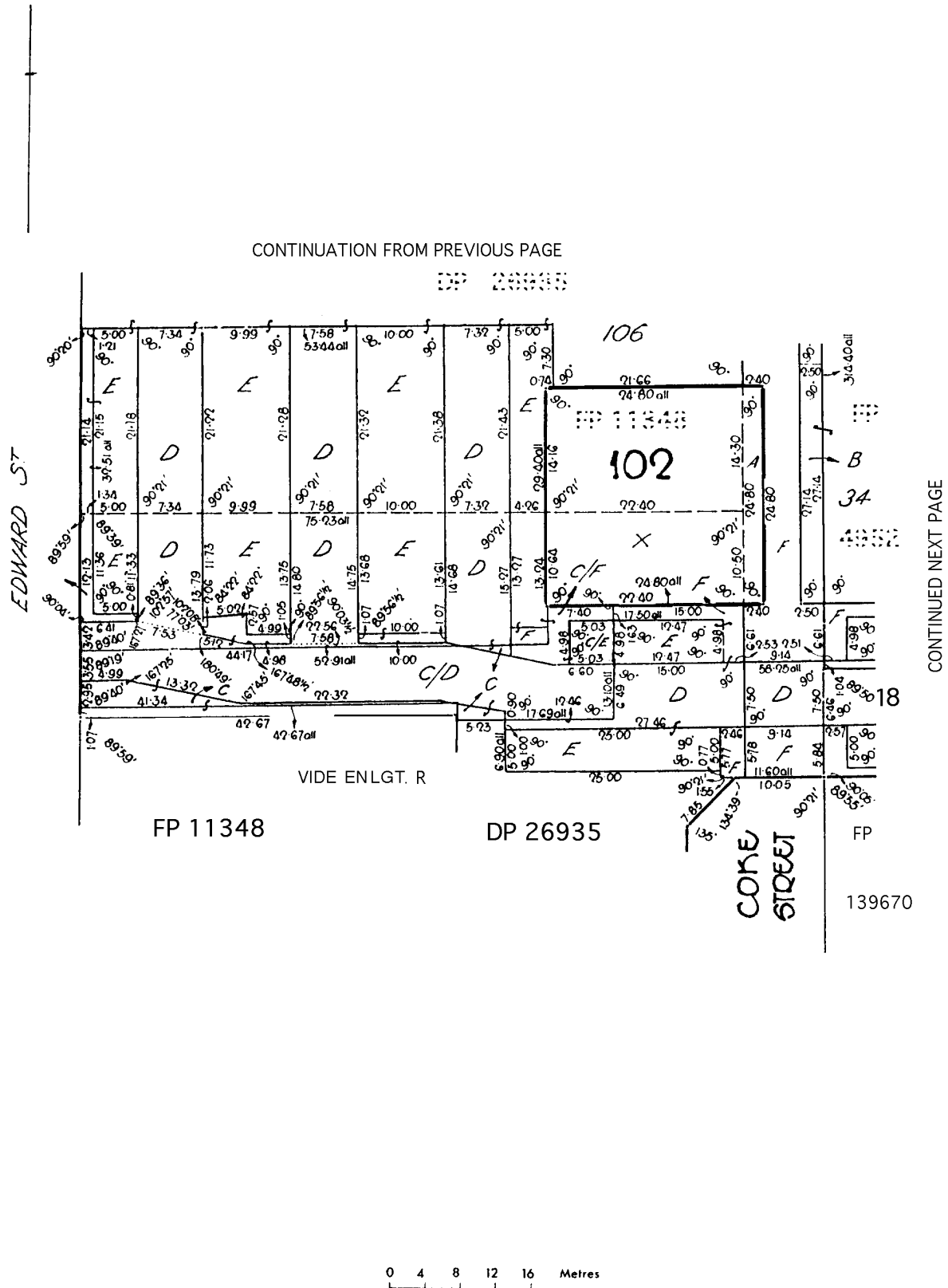
Registrar-General's Notes

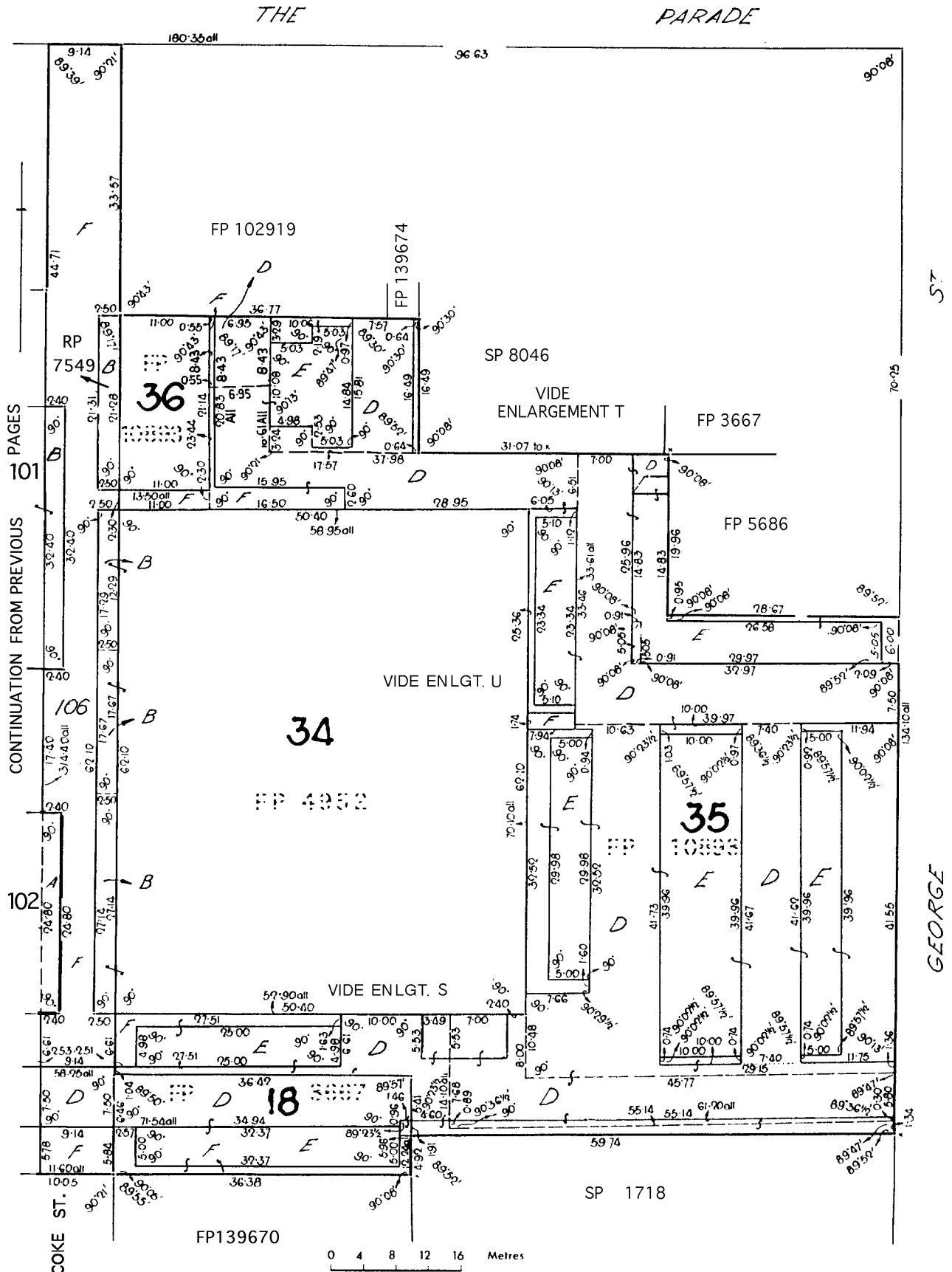
PLAN FOR LEASE PURPOSES VIDE G619/1988
PLAN FOR LEASE PURPOSES VIDE G69/1979

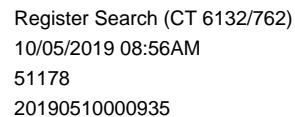
Administrative Interests NIL



CONTINUED NEXT PAGE







8910339



Series No.	Prefix
S	E

NOTES

1. This form is designed to suit the simplest type of Encumbrance. Lending institutions which prefer to have encumbrance forms printed privately may do so, but proposed forms must be submitted to the Registrar-General and will not be acceptable for registration unless the format is approved.
2. All panels to be completed. If insufficient space use Annexure Form B.1. This panel should then only contain the words "See Annexure A (or as the case may be) attached".
3. State whether the whole or portion only of the land comprised in the Certificate of Title and/or Crown Lease. If portion only, specify.
4. Insert "estate in fee simple", "estate as Crown Lessee" or "estate as mortgagee" (as the case may be). If lease or mortgage state registered number.
5. List encumbrances which affect the estate being encumbered.
6. If address has changed identify as "formerly.....".
7. If tenants in common in unequal shares, specify shares.
8. If the executing party is a natural person execution should read "SIGNED by the encumbrancer in the presence of". The witness must be a disinterested party. If an executing party is a body corporate execution must conform to any prescribed formalities relating to the affixing of the common seal.
9. The short form of proof is applicable where the witness is an authorised functionary.
10. The long form of proof is to be used where the witness is not an authorised functionary. The address and occupation of the witness must be stated.

**SINGLE COPY
ONLY**

DELIVERY INSTRUCTIONS (Agent to complete)
PLEASE DELIVER THE FOLLOWING ITEM(S) TO THE
UNDERMENTIONED AGENT(S)

ITEM CT/CL REF.	AGENT CODE

LANDS TITLES REGISTRATION
OFFICE
SOUTH AUSTRALIA

MEMORANDUM OF ENCUMBRANCE

FORM APPROVED BY THE REGISTRAR-GENERAL

CERTIFIED CORRECT FOR THE PURPOSES
OF THE REAL PROPERTY ACT 1996

[Signature]
Solicitor/Registered Conveyancer/Encumbrancer
R. G. HAMMOND

BELOW THIS LINE FOR OFFICE USE ONLY

Date 19 JUN 2011	Time 1555
FEES	
R.G.O.	POSTAGE ADVERT NEW C.T.
<i>12</i>	

19 JUN 1900 160113382L.T.O.

82.00

48

EXAMINATION

CORRECTION 147.00	PASSED <i>[Signature]</i>
-----------------------------	------------------------------

BELOW THIS LINE FOR AGENT USE ONLY

AGENT CODE

Lodged by:

Correction to: **NORMAN WATERHOUSE**

59
NWAM

TITLES, CROWN LEASES, DECLARATIONS ETC. LODGED WITH
INSTRUMENT (TO BE FILLED IN BY PERSON LODGING)

1.
 2.
 3.
 4.
 5.
- Assessor

PLEASE ISSUE NEW CERTIFICATES OF TITLE AS FOLLOWS

1.
2.
3.
4.
5.

DATED THIS

13th

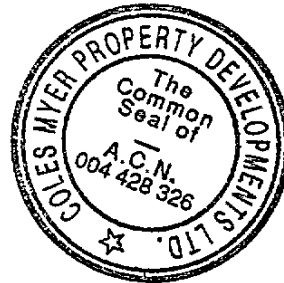
DAY OF

June

2000

EXECUTION AND
ATTESTATION
(See Note 8)

THE COMMON SEAL of *WE*
COLES MYER PROPERTY
DEVELOPMENTS LTD
was hereunto affixed in accordance
the presence of with its Constitution)

*KE*

KEVIN JOHN ELKINGTON

..... Director

..... Director/Secretary

28 AUG 2000

REGISTERED/...../19

[Signature]
pro REGISTRAR-GENERAL

MEMORANDUM OF ENCUMBRANCE

CERTIFICATE(S) OF TITLE
BEING ENCUMBERED
(See Note 3)

The whole of the land comprised in Certificates of Title Register Book
FIRST Volume 5570 Folio 110
SECONDLY: Volume 5570 Folio 111
THIRDLY: Volume 5570 Folios 112, 114, 115 and Volume 5615 Folio 926
FOURTHLY: Volume 5570 Folio 112

ESTATE AND INTEREST
(See Note 4)

In fee simple

ENCUMBRANCES
(See Note 5)

FIRST: Lease No. 4705343
SECONDLY: Leases No'd 8477012, 8480925 and 8576276
THIRDLY: NIL
FOURTHLY: 8878466

Lease dated 19/6/00 & lodged
Anticipatoriously
herein.

ENCUMBRANCER
Full Name and Address
(See Note 6)

COLES MYER PROPERTY DEVELOPMENTS LTD (ACN 004 428 326) of 800 Toorak Road Tooronga VIC 3146

COMMISSIONER OF STATE TAXATION - TIMBER
SA STAMP DUTY PAID \$0.00
ORIGINAL WITH 0 Copies
EXEMPT / NOT CHARGEABLE
REF NO: 23475
AUTH: MMH 531 1 19/06/2000

ENCUMBRANCEE
Full Name and Address
(See Note 7)

THE CORPORATION OF THE
CITY OF NORWOOD, PAYNEHAM & ST PETERS of PO Box 204 Kent Town SA 5071

(a) State the term
of the annuity. If
for life use the
words "during his
lifetime"

THE ENCUMBRANCER ENCUMBERS THE ESTATE AND INTEREST IN THE LAND ABOVE
DESCRIBED FOR THE BENEFIT OF THE ENCUMBRANCEE SUBJECT TO THE
ENCUMBRANCES AND OTHER INTERESTS AS SHOWN HEREON WITH AN ANNUITY OF

See below

(a) TO BE PAID TO THE ENCUMBRANCEE

(b) State the
times appointed
for payment of
the annuity and
any special
covenants

(b) AT THE TIMES AND IN THE MANNER FOLLOWING

The Encumbrancer HEREBY ENCUMBERS the estate and interest herein specified in the land above described (hereinafter called "the said Land") to the intent that it shall be binding on the Encumbrancer and upon its successors and assigns and on each and every part or portion of the said Land and on all successive owners occupiers transferees and tenants thereof for the benefit of the Encumbrancee with the payment of a yearly rent charge of Ten Cents (10c) payable (if demanded) on the first day of January in each and every year commencing on the first day of January following the date hereof and expiring on the 31st day of December 2089 to the intent that the Encumbrancee shall hold the said rent charge in fee simple AND with the performance and observance of the covenants terms and conditions by the Encumbrancer hereinafter contained AND the Encumbrancer hereby covenants with the Encumbrancee (in addition and without prejudice to the covenants on the part of the Encumbrancer and the powers rights and remedies of the Encumbrancer implied herein under and by virtue of the Real Property Act 1886 except insofar as the same are hereby expressly or implied varied or modified) in the manner following that is to say:- See following pages

IT IS COVENANTED BETWEEN THE ENCUMBRANCER AND ENCUMBRANCEE as follows:


(Covenants, where not deposited, to be set forth on insert sheet(s) and securely attached) See following pages

1. Interpretation

1.1 Definitions

In the interpretation of this Encumbrance unless the contrary intention appears where the context so requires or admits the following expressions shall have the following meanings:

1.1.1 "Additional Land" shall mean a portion of the said Land being the whole of the land comprised in Certificate of Title Register Book Volume 4179 Folio 302 Volume 4179 Folio 295 and Allotment 106 in DP 26935 being portion of the land comprised in Certificate of Title Register Book Volume 4179 Folio 303;

1.1.2 "the Encumbrancee" shall mean and include the said ^{THE CORPORATION OF THE} CITY OF NORWOOD, PAYNEHAM & ST PETERS together with its successors and assigns; 

1.1.3 "the Encumbrancer" shall mean and include the said COLES MYER PROPERTY DEVELOPMENTS PTY LTD together with its successors and assigns;

1.1.4 "the said Land" shall mean all of the land hereinbefore so described;

1.1.5 "Encumbrancer's Land" shall mean a portion of the said Land being the whole of the Land comprised in Certificate of Title Register Book Volume 4179 Folios 299, 300 and 301;

1.1.6 "Settlement Date" shall mean the date of the settlement of a certain sale and purchase by WESSON NOMINEES PTY LTD from the Encumbrancee of the Additional Land;

1.2 General

In this Encumbrance unless the contrary intention appears:-

1.2.1 reference to a statute shall include all amendments for the time being in force and any other statute enacted in substitution therefor and the regulations or by-laws for the time being under that statute and any notice demand order direction requirement or obligation under or pursuant to that statute or those regulations or by-laws and the expressions "statute" "Act" and "Act of Parliament" shall mean any State or Federal statute and the regulations or by-laws for the time being in force thereunder and any notice demand order direction requirement or obligation issued made given or imposed under or pursuant to any statute regulation or by-law;

1.2.2 words importing the singular shall embrace the plural and words importing one gender shall embrace the other gender and vice versa respectively;

1.2.3 any reference to a person shall be deemed to include a corporate body and vice versa;

1.2.4 headings are for convenience of reference only and shall not affect the construction or interpretation of the covenants of this Encumbrance.

2. Rent Charge

That the Encumbrancer will pay to or for the benefit of the Encumbrancee during the continuance of this Encumbrance the said yearly rent charge in the sum of Ten Cents (10c) (if demanded) on the first day of January following the date hereof and thereafter on each succeeding first day of January provided that the Encumbrancee shall not demand payment of the said yearly rent charge if and so long as the Encumbrancer and the Encumbrancer's successors in title shall duly perform and observe all the covenants terms and conditions herein set forth (and the burden of proving such performance and observance shall be with the Encumbrancer) and provided always that none of the foregoing provisions for or in respect of payment of the said annuity or rent charge shall in any way affect or prejudice the rights of the Encumbrancee to an injunction to restrain any breach of the covenants terms and conditions therein set forth or to damages for any such breach.

3. Maintenance of Existing Carparking Spaces

The Encumbrancer shall not in any event reduce the number of carparking spaces situated upon the Additional Land as at the Settlement Date (which number is hereby deemed to be 268) and shall ensure that all such carparking spaces remain available for use by the public in the same manner and upon the same terms as such carparking spaces are available for such public use as at the Settlement Date.

4. Provision of Additional Carparking Spaces

In the event that the Encumbrancer desires to redevelop the said Land the Encumbrancer shall be obliged to provide in respect of each additional square metre of floor area comprised in such redevelopment over and above the total floor area comprising the development situated upon the Encumbrancer's Land as at the Settlement Date (which such area is hereby deemed to be 3768 square metres) such additional number of carparking spaces over and above the number of carparking spaces situated upon the Additional Land as at the Settlement Date (being 268) in accordance with a ratio of seven (7) carparking spaces per 100 square metres of such additional floor area which such additional carparking spaces shall be provided either upon the said Land or upon land in the ownership of the Encumbrancer which is contiguous to the said Land and shall be and remain available for use by the public in the same manner and upon the same terms as the carparking spaces situated upon the said Land as at the Settlement Date are available for such public use as at the Settlement Date.

5. Default

If default shall be made by the Encumbrancer in payment of any moneys becoming due hereunder or in the observance or performance of any covenants stipulations or conditions herein contained and such default shall be continued for the space of seven (7) days it shall be lawful for the Encumbrancee immediately thereupon or at any time thereafter to serve upon the Encumbrancer the notice mentioned in Section 132 of the Real Property Act, 1886 AND if any such default shall be continued for a further period of ninety (90) days after service of such notice it shall be lawful for the Encumbrancee to exercise with reference to the said Land hereby encumbered or

intended so to be or in any part of such land the power of sale and all other powers and authorities conferred upon or reserved or accruing to the Encumbrancee by virtue of these presents and the Real Property Act, 1886 AND IT IS HERBY AGREED AND DECLARED that any demand notice or requisition to be served or made or given upon or to the Encumbrancer by the Encumbrancee shall be deemed to be duly served or made or given if the same shall be served at its registered office in the said State of South Australia or enclosed in an envelope addressed to the Encumbrancer's address hereinbefore appearing and posted at any Post Office in the said State of South Australia. Any such demand notice or requisition shall take effect and be deemed to have been duly served upon the same day that it was so served left or posted as aforesaid.

6. Method of Sale of Land By Encumbrancee

The Encumbrancee expressly covenants and agrees with the Encumbrancer that notwithstanding any rule of law to the contrary the Encumbrancee shall be entitled in the event of the exercise of the power of sale referred to in Clause 5 hereof:-

- 6.1 to purchase the said Land and for that purpose to bid at any public auction of the said Land or to make a tender for or submit an offer in the event of other public offering for sale of the said Land for the purpose as foresaid;
- 6.2 to offer the said Land for sale subject to a prospective purchaser of the said Land granting a Memorandum of Encumbrance in priority to any other interest to be granted in respect of the said Land by such prospective purchaser in the terms of this Memorandum of Encumbrance or like terms taking into account the circumstances of the said Land at the time of such sale, the proposed works required to be carried out in order to complete the Approved Development or a similar development and in the other circumstances then relevant to any such sale.

7. Encumbrancees' Power to Remedy Default

That if the Encumbrancer shall make default in the due observance or performance of any covenant term condition or agreement to be observed or performed by the Encumbrancer under and by virtue of this Encumbrance or implied herein or in the event that the Encumbrancer shall have committed a breach of any warranty on the part of the Encumbrancer herein contained or implied it shall be lawful and the Encumbrancee is hereby authorised for the Encumbrancee to do or procure the doing of all acts matters and things necessary to make good such default or breach to the satisfaction of the Encumbrancee in all things (but without any obligation upon the Encumbrancee so to do) without prejudice to any other right power authority or remedy of the Encumbrancee and any and all moneys which the Encumbrancee shall pay sustain incur or become liable to pay to any third party pursuant to this Clause together with all costs and expenses properly incurred by or on behalf of the Encumbrancee in relation to the making good of such default or breach shall be payable forthwith upon demand by the Encumbrancer to the Encumbrancee.

8. Release

The Encumbrancer and its successors in title shall be successively released and discharged from the payment of the said rent charge and from the observance and performance of the covenants and other stipulations herein contained and implied

forthwith upon ceasing to be registered as the proprietor of the said Land to the intent that the said rent charge and covenants and other stipulations shall be binding only upon the registered proprietor for the time being of the said Land.

9. Sale of the said Land

The Encumbrancer will not enter into any contract to sell and will not otherwise dispose of its estate or interest in the said Land or any part or portion thereof without first having obtained from the intending Purchaser or Transferee of the said Land or such part or portion thereof the subject of sale or transfer a binding agreement to execute and lodge for registration under the provisions of the Real Property Act 1886 (as amended) forthwith after the registration of the Memorandum of Transfer in respect of the said Land or such part or portion thereof as is subject to sale or transfer a Memorandum of Encumbrance in the same form as this instrument and containing the same covenants and other stipulations (mutatis mutandis) with the substitution of-

- 9.1 the name address and description of the intending purchaser or transferee of the said Land or such part or portion thereof subject to the sale or transfer as Encumbrancee;
- 9.2 a description of the said Land or the relevant part or portion thereof subject to the sale or transfer in a form required for registration;
- 9.3 such further or other consequential amendments as may be required for registration purposes.

10. Costs

The costs of and incidental to the negotiation preparation execution and registration of this Encumbrance and any discharge hereof (including all stamp duty and registration fees) shall be borne by the Encumbrancer.

SITE PLAN

THE PARADE

EDWARD STREET

GEORGE STREET

COKE STREET

Plan of Easements and Rights of Way

Allotment 34 in F4952,
Allotment 35 in F10893,
Allotment 107 in D49417,
Allotment 101 and 102 in F11348

Hundred of Adelaide
in the area named
NORWOOD

CT5570/110, CT5570/114, CT 5570/115,
CT6132/733, CT5570/111, CT6132/762

0 10 20 30 40 50
SCALE METRES

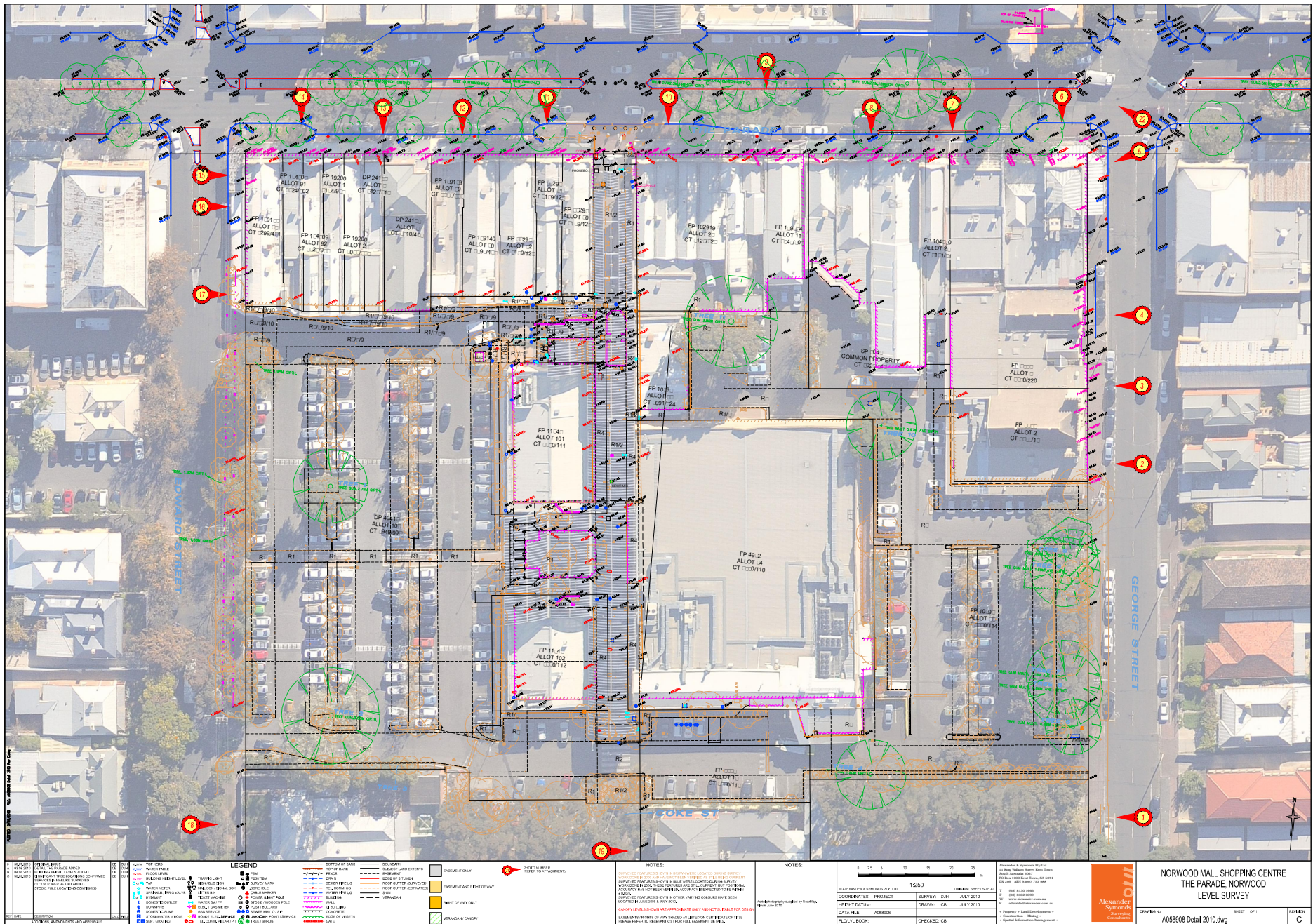
Alexander & Symonds Pty.Ltd.

11 KING WILLIAM STREET, KENT TOWN
P.O. BOX 1000 KENT TOWN 5071
Tel (08) 8130 1666 Fax (08) 8362 0099 A.B.N. 93 007 753 988

REFERENCE A011119 EASEMENTS AND PARCELS

JLG 05/06/2019

PRELIMINARY



PLANNING REPORT

DEMOLITION AND REDEVELOPMENT OF NORWOOD MALL SHOPPING CENTRE
AT 166 THE PARADE NORWOOD



Prepared by
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October 2019



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1.0 INTRODUCTION

This Planning Report has been prepared in relation to the accompanying application by 166 The Parade Pty Ltd to redevelop the Norwood Mall Shopping Centre at 166 The Parade Norwood.

The proposal is shown in the accompanying set of drawings prepared by Studio Nine Architects – see **Attachment A**.

The Planning Report includes an assessment of the proposal against the relevant provisions of the Development Plan and concludes that the proposal is deserving of Development Plan Consent.

2.0 PRE-LODGE MENT SERVICE

The proponent elected to engage in the Department's pre-lodgement service. This involved two Pre-lodgement Panel (PLP) sessions and two Design Review Panel (DRP) sessions.

The outcome of the second DRP session on 18 September 2019 was documented in a letter to the proponent from the Government Architect dated 27 September 2019 – see **Attachment B**.

The proposal has been amended to the greatest extent possible to address the Government Architect's suggestions.

3.0 THE SITE

The site is irregularly shaped with frontage to The Parade, George Street, Edward Street and Coke Street. It has an overall area of 17,011 square metres (1.7 hectares).

The site is made up of six (6) contiguous Certificates of Title:

- CT 5570/115: Allotment 18;
- CT 5570/110: Allotment 34;
- CT 5570/114: Allotment 35;
- CT 5570/111: Allotment 101;
- CT 6132/762: Allotment 102; and
- CT 6132/733: Allotment 107.

The site is constrained by easements and other endorsements which impose limits on the site's development potential that could otherwise be realised by the Development Plan.

Current Certificates of Title, the Plan of Easements and Rights of Way and the Level Survey are at **Attachment C**.



Encumbrance 8910339 is furthermore registered on each Title. The Encumbrance binds the owner of the allotment (the Encumbrancer) and the Norwood Payneham & St Peters Council (the Encumbrancee). The Encumbrance provisions which are particularly relevant to the proposal are Clauses 3 and 4 which state:

3. *Maintenance of Existing Carparking Spaces*

The Encumbrancer shall not in any event reduce the number of carparking spaces situated upon the Additional Land as at the Settlement Date (which number is hereby deemed to be 268) and shall ensure that all such carparking spaces remain available for use by the public in the same manner and upon the same terms as such carparking spaces are available for such public use as at the Settlement Date.

4. *Provision of Additional Carparking Spaces*

In the event that the Encumbrancer desires to redevelop the said Land the Encumbrancer shall be obliged to provide in respect of each additional square metre of floor area comprised in such redevelopment over and above the total floor area comprising the development situated upon the Encumbrancer's Land as at the Settlement Date (which such area is hereby deemed to be 3768 square metres) such additional number of carparking spaces over and above the number of carparking spaces situated upon the Additional Land as at the Settlement Date (being 268) in accordance with a ratio of seven (7) carparking spaces per 100 square metres of such additional floor area which such additional carparking spaces shall be provided either upon the said Land or upon land in the ownership of the Encumbrancer which is contiguous to the said Land and shall be and remain available for use by the public in the same manner and upon the same terms as the carparking spaces situated upon the said Land as at the Settlement Date are available for such public use as at the Settlement Date.

The proposal has been designed to satisfy the Encumbrance requirements, and more particularly to satisfy the resolution which was passed by Full Council at its meeting held on Tuesday 8 October 2019.

A full-line Coles supermarket and an associated section of The Mall covers the site. The remainder of the site is set aside for off-street parking in two main areas – one carpark adjacent to Edward Street and the other adjacent to George Street. The George Street carpark is screened by a landscaped earth mound alongside George Street.

The Edward Street carpark is landscaped throughout with shade trees and is effectively screened from Edward Street by landscaping in the street verge.



A smaller carpark (11 spaces) is situated between the northern side of the supermarket and the rear yard of shops fronting The Parade. The carpark surrounds a Significant Tree and can be accessed from George Street as well as from the Mall and from a narrow laneway to The Parade.

James Coke Park is located immediately south of the site. This well maintained 'pocket park' can be accessed from the site or from Coke Street. It is popular with shoppers and nearby residents alike.



Coke Park looking south from development site

4.0 SITE CONTEXT

The site is surrounded by a mixture of specialty shops with frontage to The Parade, supermarkets including Coles supermarket behind these shops and a Foodland supermarket on the northern side of The Parade. Low-rise residential development is situated behind the shops with frontage to The Parade.

The District Centre (Norwood) Zone straddles both sides of The Parade. South of this Zone is the Residential Character (Norwood) Zone. The development site is within that part of the District Centre (Norwood) Zone that is in the Retail Core Policy Area. The Retail Core Policy Area is described in the Desired Character statement as:

The Retail Core Policy Area is the retail 'heart' of the District Centre (Norwood) Zone and will continue to provide a range of primarily retail uses including specialty shops, supermarkets, discount department stores, restaurants and cafes, all within an integrated pedestrian environment. The provision of dwellings above ground-level retailing is desirable, as are business uses such as offices and consulting rooms.

The Retail Core Policy Area is broken down into three areas A, B and C. The development site is in Area C, which the Desired Character statement identifies as providing:



“ . . . a significant opportunity for development of a discount department store or other large floor area retail facility, specialty shops and medium to high density residential development located above ground level, provided that an appropriate built form transition is achieved, scaling down towards the Residential Zone from the south and development along Edward and George Streets.

The redevelopment of the existing supermarket will contribute to an increase in the provision of public car parking, in order to match the demand associated with the anticipated increase in retail activity within the Area.

. . .

Development adjacent to the George Street frontage will be limited in height to three (3) storeys, which may be built to the front allotment boundary. Land uses will be commercial in nature, as any commercial loading/unloading facilities associated with the development of the site are likely to be accessed via George Street.

. . .

. . . In order to minimise the visual and overshadowing impacts of tall buildings, the mass of the upper levels of a building or buildings (exceeding three (3) storeys in height) should be ‘broken up’ into well-articulated tower elements, which will be set back an appropriate distance from the southern boundary of the Area”.

Pedestrian access behind The Parade and James Coke Park will continue to be maintained and will not be obstructed through the placement of buildings and/or other structures (either fixed or moveable). The northern section of this pedestrian access will remain uncovered, in order to maintain an open feel.

Development should improve east/west pedestrian connectivity through Area C and the activation of the rear of buildings fronting The Parade will be encouraged.

5.0 THE PROPOSAL

5.1 General Description

It is proposed to:

- demolish the Coles supermarket and associated loading docks;
- demolish that section of the Mall adjacent to the supermarket frontage;
- remove trees and other vegetation from the site, including three (3) significant trees; and
- redevelop the cleared site for a mixed use, medium rise development as described below.

The non-residential component will comprise:

- a new supermarket of 3,526 square metres;
- specialty retail outlets of 516 square metres;
- a medical centre of 470 square metres; and
- an office of 615 square metres.

The above floor spaces are expressed as gross leasable area (GLA). The proposal’s GLA will therefore be 5,319 square metres.

Associated parking for 347 vehicles will be provided for these non-residential components.



5.2 Staging sequence

It is proposed to develop the site in 2 stages:

- Stage 1 will involve demolition of existing buildings, site works and services to be removed, plus excavation and associated retaining walls, piling, capping beams and footings for columns, the central services core and load-bearing precast walls;
- Stage 2 will involve construction of the remainder of the development through to practical completion.

5.3 Redevelopment Elements

The site will be redeveloped to accommodate an enlarged Coles Supermarket, generally in the same location as the existing supermarket, together with specialty shops facing onto the Mall which will be rebuilt southwards to face Coke Park.

The Mall extension has been designed to incorporate access via stairs and a travelator to the upper level commercial tenancies.

Residential accommodation will be located on the podium above the commercial tenancies, as well as in an apartment building facing George Street. A total of 77 apartments and townhouses in various configurations and bedroom numbers are proposed, as detailed in Table 5.3 below.

Table 5.3: Residential Numbers

Dwelling Type	1 Bedroom	2 Bedroom	3 Bedroom
Podium Apartments	2	38	4
Podium Townhouses	-	16	8
George Street Apartments	-	3	6
Total	2	57	18

5.4 Building Height

The tallest buildings are represented by the two residential 'towers', which will be 31.8 metres above ground level to top of roof level. This excludes the aluminium mesh plant screens on top of each tower roof. Both towers exceed the maximum 25.5 metre building height range specified on Concept Plan Figures DC/1 and DC/4 of the Development Plan.

Importantly, the residential towers are situated as far away from the lower-rise residential properties to the south of the site with frontage to George Street, Coke Street and Edward Street. In this regard, all podium apartments and townhouses have been designed generally in accordance with the 30-degree plane diagram in Figure 1 for District Centre (Norwood) Zone PDC 9. The podium towers have also been carefully designed and sited in accordance with Zone PDC 10 which applies to buildings:



"... located above the maximum allowable podium/street wall height provided the built form will:

- a) reinforce a lower scale (2 or 3 storey) building form along the primary and secondary street frontages;*
- b) minimise overshadowing of the public realm; and*
- c) maintain the prominence and integrity of heritage buildings".*

The 3D renders below and the shadow diagrams in the drawing set show the extent to which the podium towers satisfy PDC 10.



3D render (George Street)



3D render (George Street opposite direction)



5.5 Traffic and Parking

Cirqa was engaged by the proponent to provide traffic and parking advice for the proposal. Cirqa's advice is incorporated into the proposal design.

Cirqa notes that the proposal will be provided with a total of 440 off-street parking spaces, allocated as:

- 93 spaces reserved for the residential component (77 townhouses and apartments); and
- 347 spaces for the non-residential component.

Cirqa notes that the provision of 440 parking spaces exceeds the Development Plan's theoretical requirement for between 262 and 422 parking spaces based on a parking rate of between 3 to 6 spaces/100 square metres of GLA. Cirqa also notes that the parking Encumbrance requires 347 non-residential parking spaces. With 347 spaces provided, the proposal satisfies the parking Encumbrance.

A total of 120 bicycle parking spaces are provided across the site, which exceeds the Development Plan's requirement for 111 such spaces. Cirqa also observes that significantly more bicycles than this could be stored inside the apartments if so required.

Vehicles generated by the proposal (residents, visitors, retail customers and employees) can also be readily accommodated in the surrounding road network with minimal impact on these roads or the two closest roundabouts.

Cirqa's Traffic and Parking Assessment is at **Attachment D**.

Council at its meeting held on 8 October resolved to amend the parking Encumbrance as follows:

Cr Moore moved:

1. *That the Council adopts the position that Clause 3 of the car parking encumbrance be amended so as to require that all of the commercial car parking spaces on the subject land, be available to the public free of charge for the first two (2) hours.*
2. *That the Council adopts the position that Clause 4 of the car parking encumbrance be amended to read as follows:*
 - a) *In the event that the Encumbrancer desires to redevelop the said Land the Encumbrancer shall be obliged to provide in respect of each additional square metre of gross leasable floor area comprised in such redevelopment over and above the gross leasable floor area comprising the development situated upon the Encumbrancer's Land as at the Settlement Date (which such area is hereby deemed to be 2717m² square metres) such additional number of car parking spaces over and above the number of car parking spaces situated upon the Additional Land as at the Settlement Date (being 268) in accordance with a ratio of three (3) car parking spaces per 100 square metres of such additional gross leasable floor area.*

Seconded by Cr Whittington and carried unanimously.

The proposal complies with Council's resolution, including the requirement in Recommendation 1 above that all commercial carparking is available free of charge to the public for the first two (2) hours.



5.6 Waste Management

Colby Phillips Advisory has assessed the proposal's waste management system for the non-residential and residential components. The proposal has been designed in accordance with Colby Phillips' recommendations as detailed below.

5.6.1 Coles Supermarket

The design incorporates a dedicated bin store for general waste, packaged food waste and mixed recycling. Coles will install a large cardboard compactor, and soft plastics will be collected in a bale frame for separate recycling. The cardboard compactor bin will be removed with a hook-lift.

Bins will be collected and emptied by private waste collection contractors engaged by the supermarket operator.

All access to the supermarket's waste collection loading dock will be from George Street (forward entry/forward exit).

5.6.2 Retail Tenancies – Ground Level

Retail tenants will dispose of waste to bins located in a bin room at Ground Level. The design allows enough floor space to store general waste, mixed recycling, food waste, cardboard and confidential paper items.

Building staff will be responsible for wheeling bins to a presentation/collection room at Ground Level. The collection room is separate from the residential presentation/collection room to ensure that Council does not accidentally collect business waste.

A private waste collection contractor will collect the residential tenancy bins using a Rear-lift MRV service.

All access will be from George Street (forward entry/forward exit).

5.6.3 Commercial Tenancies – Level 1

Commercial tenants will dispose of waste into the bin room on Level 1. The bin room has been designed to store general waste, mixed recycling, food waste, confidential paper items and medical waste.

Building staff will be responsible for wheeling bins to a presentation/collection room at Ground Level, via the northern service lift.

The collection room is separate from the residential presentation/collection room to ensure that Council does not accidentally collect business/medical waste.

A private waste collection contractor will empty the commercial bins using a Rear-lift MRV Service, accessed from George Street (forward entry/forward exit).



5.6.4 Townhouses and Apartments

Residents of the podium apartments and townhouses will dispose of waste to bins located in a bin room adjacent to the access lifts. Enough room has been allowed in the design for this room to hold bins for general waste, mixed recycling and food waste. Bins will be moved to a presentation/collection room at Ground Level via the northern service lift. East-Waste (Council's collection contractor) has confirmed that they will collect these bins using their twice-weekly Rear-lift MRV Service, with access from George Street (forward entry/forward exit).

Residents of the George Street apartments will dispose of waste to bins located in a bin room at the entrance to the residents' carpark.

The design makes allowance for enough bins to be stored in this room for general waste, mixed recycling and food waste. East-Waste (Council's collection contractor) can collect the bins from the dedicated bin storage enclosure using their once-weekly Rear-lift MRV service, with access from George Street (forward entry/forward exit).

Colby Phillips' Waste Management Report is at **Attachment E**.

5.7 **Heritage**

There are no heritage places or contributory claims on the site. Surrounding the site are the following heritage items:

State Heritage Place

- Norwood Tom Hall at 175 The Parade.

Local Heritage Places

- 140-144 The Parade (Two-storey shop);
- 160 The Parade;
- 162 The Parade;
- 164 The Parade;
- 166 The Parade;
- 168-178 The Parade;
- 186 The Parade; and
- 188 The Parade (Shops).

George Street Local Heritage Places

- 55 George Street; and
- Salvation Army Citadel.

Edward Street Local Heritage Places

- 65 Edward Street (Villa);
- 80 Edward Street (Villa);
- 84 Edward Street (Villa); and
- 86 Edward Street (Villa).



Stevens Architects has assessed the proposal's impact on these heritage items and against the relevant provisions of the Development Plan in the Heritage Impact Statement at **Attachment F**.

Stevens Architects is satisfied that the proposed development is reasonably consistent with the relevant Development Plan provisions relating to heritage matters and will not adversely impact on the heritage value of adjacent or nearby heritage places. Accordingly, Stevens Architects is satisfied that the proposed development can be supported.

5.8 Landscaping

The roof-top podium will be landscaped in accordance with a design prepared by Jensen Plus.

It is also intended to collaborate with Council to landscape the verge in front of the George Street apartments. The verge is not part of the development site but is devoid of street trees. If approval is granted, the proponent will negotiate with Council to plant street trees at regular intervals along George Street in front of these apartments, using species selected by Council to match street trees planted elsewhere along George Street.



Gravel verge in George Street



The Edward Street verge is well landscaped. No alterations to this section of streetscape are proposed.



Well landscaped verge on Edward Street to be retained

Steel framed canopies will be installed above the southern and northern driveways close to George Street. These canopies will be planted with climbers to shade and soften the site's overall appearance from George Street. The canopies have been designed to allow unobstructed access for all expected vehicle user types.

The southern canopy will also compensate for the removal of trees along the site's southern boundary shared with the two-storey residential flat building immediately to the south. Provision has been made to landscape this boundary with trees and shrubs planted at close intervals to create a green edge at the residential interface.

5.9 Overlooking and Privacy

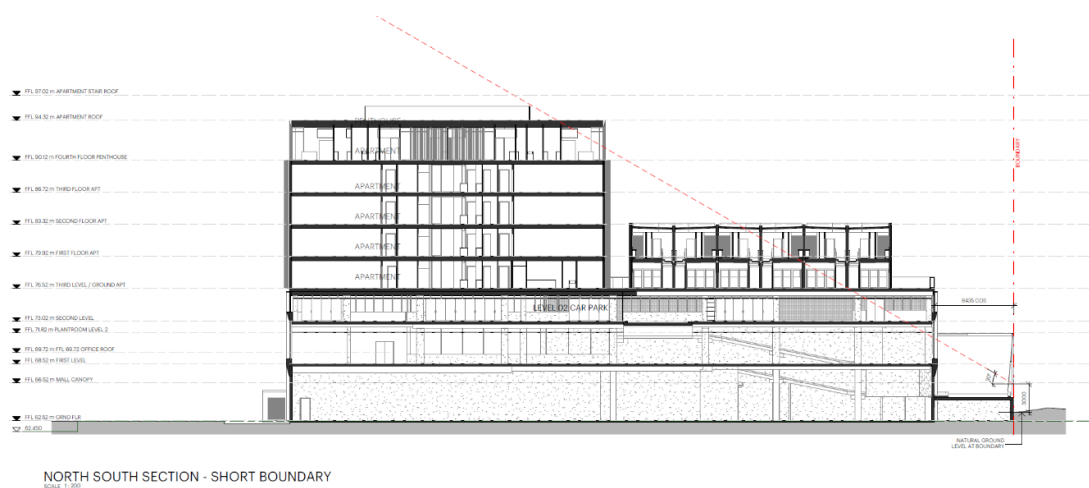
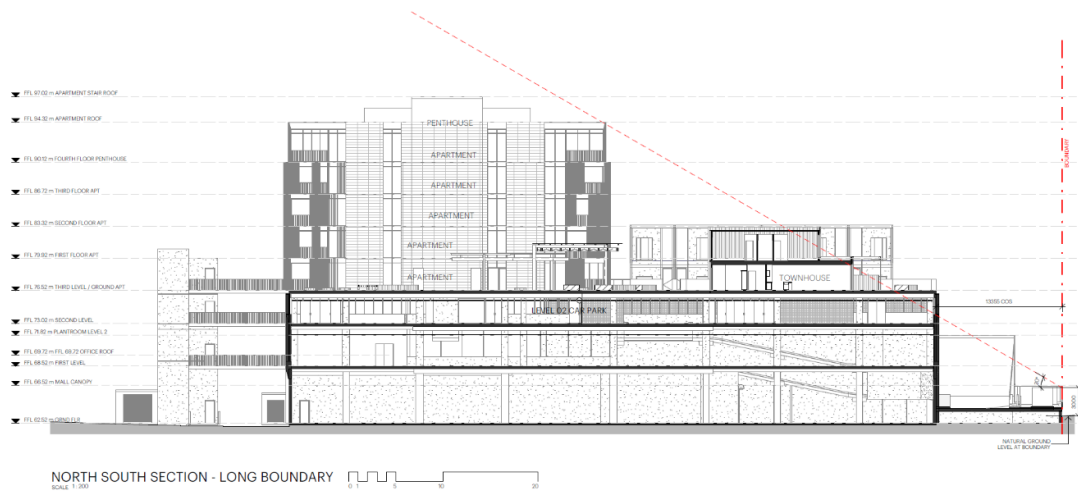
The George Street apartments will face George Street. To the extent that they will have direct views onto the road and verge, they will achieve a high degree of informal surveillance over the public realm.

The podium apartments and townhouses have been designed to minimise, if not avoid, direct overlooking into the private open space and habitable rooms of adjacent dwellings. This will be achieved by a variety of design techniques including:

- a built form transition which scales down towards the Residential Zone boundary at the site's southern boundary;
- installing a landscaped canopy over the southern driveway to compensate for the removal of trees along this boundary;



- ensuring that building height alongside the site's southern boundary is generally consistent with Zone PDC 9, in particular Figure 1 which requires built form to *"be constructed within a building envelope provided by a 30 degree plane, measured from a height of 3.0 metres above natural ground level at the zone boundary . . ."*. Achievement of this requirement is shown in the proposal drawing extracts below.



- all podium townhouses that are oriented north-south closest to the southern boundary are set well back from the podium edge (see First, Second and Third Level Plans, Drawings PA 06 and PA05). These townhouses furthermore will be screened at their lower level with timber slatted courtyards facing south, with the upper levels houses incorporating timber slatted balconies. At both levels, these townhouses will also be screened by trees to be planted in deep soil planter boxes (see Drawing PA05 – Third Level Podium Plan); and
- The apartment 'towers' are positioned as far north as possible to maximise separation distance to residential development in the adjacent Residential Zone.



5.10 Environmental Sustainability

Lucid Consulting Australia have prepared a Sustainability Management Plan – see **Attachment G**.

Lucid identifies that the proposal incorporates Environmentally Sustainable Design (ESD) initiatives namely:

- a high-performance building envelope with wall, floor and roof insulation R-Values to meet best practice guidelines;
- high performance glazing with consideration to building-specific features and climatic conditions;
- thermal mass provided using heavy weight construction materials;
- a highly efficient mechanical system and domestic hot water plant;
- LED lighting used throughout to achieve best practice illuminance;
- natural ventilation and daylight to all dwellings;
- water efficient fixtures and fittings;
- communal roof top greenspace and landscaping throughout the site;
- access to high quality views from tenancies and dwellings; and
- light coloured roofing materials to reduce the 'urban heat island' impact.

The proponent will consider the 'detailed design phase' initiatives listed on page 5 of Lucid's Report. It is likely that the following initiatives will be incorporated in the final design:

- motion and daylight sensors for energy efficient lighting control,
- low VOC and formaldehyde interior finishes, including panels, to reduce the effects on indoor air quality;
- absorptive interior finishes and quiet equipment to manage reverberation and noise levels;
- provision of separated recycling areas and composting to minimise operational waste (see Waste Management Plan);
- generating on-site renewal energy through solar PV installations for the residential townhouses and possibly the podium apartments; and
- secure bicycle storage with end of trip facilities at First Floor Level (see Drawing PA03), with additional bicycle parking provided next to the travelator at Ground Floor Level (see Drawing PA02). Further explanation of bicycle parking is contained in Cirqa's Traffic and Parking Report.



5.11 Acoustics

Resonate Consultants conducted an environmental noise assessment of the proposal with reference to noise from mechanical plant, vehicle movements along the southern driveway shared with the Residential Zone boundary, noise from the loading dock and noise from vehicles on the surrounding road network.

Resonate has determined that:

- noise levels experienced during the day at the nearest sensitive receptors (houses and apartments in George Street, Coke Street and Edward Street) are not considered to be unreasonable;
- noise levels during night-time periods are the same or less than existing ambient noise levels in the vicinity between 10.00 pm and midnight. Resonate considers these noise levels to be negligible;
- noise from the proposal's mechanical plant could adversely affect the podium apartments, and that mitigation treatments will therefore be necessary. These treatments are detailed in Section 6.4.1 of the Resonate Report. The proponent has confirmed that these treatments will be incorporated into the final design at the detailed documentation stage when plant and equipment specifications are known.
- carpark and vehicle noise will be treated with a 1.2-metre-high (minimum) noise barrier to the podium townhouses private outdoor courtyards. The proponent has confirmed that this treatment will be incorporated into the final design at the detailed documentation stage; and
- noise from the supermarket loading dock is not expected to generate unacceptable or excessive noise levels within any apartments or townhouses, given the façade treatments required by Minister's Specification 78B: Construction Requirements for the Control of External Sound.

Resonate considers that the application of Minister's Specification 78B "will ensure that the objectives of the Noise and Emissions Overlay [in the Development Plan] will be achieved". Satisfying the provisions of this Overlay will in turn ensure that the proposal does not detrimentally affect the amenity of noise sensitive receptors in the locality, namely the low to medium density dwelling residential developments in the adjacent Residential Zone.

Resonate's Environmental Noise Assessment is at **Attachment H**.

5.12 Significant and Regulated Trees

There are six (6) Regulated trees and five (5) Significant trees on the site, as well as one (1) tree which is exempt (*Corymbia maculata*, or Spotted Gum). There are other trees on the site which are neither Significant nor Regulated. They are positioned adjacent to the George Street frontage and along the site's southern boundary.



Arborman Tree Solutions has assessed the Significant, Regulated and exempt trees. Its findings are documented in the *Arboricultural Impact Assessment and Development Impact Report* (14 October 2019) at **Attachment I**.

Arborman notes that of the 12 trees assessed (Figure 1 in Arborman's Report), eight (8) have been recommended for removal because they are in direct conflict with the proposal. They would furthermore be difficult to retain without significantly compromising the floor plan layout required to achieve a development outcome that is reasonable and anticipated by the Development Plan.

Arborman recommends that Trees 1, 2, 5 and 11 be retained and protected as part of the proposed development. They are:

- Tree 1: Cork Tree;
- Tree 2: River Red Gum;
- Tree 5: Spotted Gum (Council asset in Coke Park); and
- Tree 11: River Red Gum.

These trees will be retained and incorporated into the design. During construction, the proponent will install recommended protective fencing around the Tree Protection Zone of these trees in accordance with Recommendation 5 of Arborman's Report. The proponent will furthermore install permeable paving within the Tree Protection Zone of the Cork Tree in accordance with Recommendation 6 of Arborman's Report.

6.0 DEVELOPMENT PLAN ASSESSMENT

The relevant Development Plan for assessment purposes is the City of Norwood, Payneham and St. Peters Development Plan, consolidated version dated 21 March 2019.

As noted, the site of the proposed development is in the District Centre (Norwood) Zone, and more particularly in the Retail Core Policy Area of that Zone.

Regarding the nature of the development, its design and siting and the provisions of the Development Plan considered most relevant to an assessment of the proposal's merits, the most relevant planning issues requiring assessment are:

- (i) Is the proposal an envisaged kind of development for this Zone and Policy Area?
- (ii) Is the proposal provided with adequate off-street parking for the reasonable needs of shoppers, employees, residents and visitors?
- (iii) Has the proposal been appropriately designed and sited with consideration to its context and setting?
- (iv) Is the proposal compatible with surrounding heritage buildings?
- (v) Has the amenity of adjacent residential owners and occupiers been considered with particular regard to overlooking and overshadowing?



6.1 Envisaged Development

Zone Objective 1 calls for a range of retail, office and residential facilities to serve the community and visitors in the surrounding district. Retail Core Policy Area Objective 1 encourages major retail facilities including supermarkets and *"medium to high density residential development, located above ground level retailing"*.

The proposal is consistent in all relevant respects with these objectives, comprising a mixed-use redevelopment centred upon the redevelopment and expansion of the Coles supermarket, with medium to high density residential development located above the supermarket.

The Desired Character statement for the Policy Area encourages commercial land uses adjacent to George Street up to three (3) storeys in height. The proposal instead delivers nine (9) apartment style dwellings along this frontage, to achieve a height level that will be consistent with existing residential development to the south and on the opposite side of George Street.

On balance, it is considered that the Development Plan's land use intent is satisfied by the proposed development.

6.2 Off Street Parking

The proposal provides comfortably in excess of the Development Plan's requirements for off-street parking for vehicles and bicycles, as detailed in Tables NPSP/9A and NPSP/10 of the Development Plan, respectively.

Relevantly, the development site is a 'designated area' where non-residential development should be provided with off-street parking at a rate of between three (3) to six (6) spaces per 100 square metres of gross leasable floor area (GLA). The proposal delivers off-street parking for the non-residential component at an effective rate in excess of 4.5 spaces per 100 square metres of GLA.

The residential apartments and townhouses are also provided with off-street parking which exceeds the Development Plan's requirements.

Provision of off-street parking in excess of the Development Plan's requirements has been necessary because of the Council's decision to require visitor parking in accordance with the Car Parking Encumbrance registered on each Title.

Council's decision has required additional parking to be provided, contrary to the provisions of the Development Plan.



Bicycle parking is also allocated throughout the site in conveniently accessible locations for all expected users. The number of spaces provided exceeds the Development Plan's requirements specified in Table NPSP/10.

We are of the opinion that the proposal satisfies all relevant provisions of the Development Plan dealing with parking and access (General Section, Zone and Policy Area).

6.3 Context and Setting

Engagement with the Design Review Panel during Pre-lodgement has resulted in the proposal being amended to achieve greater consistency with the site's context and setting. This has necessitated some fine tuning of the main building façade, the creation of a well-designed and easily accessible roof-top garden at podium level and replacement landscaping along the southern boundary.

The proposal has furthermore been carefully designed to achieve consistency with the building envelope at PDC 9 Figure 1, with minor penetrations into this plane. The two towers are both located as far north on the podium platform as possible to ensure that they do not overlook or overshadow residential development to the south.

Relevantly, the towers, although exceeding the 25.5 metre building height specified for Area C, will be setback from George Street and Edward Street so that a lower building form is achieved along all street frontages but especially along George Street.

The towers furthermore minimise overshadowing of the George Street public realm and maintain the prominence and integrity of heritage buildings along The Parade and in George Street (Zone Principle 10).

In all relevant respects the proposal has been appropriately designed and sited to respect the site's context and setting, in what the Development Plan describes as the retail 'heart' of the District Centre (Norwood) Zone, and within an integrated pedestrian environment.

6.4 Heritage

The proposal has been independently assessed by Andrew Stevens of Stevens Architects Pty Ltd. Mr Stevens is of the opinion that the proposed development is reasonably consistent with the Development Plan's provisions relating to heritage, and the proposal will not adversely impact on the heritage value of adjacent or nearby heritage places.

We concur with Mr Steven's findings.



6.5 Overlooking and Overshadowing

The Zone's Desired Character Statement calls for the *"scale and massing of taller building elements within the Zone [to] be designed having regard to the visual overlooking and overshadowing impacts in residential properties in adjacent Residential Zones, whilst recognising that there is a need to carefully balance the level of amenity expected by nearby residents, with the nature of development desired within the Zone"*.

This statement recognises that achieving the Development Plan's development ambitions in the Zone which is intended for mixed use medium rise buildings (and medium to high density residential development above ground level in Area C of the Retail Core Policy Area) requires some degree of compromise.

In this context, the two towers have been located as far north in the podium as possible to minimise overshadowing of nearby residential properties. This impact is shown in the Shadow Studies (Drawing PA14). These diagrams indicate that residential properties to the south of the site are largely unaffected by shadow from 12 noon onwards on 21 June.

In this regard, we are satisfied that overshadowing from the proposal will be minimised as required by Council-wide PDC 83.

Overlooking for all apartments and townhouses will be minimised if not avoided by installation of screened enclosures to the courtyards to prevent direct overlooking. The Development Plan at Council-wide PDC 83 advises that non-residential Zone should "minimise" overlooking of nearby residential properties we are satisfied that the proposal achieves the Development Plan's intent.

7.0 CONCLUSION

The proposal by 166 The Parade Pty Ltd to demolish existing buildings and infrastructure, and construct a mixed-use retail, commercial and residential complex has been assessed.

The proposal will deliver:

- a substantially larger Coles supermarket;
- retail specialty outlets at ground level;
- a medical centre and office at first floor level; and
- 77 apartments and townhouses above the podium and adjacent to George Street.



The proposal's final design has benefitted from feedback received from the Design Review Panel pre-lodgement service. It also takes account of a recent decision by the Norwood, Payneham and St. Peters Council with respect to the parking Encumbrance which is registered on each Certificate of Title.

The proposal occupies a 1.7-hectare site in the retail heart of the District Centre (Norwood) Zone. The site is constrained by a complex easement and right of way, but benefits from extensive frontage to George Street, Edward Street and Coke Street, and long views down the Mall from the Parade. The two podium towers, although slightly in excess of the building height limit specified for this part of the Zone, nevertheless satisfy the criteria specified in Zone Principle 10 for development located above the maximum allowable podium wall height.

On balance, we are of the opinion that the proposal is deserving of Development Plan Consent.

Graham Burns MPlA (Fellow)
B/A in Planning

15 October 2019



**PROPOSED MIXED-USE DEVELOPMENT
166A THE PARADE, NORWOOD**

TRAFFIC AND PARKING REPORT



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1. INTRODUCTION

CIRQA has been engaged to provide design and assessment advice for the redevelopment of the Norwood Mall shopping precinct at 166A The Parade, Norwood. Specifically, CIRQA has been engaged to provide advice in respect to traffic and parking aspects of the proposal.

This report provides a review of the subject site, the proposed development, its access and parking provisions and the associated traffic impact on the adjacent road network. The traffic and parking assessments have been based upon plans prepared by Studio Nine (drawing nos. 0906-184-PA02 to PA08, dated 14 October 2019, refer Appendix A).

2. BACKGROUND

2.1 SUBJECT SITE

The subject site is located on the southern side of The Parade, Norwood. The site is bound to the north by specialty retail tenancies (with frontage to The Parade) and The Parade, George Street to the east, residential units, detached dwellings and 'Coke Park' to the south, and Edward Street to the west. The City of Norwood, Payneham and St Peters' Development Plan identifies that the site is located within a District Centre (Norwood) Zone (Retail Core Policy Area 2.1).

The subject site is currently occupied by a Coles supermarket (and associated loading dock), specialty shops and at-grade car parking. A total floor area of approximately 3,840 m² gross retail floor area is currently provided on the subject site.

Vehicle access to the site is currently provided via two crossovers on Edward Street and two crossovers on George Street. All turning movements are permitted at each crossover. Pedestrian access is provided via the site's frontages to The Parade, George Street and Edward Street as well as Coke Park.

2.2 ADJACENT ROAD NETWORK

The Parade is an arterial road under the care and control of the Department of Planning, Transport and Infrastructure (DPTI). Adjacent the site, The Parade comprises two traffic lanes in each direction. On-street parking (albeit restricted to a maximum of 30 minutes) and loading zones are facilitated within the immediate vicinity of the site on The Parade. Adjacent the site, a 50 km/h speed limit applies on The Parade.

George Street is a local road under the care and control of The City of Norwood, Payneham and St Peters. George Street comprises a 14.0 m wide carriageway (approximate) with a single traffic lane in each direction. On-street parking is permitted on both sides of George Street, albeit is restricted to two hours from 9:00 am to 5:00 pm, Monday to Saturday, and from 5:00 pm to 9:00 pm on Thursday. A 50 km/h speed limit applies on George Street.

The Parade and George Street intersect at a four-way signalised intersection. All turning movements are permitted at the intersection (accommodated via shared traffic lanes).

Edward Street is a local road under the care and control of The City of Norwood, Payneham and St Peters. Adjacent the site, Edward Street comprises a 9.2 m wide carriageway (approximate) with a single traffic lane in each direction. No stopping zones apply on both sides of Edward Street immediately adjacent the site. A 50 km/h speed limit applies on Edward Street.

The Parade and Edward Street intersect at a four-way priority controlled (Stop) intersection. Left and right-turn movements are permitted from The Parade (for both eastbound and westbound traffic movements), with right-turn movements partially accommodated within a break in the central median. Movements from Edward Street (both northern and southern approaches) are restricted to left-out only via the use of concrete splitter islands.

Figure 1 illustrates the location of the subject site and associated access points with respect to the adjacent road network.

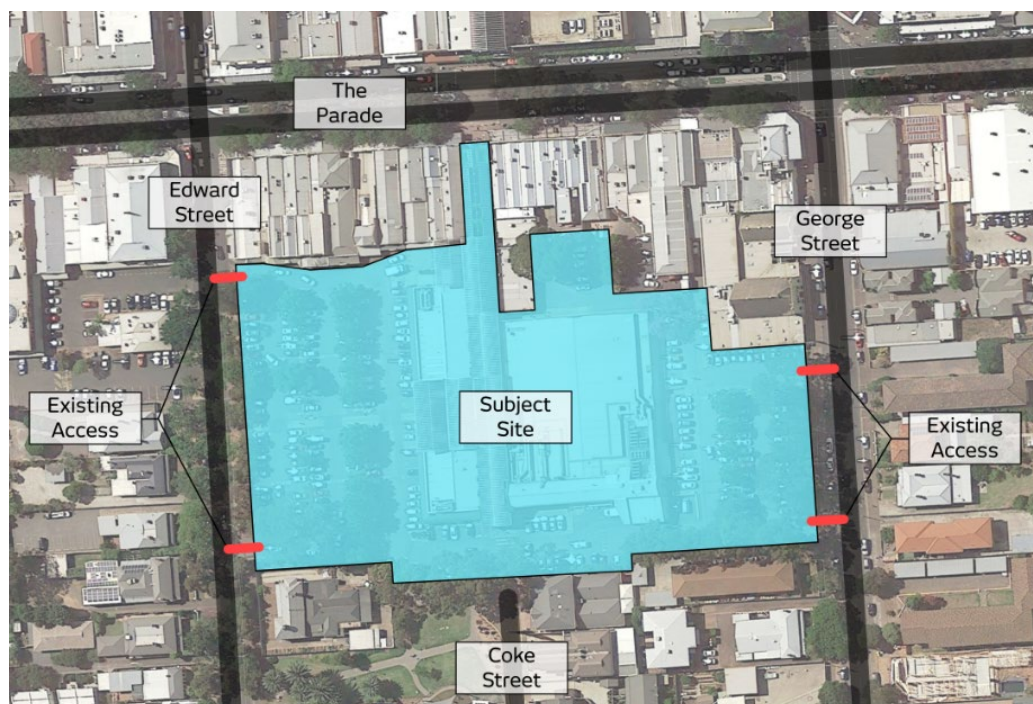


Figure 1 – Location of the subject site and existing access with respect to the adjacent road network

2.2.1 EXISTING TRAFFIC DATA

Existing traffic data has been obtained from DPTI for the intersection of The Parade and George Street. Specifically, SCATS data recorded on Thursday, 14 March 2019 and Saturday, 16 March 2019 has been provided, with turning movement proportions identified using Turning Movement Survey data collected on Thursday, 15 June 2017.

In addition, data collected in 2010 has been obtained for both The Parade/George Street and The Parade/Edward Street intersections. The Parade/Edward Street data has been adjusted to reflect estimated 2019 traffic volumes based upon the differences between the 2010 data and current SCATS.

The 'base case' Thursday pm and Saturday peak hour data adopted in this assessment for the intersection of The Parade and George Street is illustrated in Figure 2 and Figure 3 respectively.

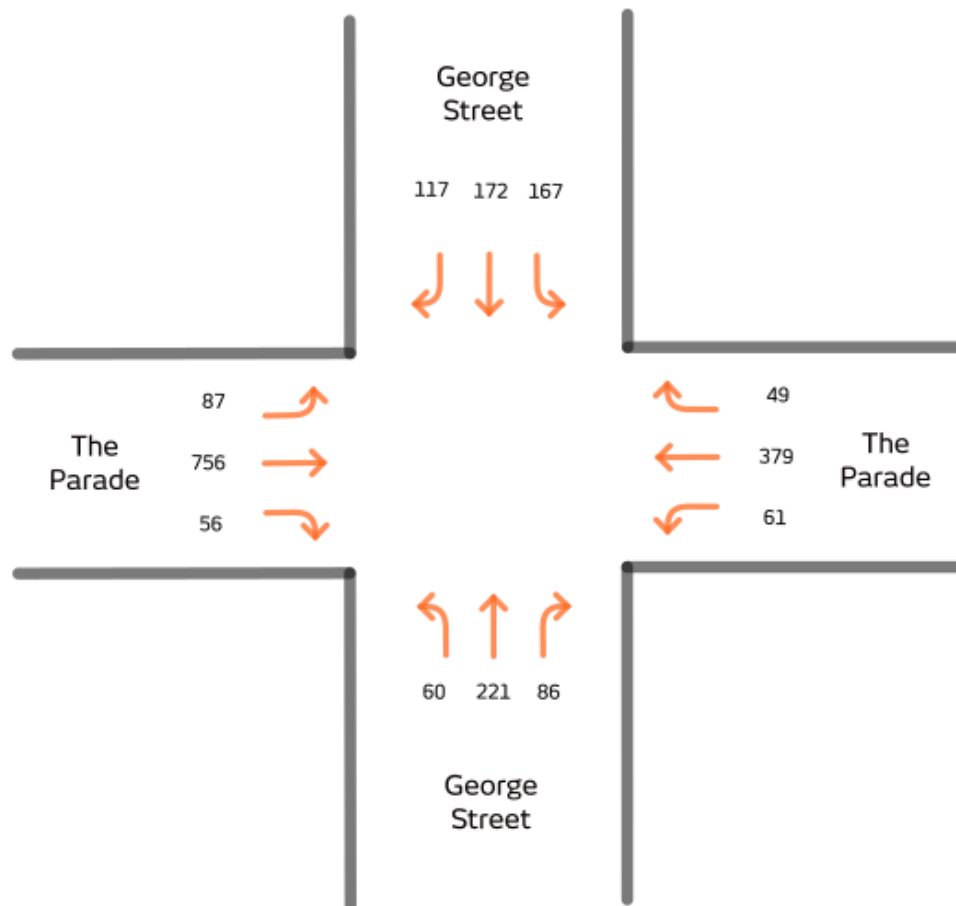


Figure 2 – Existing 2019 Thursday pm peak hour traffic data for The Parade/George Street intersection

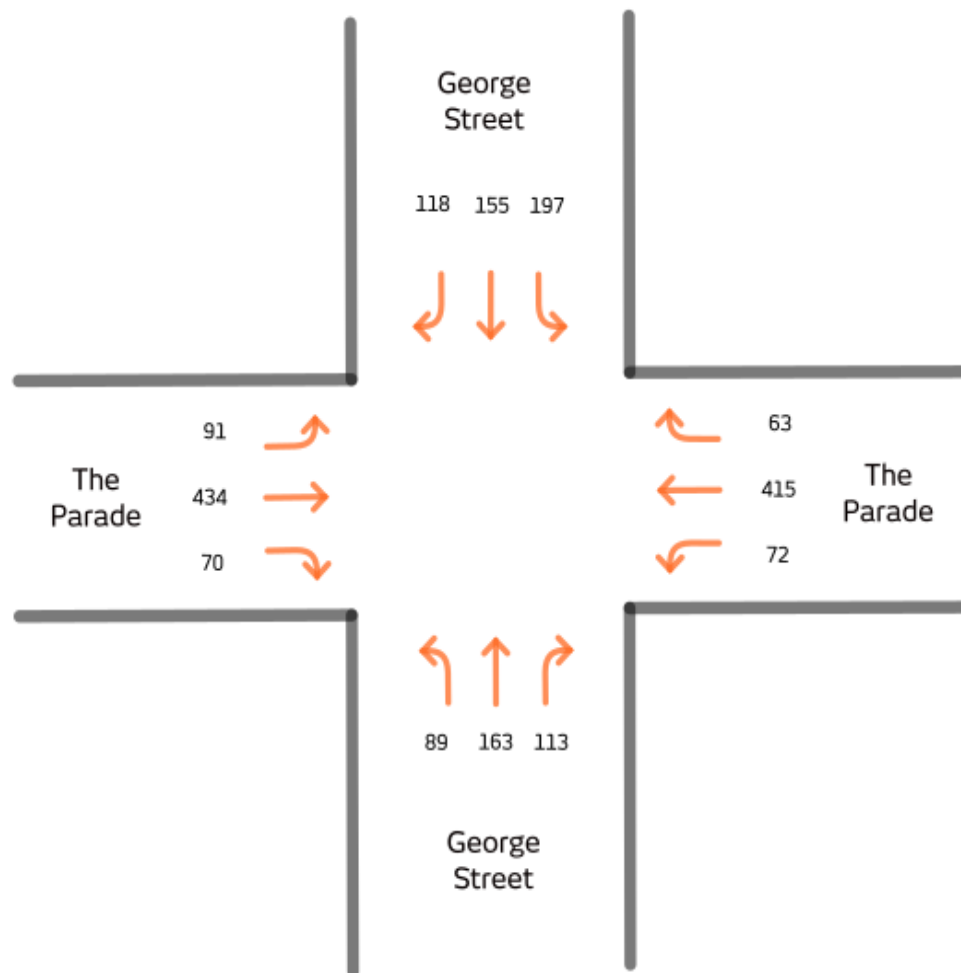


Figure 3 – Existing 2019 Saturday morning peak hour traffic data for The Parade/George Street intersection

The 'base case' Thursday pm and Saturday peak hour data adopted in this assessment for the intersection of The Parade and Edward Street is illustrated in Figure 4 and Figure 5 respectively.

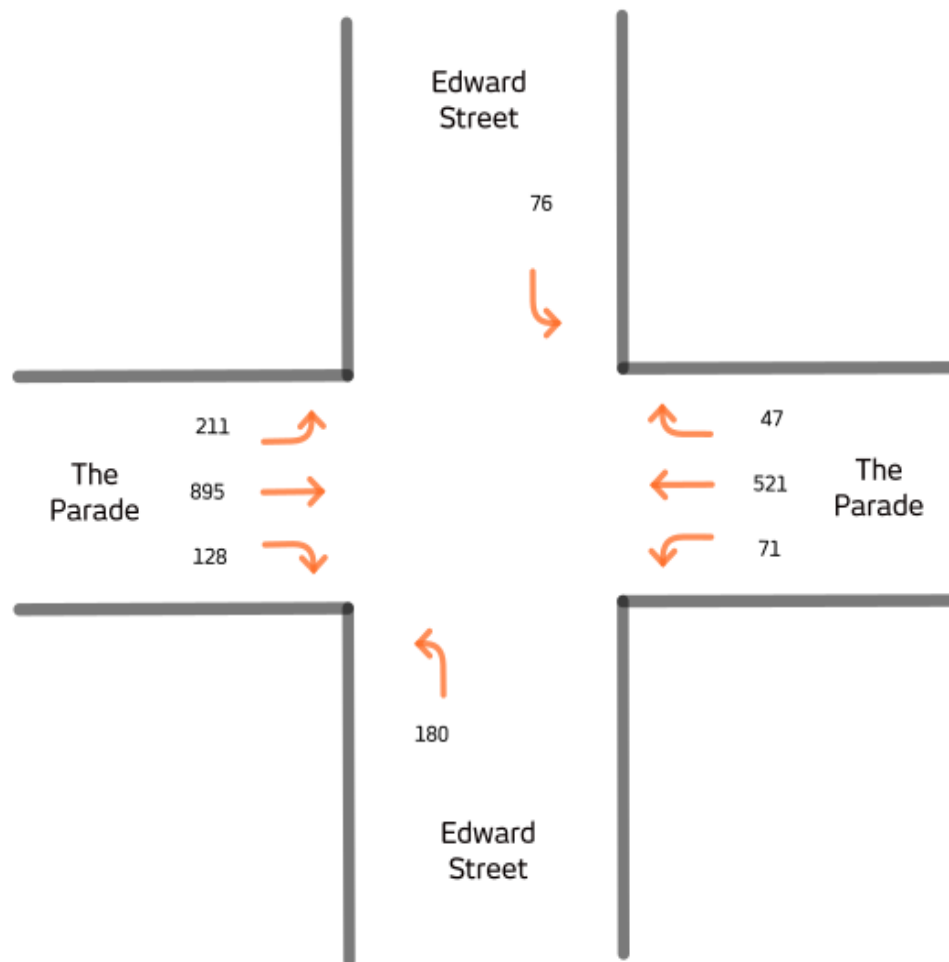


Figure 4 - Adjusted 2019 Thursday pm peak hour traffic data for The Parade/Edward Street intersection

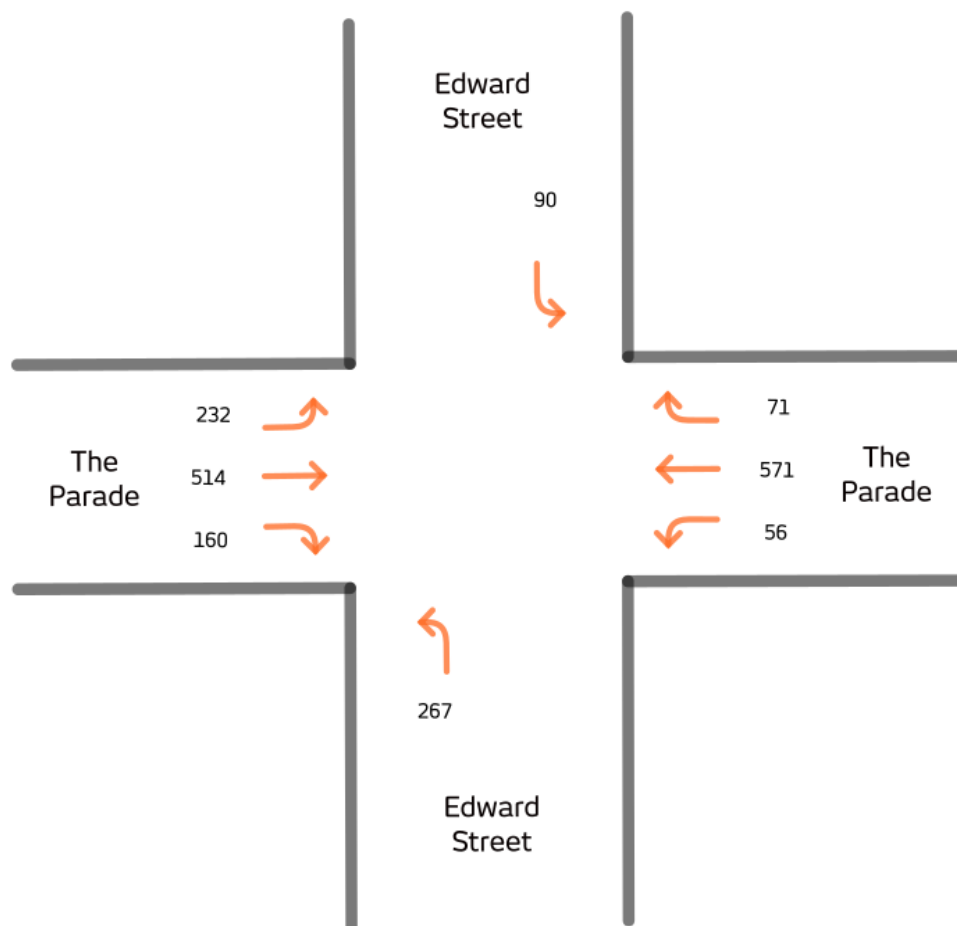


Figure 5 - Adjusted 2019 Saturday peak hour traffic data for The Parade/Edward Street intersection

2.3 WALKING AND CYCLING

The Parade is a major pedestrian thoroughfare, providing pedestrian access to the numerous tenancy frontages along its length. Movements are accommodated on wide paved footpaths on both sides of The Parade.

Pedestrian crossing movements are facilitated at The Parade/George Street intersection (via controlled crosswalk facilities incorporated into the signalised intersection), at The Parade/Edward Street intersection (via formal kerb ramps and a central pedestrian refuge) and midblock on The Parade between the two intersections via a Pedestrian Actuated Crossing (PAC). It should be noted that the PAC provides direct pedestrian connectivity between the Norwood Mall and Norwood Place (located on the northern side of The Parade, immediately opposite the subject site) shopping centres.

Pedestrian movements are accommodated via sealed pedestrian paths along both sides of George Street and Edward Street. Formal crossing facilities are

provided at both intersections with The Parade. An additional crossing point is located on Edward Street immediately adjacent the site providing access to the site's parking area and shopping centre.

Bicycle movements are accommodated on The Parade and Edward Street under a standard shared arrangement (no bicycle lanes are provided). With regard to George Street, bicycle movements are also accommodated on-street under a shared arrangement, albeit 'sharrows' are provided along its length. Bicycle movements are also accommodated on the surrounding footpath network.

In addition to the above, the South Australian Government's BikeDirect Network identifies The Parade as a 'Main Road', George Street as a 'Secondary Road' and William Street as a 'Secondary Road with Bicycle Lane'. Combined, these routes provide connectivity to the broader cycling network within Norwood and metropolitan Adelaide.

2.4 PUBLIC TRANSPORT

High-frequency bus services operate along The Parade with stops located within close vicinity to the site (less than 100 m). The following bus services operate from these stops:

- Route 140 – City to Glen Osmond;
- Route H20 – Glenelg Interchange to Paradise Interchange;
- Routes H20C, H21 – Paradise Interchange to City;
- Route H20R – Paradise Interchange to Richmond;
- Route H22 – Henley Beach South to Wattle Park;
- Route H22C – Wattle Park to City;
- Route H22L – Wattle Park to Lockleys;
- Routes H23, H24 – City to Auldana;
- Route N22 (weekend after midnight service) – City to Wattle Park; and
- Route A014 (special service) – Rosslyn Park to Adelaide Oval.

Regular bus services also operate along Portrush Road (approximately 650 m east of the site), Kensington Road (700 m south) and Magill Road (850 m north).

A dedicated Taxi Zone is located on the northern side of The Parade, directly opposite the site.

2.5 PREVIOUS DEVELOPMENT PROPOSAL

A previous application for the redevelopment of the subject site was lodged by 'Coles Group Property Developments Limited' in July 2013 (Development Application number 155/474/13). The application was later approved by the Council Assessment Panel (formerly Development Assessment Panel) in March 2014. The approved redevelopment is understood to have comprised of the following key components:

- a total of 7,854 m² of retail floor area (inclusive of a Coles supermarket as well as specialty retail tenancies);
- improved pedestrian and bicycle facilities;
- relocated and upgraded loading facilities; and
- 354 parking spaces (equivalent to a parking rate of 4.51 spaces per 100 m² of retail floor area).

3. PROPOSED DEVELOPMENT

3.1 LAND USE AND YIELD

The proposal comprises the demolition of the existing Coles supermarket, specialty tenancies and parking areas, and the construction of a mixed-use multi-storey building. Specifically, the proposal will comprise the following components:

- **Non-residential floor area = 5,319 m² (gross leasable floor area)**
 - 3,718 m² of supermarket (to be occupied by Coles and Liquorland);
 - 516 m² of retail floor area (comprising of four specialty tenancies);
 - 470 m² of medical centre/childcare centre floor area (the floor area's use is yet to be finalised); and
 - 615 m² of office floor area (comprising of two tenancies).
- **Residential = 77 dwellings**
 - 16x two-bedroom townhouses (podium level);
 - 8x three-bedroom townhouses (podium level);
 - 2x one-bedroom apartments (podium towers);
 - 38x two-bedroom apartments (podium towers);
 - 4x three-bedroom apartments (podium towers);
 - 3x two-bedroom apartments (George Street); and
 - 6x three-bedroom apartments (George Street).

3.2 VEHICLE AND BICYCLE PARKING DESIGN

The site will be serviced by a total of 440 vehicle parking spaces provided in a combination of at-grade, multi-deck and secure parking spaces (inclusive of 12 spaces reserved exclusively for use by people with disabilities). Specifically, vehicle parking spaces will be provided in the following primary locations:

- 151 parking spaces for general use, located within an at-grade area adjacent Edward Street (with direct access via Edward Street);
- 32 parking spaces for use by staff, located within an undercroft parking area adjacent George Street (with access via a ramp from George Street);
- 2 parking spaces for use by staff, located on the northern side of the aforementioned ramp from George Street;
- 5 parking spaces for use by staff, located on the northern side of the proposed multi-storey building (with access also via the George Street ramp);

- 18 parking spaces for use by residents, located behind the George Street apartments (with access provided via an internal roadway connecting to both Edward Street and George Street);
- 97 parking spaces for general use, located on the first floor (with access provided via a ramp connecting to the aforementioned internal roadway);
- 60 parking spaces for general use, located on the second floor (with access provided from the first floor); and
- 75 parking spaces for use by residents, located on the second floor.

All parking areas will comply with the requirements of the Australian/New Zealand Standard for *"Parking Facilities Part 1: Off-street car parking"* (AS/NZS 2890.1:2004), the Australian Standard for *"Parking Facilities Part 2: Off-street commercial vehicle facilities"* (AS 2890.2:2018) and the Australian/New Zealand Standard for *"Parking Facilities Part 6: Off-street parking for people with disabilities"* (AS/NZS 2890.6:2009) in that:

- regular parking spaces will be 2.7 m wide and 5.4 m long, with an adjacent parking aisle of at least 6.2 m; or
- regular parking spaces 2.6 m wide and 5.4 m long, with an adjacent parking aisle of at least 6.6 m;
- small car parking spaces will be at least 2.3 m wide and 5.0 m long, with an adjacent aisle of at least 6.2 m wide;
- resident and staff parking spaces will be at least 2.4 m wide and 5.4 m long with an adjacent aisle of at least 5.8 m wide;
- parallel parking spaces will be at least 2.1 m wide and 6.6 m long, with an adjacent aisle width of at least 3.3 m (to the centreline);
- disabled parking spaces will be 2.4 m wide and 5.4 m long (with an adjacent shared space of the same dimension), with adjacent parking aisles of at least 6.2 m;
- light vehicle circulation aisles will be in excess of 6.0 m wide (plus an additional 0.3 m clearance on both sides where required);
- commercial vehicle circulation aisles will be in excess of 6.5 m wide (plus an additional 0.3 m clearance on both sides where required);
- end-of-aisle extensions (1.0 m in length) will be provided beyond the last parking space at the end of any terminating aisle;
- clearances of 0.3 m will be provided (where applicable) to solid objects greater than 0.15 m in height;
- columns will be located outside of the car clearance envelope;

- head-heights in excess of 2.2 m will be provided throughout covered parking areas (2.5 m directly above disabled parking spaces) where only light vehicles movements will be undertaken;
- head-heights of at least 4.5 m will be provided where commercial vehicle movements will be undertaken;
- light vehicle ramps will have maximum gradients of 1 in 5 m, with transitions of 1 in 8 m for at least 2.0 m at each end;
- where a ramp meets a property boundary, ramps will extend for 6.0 m into the property at a gradient no steeper than 1 in 20 m; and
- pedestrian sightlines will be achieved at all access locations.

In addition to the above, a total of 120 bicycle parking spaces will be provided throughout the site. Specifically, bicycle parking will be provided as follows:

- 39 bicycle parking spaces at-grade (for use by customers and visitors to the site);
- 5 bicycle parking spaces within a secure enclosure behind the George Street apartments (for use by residents of the George St apartments);
- 36 bicycle parking spaces within a secure enclosure in the first-floor parking area (for use by staff);
- 30 bicycle parking spaces within a secure enclosure in the second-floor parking area (for use by staff and residents); and
- 10 bicycle parking spaces on the podium level for use by residents and visitors (associated with residents).

3.3 VEHICLE ACCESS

Access to the site is proposed to remain via four access points (two access points on George Street and two access points on Edward Street). Of particular note, no changes are proposed to the site's existing Edward Street access points or the site's southern George Street access (the access points will remain in the same location and will retain all turning movements). All existing access points will retain the ability for simultaneous turning movements (with B99 design vehicles) to occur.

With regard to the northern George Street access, the access will be widened to accommodate commercial vehicle movements to/from the site. This access has been designed to accommodate commercial vehicles up to 19.0 m in length (required to access Coles' loading dock). Such an arrangement is similar to the arrangement associated with the previously approved development.

Pedestrian sight lines will be provided at all vehicle access points. Such provisions will satisfy the requirements of AS/NZS 2890.1:2004.

3.4 COMMERCIAL VEHICLES

Commercial vehicle access to the site will be permitted by the northern access points on both George Street (primary commercial vehicle access) and Edward Street (infrequent commercial vehicle access).

The site's northern George Street access will facilitate commercial vehicle movements associated with Coles' loading dock, Coles' compactor, Coles' refuse collection, specialty tenancy refuse collection and residential (apartment) refuse collection. The largest vehicle which will require access to the site is a 19.0 m Semi-trailer (associated with Coles' deliveries). The back-of-house area has been designed such that all vehicles will be able to be driven into and out of the site in a forward direction. Plans illustrating the various commercial vehicle movements anticipated via the site's northern George Street access are attached in Appendix B.

It should be noted that a plant room will be constructed above a portion of the rear loading dock. However, the plant room has been designed such that a clear height of at least 4.5 m will be retained beneath. Such a clear height will satisfy the various requirement identified by the Australian Standard for "*Parking Facilities – Part 2: Off-street commercial vehicle facilities*" (AS 2890.2:2018).

With regard to the site's northern Edward Street access, commercial vehicles up to 8.8 m in length (such as a Medium Rigid Vehicle) will use this access infrequently. It should be noted that commercial vehicle movements via this access will not be associated with the proposed development but will be associated with adjacent retail tenancies with frontage to The Parade. This is due to an existing right-of-way over the subject site currently facilitating movements by such vehicles (i.e. servicing of the aforementioned retail tenancies). The reconfigured Edward Street parking area (and circulation aisles) has, as such, been designed to retain commercial vehicle access and ensure that vehicles can be driven to/from the site in a forward direction. A plan illustrating the turn path of an 8.8 m MRV accessing the site via the northern Edward Street access is attached in Appendix C.

4. PARKING ASSESSMENT

4.1 VEHICLE PARKING

4.1.1 DEVELOPMENT PLAN

The City of Norwood Payneham and St Peters' Development Plan identifies the following vehicle parking rates relevant to the proposed development:

- **Non-residential development**
 - Minimum – three spaces per 100 m² of gross leasable floor area; and
 - Maximum – six spaces per 100 m² of gross leasable floor area.
- **Residential development (in the form of residential flat buildings and multi-storey buildings)**
 - Studio, 1, and 2-bedroom dwellings – one space per dwelling;
 - 3 or more-bedroom dwellings – 1.25 spaces per dwelling; and
 - Visitor – 0.25 spaces per dwelling.

Based the above rates, the theoretical parking requirements associated with each use have been calculated.

Table 1 – Breakdown of the theoretical parking requirements associated with each use based upon regular parking rates

Use	Dev. Plan Requirement	No. of Spaces Provided	Comment
Non-residential	160 to 320	347	Exceeded
Residential (podium)	71	75	Satisfied
Residential (George St)	11	18	Satisfied
Visitor (combined)	20	Shared with non-residential	Satisfied
Total:	262 to 422	440	

As illustrated in Table 1, the residential parking requirements identified by Council's Development plan are adequately satisfied. It should be reiterated that the resident parking spaces will be located within a secure parking area to ensure that allocated resident parking spaces are always available.

With regard to the non-residential component, Council's Development Plan identifies a requirement for between 160 and 320 parking spaces to be provided on-site. Given that a total of 347 non-residential parking spaces will be provided

throughout the site, parking spaces in excess of the maximum identified by Council's Development plan will be provided .

However, it should be noted that the residential visitor parking requirements will be accommodated (shared) within the non-residential parking area. On this basis, there would be a requirement for between 180 and 340 non-residential parking spaces. While the total number of vehicle parking spaces provided still exceeds the maximum non-residential parking requirement, the difference between the number of spaces provided and the number of spaces required (seven spaces) is negligible and would be somewhat reflective of daily fluctuations in parking demands.

Further discussion regarding the reasoning as to why excess spaces have been proposed is identified below in Section 4.1.2.

4.1.2 PARKING ENCUMBRANCE

A portion of the subject site was historically owned by Council. When Council sold their portion of the land in 1989 (to be incorporated in the overall site), an Encumbrance was placed upon all land titles forming the subject site to ensure that a given number of parking spaces are (and will always) be provided on the subject site in order to accommodate parking demands associated with the broader Parade precinct.

As part of the previous 2013 Development Application, the Encumbrance was varied to bring the resultant parking requirements in line with more contemporary rates (that parking be provided on the subject site at a rate of 4.5 spaces per 100 m² of net leasable floor area). This resulted in a Property Interests Deed being agreed to and signed by both the City of Norwood, Payneham and St Peters as well as the 'Coles Group Property Developments Ltd', subject to the 2013 Development Application proceeding.

However, given that the 2013 Development Application did not eventuate, the Property Interests Deed was found to also be redundant and the original 1989 Encumbrance is therefore still applicable to the subject site.

In a meeting held on Tuesday, 8 October 2019, the Council again agreed to vary the original Encumbrance. Specifically, a motion was moved by Council to vary the parking Encumbrance as per the following:

"1. That the Council adopts the position that Clause 3 of the car parking encumbrance be amended so as to require that all of the commercial car parking spaces on the subject land, be available to the public free of charge for the first two (2) hours.

2. That the Council adopts the position that Clause 4 of the car parking encumbrance be amended to read as follows:

a) In the event that the Encumbrancer desires to redevelop the said Land the Encumbrancer shall be obliged to provide in respect of each additional square metre of gross leasable floor area comprised in such redevelopment over and above the gross leasable floor area comprising the development situated upon the Encumbrancer's Land as at the Settlement Date (which such area is hereby deemed to be 2717m² square metres [sic]) such additional number of car parking spaces over and above the number of car parking spaces situated upon the Additional Land as at the Settlement Date (being 268) in accordance with a ratio of three (3) car parking spaces per 100 square metres of such additional gross leasable floor area."

It should be noted that neither the original or new parking Encumbrance are applicable to residential development (floor area) and that the Encumbrance only relates to commercial development (non-residential floor area).

On the basis of the above (new) Encumbrance, the proposed development will have a requirement for 347 non-residential parking spaces. Given that 347 parking spaces will be provided throughout the subject site (equivalent to a parking rate of 6.64 spaces per 100 m²), the resultant parking requirement imposed by the Encumbrance is satisfied.

4.2 BICYCLE PARKING

4.2.1 DEVELOPMENT PLAN

The City of Norwood, Payneham and St Peters' Development Plan identifies the following bicycle parking rates relevant to the proposed development:

- **Residential**
 - Resident – one space for every two dwellings; and
 - Visitor – one space for every five dwellings.
- **Shop**
 - Employee – one space for every 150 m² of gross leasable floor area; and
 - Customer – one space for every 300 m² of gross leasable floor area.
- **Office**
 - Employee – one space for every 100 m² of gross leasable floor area; and
 - Visitor – two spaces PLUS one space for every 500 m² of gross leasable floor area.

It should be noted that for the purposes of this assessment, the proposed medical centre has been assessed on the basis of the shop bicycle parking rate. This is due to a lack of bicycle parking information relating to medical centres available for use in such assessments. Such an approach is considered to be conservative in that additional bicycle parking may be provided above that of typical medical centre demands. Nonetheless, the above shop bicycle parking rate has been applied to the medical centre component of this assessment.

Based upon the parking rates identified above, Table 2 illustrates a breakdown of the theoretical bicycle parking requirement associated with each component of the proposal, as well as the number of parking spaces allocated to each use.

Table 2 – Bicycle parking requirements based on the Development Plan

Use	Dev. Plan Requirement	No. of Spaces Provided	Comment
Staff/Resident (podium)	70	76	Satisfied
Residential (George St)	5	5	Satisfied
Visitor (combined)	36	39	Satisfied
Total:	111	120	

As illustrated in Table 2, the George Street residential bicycle parking requirements is adequately satisfied with the provision of five bicycle parking spaces.

With regard to the visitor parking bicycle parking requirement, a total of 39 spaces (i.e. bicycle rails capable of accommodating 39 bicycles) will be provided throughout the site on the ground level. On this basis, the visitor bicycle parking requirements identified in Council's Development for the non-residential and residential components are satisfied.

A total of 76 spaces will be provided within two secure enclosures and on the podium level for use by resident (podium) and staff bicycle parking. Such provisions satisfy the bicycle parking requirements of Council's Development Plan).

Furthermore, it is not uncommon for residents to store their bicycles (particularly high-end bikes) within their dwelling. Given that adequate storage space will be provided within the various dwellings (particularly the townhouses), it is considered that adequate bicycle parking opportunities are available.

5. TRAFFIC FORECASTS

5.1 ANALYSIS PERIODS

For the purposes of this assessment, the Thursday evening (network) and Saturday late morning (site) peak periods have been analysed. These peak periods have been considered to be critical periods with regard to potential impacts of the development on the surrounding road network.

5.2 TRAFFIC GENERATION

The NSW Roads and Maritime Services' *"Guide to Traffic Generating Developments"* (the RMS Guide), and its subsequent updates, identifies the following traffic generation rates relevant to the proposed development:

- **Shopping Centres**
 - 12.3 peak hour trips (Thursday) per 100 m² of gross floor area; and
 - 16.3 peak hour trips (Saturday) per 100 m² of gross floor area.
- **Office**
 - 1.2 pm peak hour trips per 100 m² of gross floor area.
- **Medical Centre**
 - 8.8 pm peak hour trips per 100 m² of gross floor area.
- **Childcare Centre**
 - 0.7 pm peak period (two-hour) trips per child.
- **High density residential flat dwellings**
 - 0.53 am peak hour trips per dwelling; and
 - 0.32 pm peak hour trips per dwelling.

It should be noted that the shopping centre traffic generation rates identified above are considered too conservative due to the large-scale nature and variety of offerings which of a typical shopping centre (compared to that of the proposal). In reality, it would be expected that the proposed development would generate in the order of 7.5 to 9.0 peak hour trips per 100 m² of gross floor area. Such rates are commonly applied to (and accepted for) similar small-scale retail developments throughout metropolitan Adelaide.

However, it is noted that the subject site is a destination and origin of trips associated with uses external to the subject site (reflective of the site's parking Encumbrance). While it is difficult to determine the extent of external movements destined for and originating at the subject site, the RMS 'shopping centre' traffic generation rates are considered to account for similar arrangements. As such, despite being considered conservative for application to typical shop uses, for

the purposes of this assessment, the 'shopping centre' rates identified by the RMS have been adopted in this assessment.

Furthermore, as noted in Section 3.1, it has not yet been determined if a portion of the site's gross leasable floor area (equivalent to 470 m²) will be utilised as a 'medical centre' or a 'childcare centre'. Given the significant difference in generation rates associated with each use (8.8 pm peak hour trips versus 0.7 pm peak two-hour period trips), the subject component has been assessed using the traffic generation rates applicable to a 'medical centre'. Such an assessment approach is considered to allow the future use of the tenancy as either a 'medical centre' or a 'childcare centre'.

Finally, it should also be noted that the pm traffic generation rates applicable to 'office' and 'medical centre' have been adopted in the existing and forecast traffic generation assessments for the Saturday peak period. Similarly, the am peak hour generation rate associated with high-density residential dwellings has also been applied for assessment of the Saturday peak period. Such applications are considered to result in a conservative assessment as, in reality, medical centres and dwellings will have a less focused (and therefore lower) peak hour on a weekend, while 'office' uses would typically be expected to be vacant (i.e. no staff on-site).

Based on the above traffic generation rates, the existing development is forecast to generate the following peak hour vehicle movements:

- Existing Thursday pm peak hour = 473 vehicle movements; and
- Existing Saturday morning peak hour = 626 vehicle movements.

In comparison, the proposed development is forecast to generate the following peak hour vehicle movements:

- Forecast Thursday pm peak hour = 595 vehicle movements; and
- Forecast Saturday morning peak hour = 780 vehicle movements.

On the basis of the above, redevelopment of the subject site is forecast to generate the following additional vehicle movements on the adjacent road network:

- Additional Thursday pm peak hour = + 122 peak hour vehicle movements.
- Additional Saturday morning peak hour trips = + 154 peak hour vehicle movements.

It should be noted that the above assessments are considered to be conservative as the traffic generation assessments have not taken into account shared trips associated as a result of drivers visiting multiple tenancies while on-site. Therefore, it is considered that there would be a portion of 'double counting' of vehicle trips associated with both the above assessments. While it is noted that this would apply to both the existing and forecast assessment, due to the increase scale of the proposed development, the 'double counting' of trips would be more prevalent.

Similarly, the above 'additional' assessment has not taken into consideration vehicles which are already on the adjacent road network (i.e. passing trade). Instead, the above assessment assumes that all additional trips will result in new vehicle movements on the adjacent road network.

Nonetheless, the above methodology conservatively forecasts additional vehicle movements on the adjacent road network and will result in a 'worst-case' traffic impact analysis (further information is provided in Section 5.4).

5.3 TRAFFIC DISTRIBUTION

In order to assess the site's potential traffic impact, the following assumptions have been made with regard to traffic movements to/from the site during the Thursday pm peak hour:

- **Retail** – 50% of movements will enter the site and 50% will exit the site;
- **Office** – 20% of movements will enter the site and 80% will exit the site;
- **Medical Centre** – 50% of movements will enter the site and 50% will exit the site; and
- **Residential** – 70% of movements will enter the site and 30% will exit the site.

Similarly, the following assumptions have been made with regard to traffic movements to/from the site during the Saturday morning peak hour:

- **Retail** – 50% of movements will enter the site and 50% will exit the site;
- **Office** – 50% of movements will enter the site and 50% will exit the site;
- **Medical Centre** – 50% of movements will enter the site and 50% will exit the site; and
- **Residential** – 50% of movements will enter the site and 50% will exit the site.

In order to determine the distribution of site-related vehicle movements to/from the broader road network, survey data of the existing access points has been utilised. While the data (obtained from the previous 2013 development

application's traffic and parking report prepared by MFY) was collected on a Thursday in September 2010, it is not considered that the distribution of movements to/from the site and the broader road network would have significantly changed (if at all). The survey data is also considered relevant as the current proposal does not propose to alter the site's existing access points, nor does it propose to terminate the site's internal roadway connection (between George Street and Edward Street). As such, the survey data is considered to form an appropriate basis for calculation of the site's forecast traffic distribution.

On the basis of the surveyed distribution, the site's total forecast traffic generation has been distributed to the site's two Edward Street access points and the southern George Street access point. It should be noted that no traffic has been distributed to the site's northern George Street access due to primarily being a commercial vehicle access (further discussion is provided below in Section 6.1). Such an approach provides a conservative assessment when analysing the performance of the site's remaining three access points.

Figure 6 and Figure 7 illustrate the Thursday pm and Saturday peak hour total traffic volumes forecast (respectively) at the site's southern George Street access.

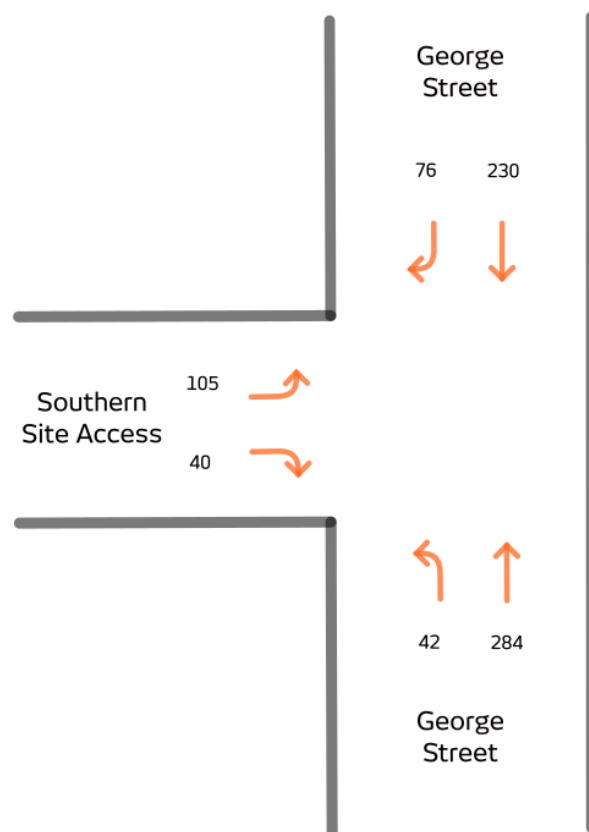


Figure 6 - Total traffic forecast at the site's southern George Street access during the Thursday pm peak hour

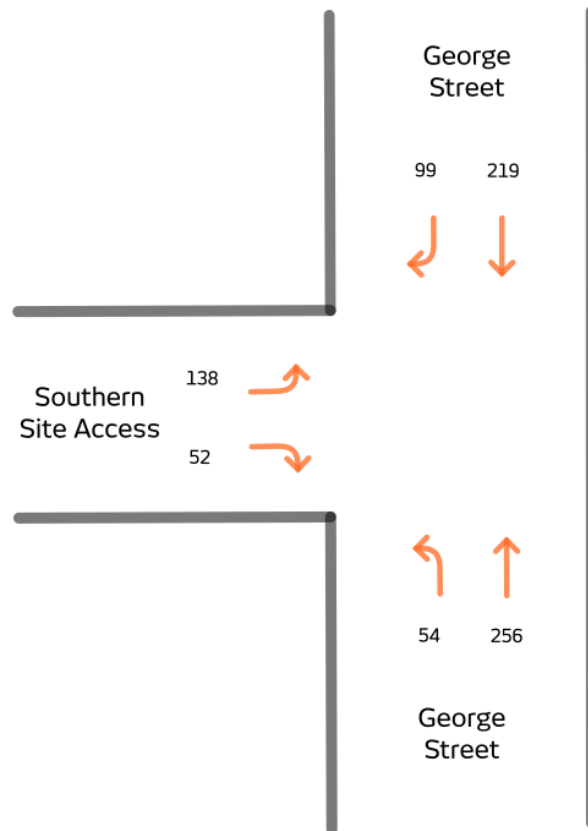


Figure 7 - Total traffic forecast at the site's southern George Street access during the Saturday peak hour

Figure 8 and Figure 9 illustrate the Thursday pm and Saturday peak hour total traffic volumes forecast (respectively) at the site's northern Edward Street access.

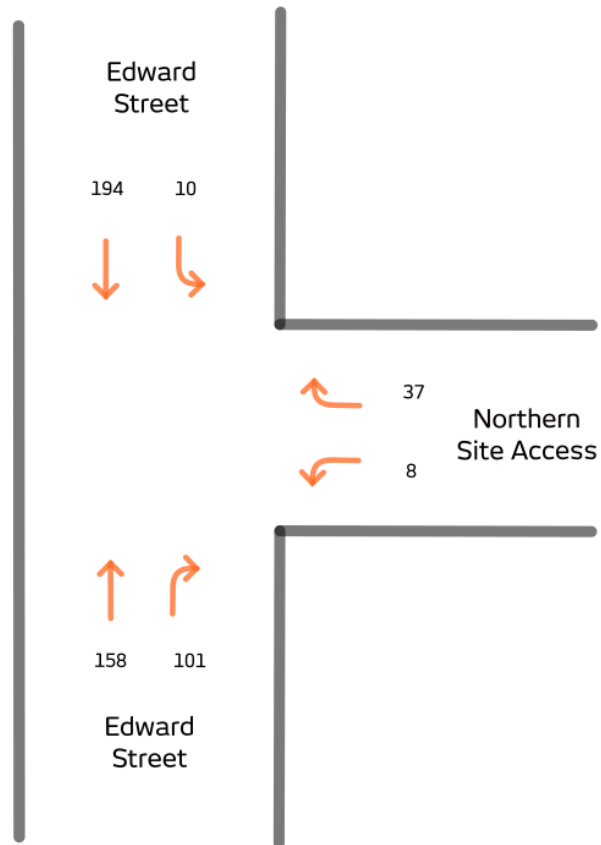


Figure 8 - Total traffic forecast at the site's northern Edward Street access during the Thursday pm peak hour

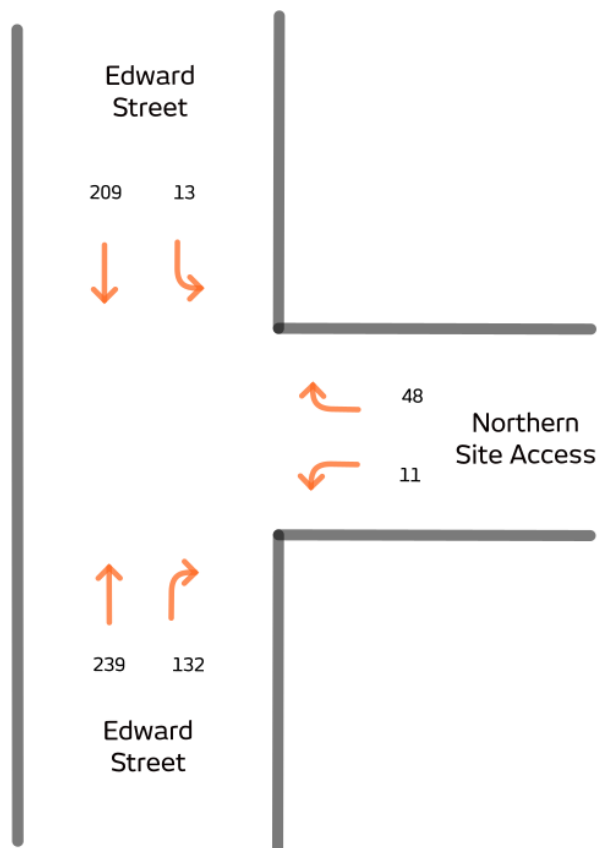


Figure 9 - Total traffic forecast at the site's northern Edward Street access during the Saturday peak hour

Figure 10 and Figure 11 illustrate the Thursday pm and Saturday peak hour total traffic volumes forecast (respectively) at the site's southern Edward Street access.

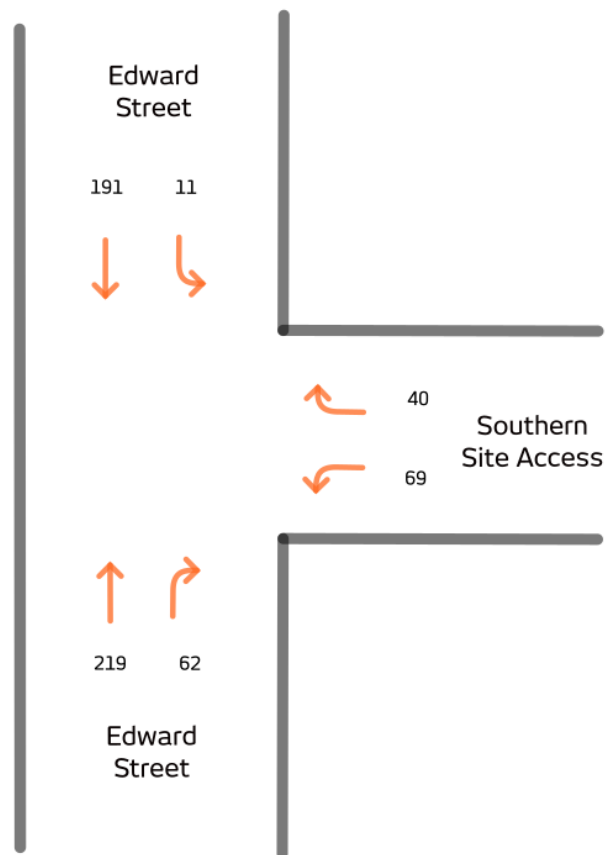


Figure 10 - Total traffic forecast at the site's southern Edward Street access during the Thursday pm peak hour

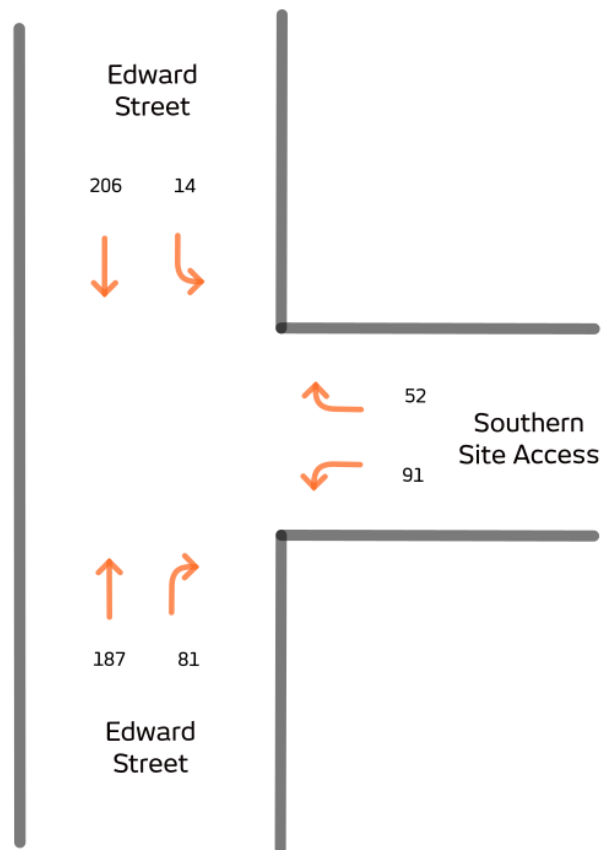


Figure 11 - - Total traffic forecast at the site's southern Edward Street access during the Saturday peak hour

Forecast development volumes have then been forecast at The Parade/George Street and The Parade/Edward Street intersections. Figure 12 and Figure 13 illustrate the total traffic volumes (i.e. existing plus forecast additional) at The Parade/George Street intersection during the Thursday pm and Saturday peak hours respectively.

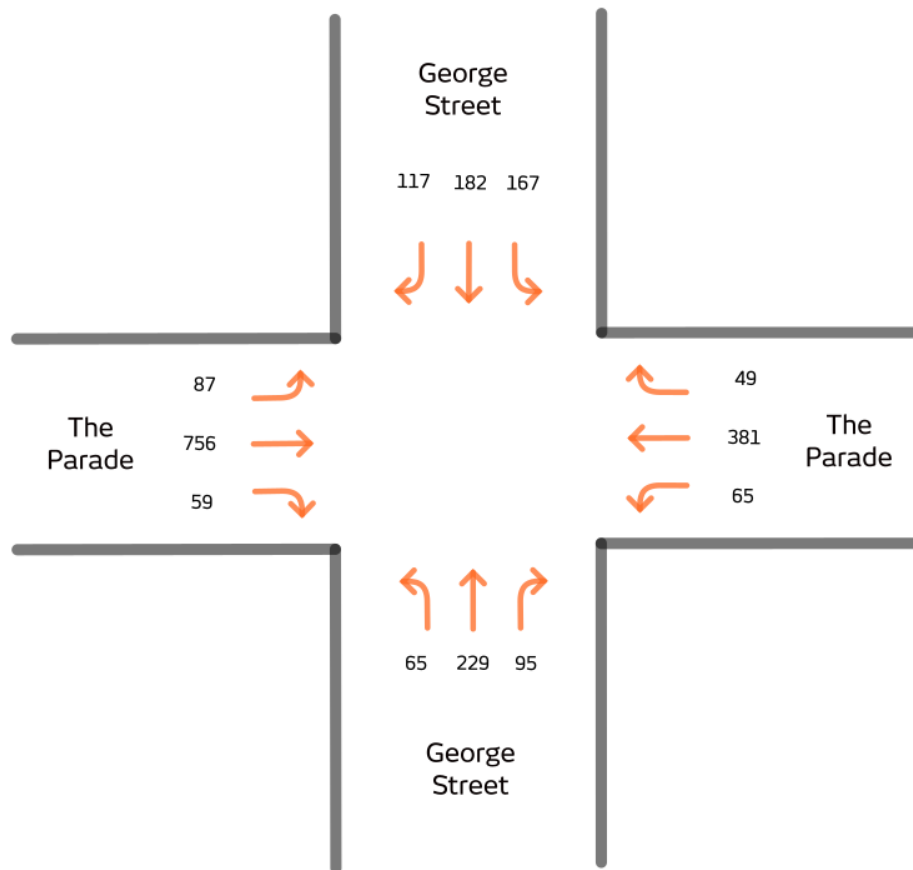


Figure 12 – Total traffic forecast at The Parade/George Street intersection during the Thursday pm peak hour

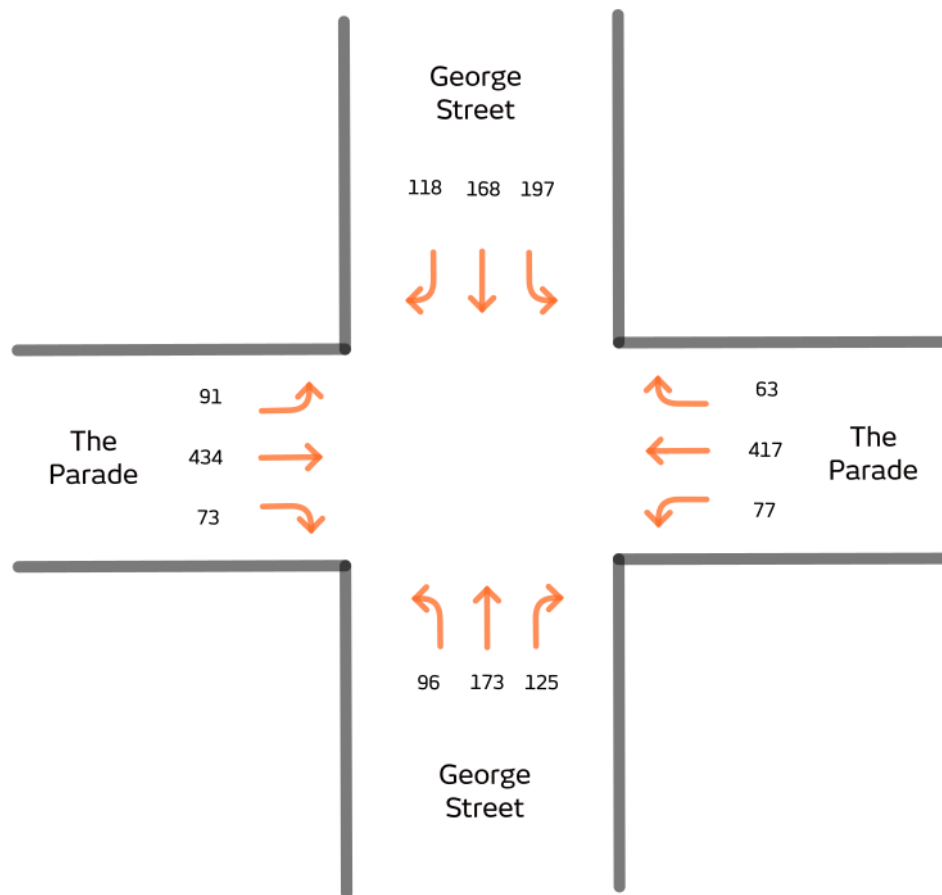


Figure 13 – Total traffic forecast at The Parade/George Street intersection during the Saturday morning peak hour

Figure 14 and Figure 15 illustrates the total traffic volumes at The Parade/Edward Street intersection during the Thursday pm and Saturday peak hours respectively.

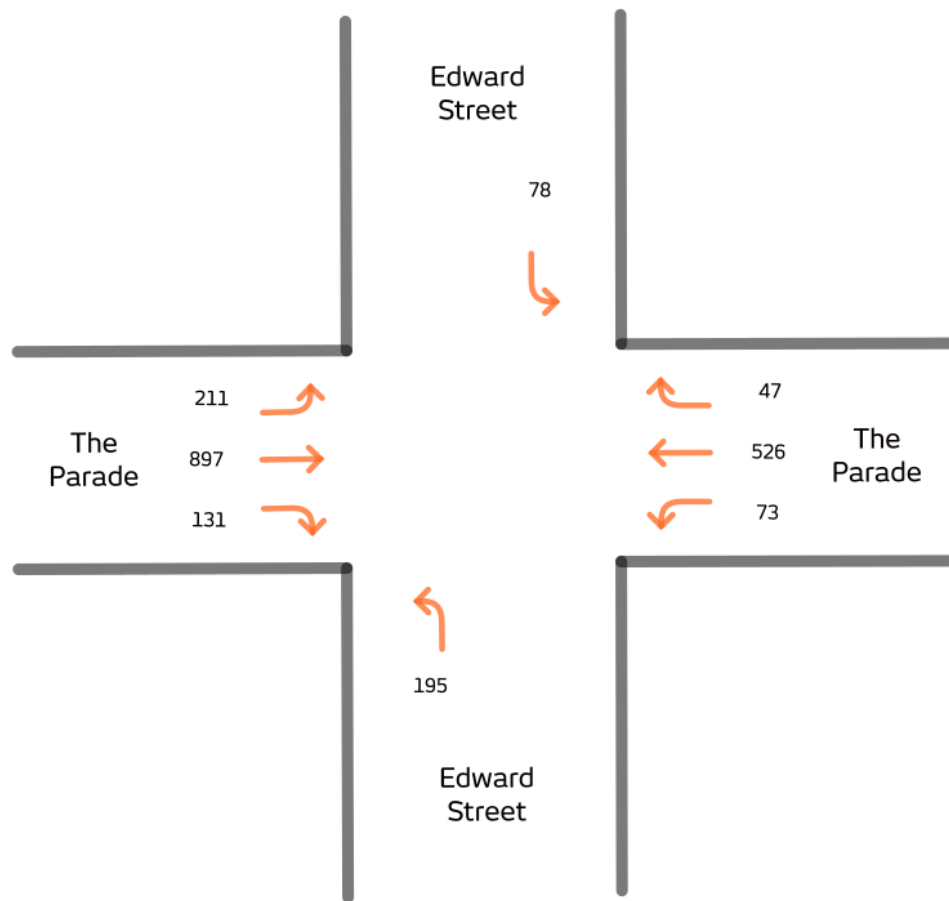


Figure 14 – Total traffic forecast at The Parade/Edward Street intersection during the Thursday pm peak hour

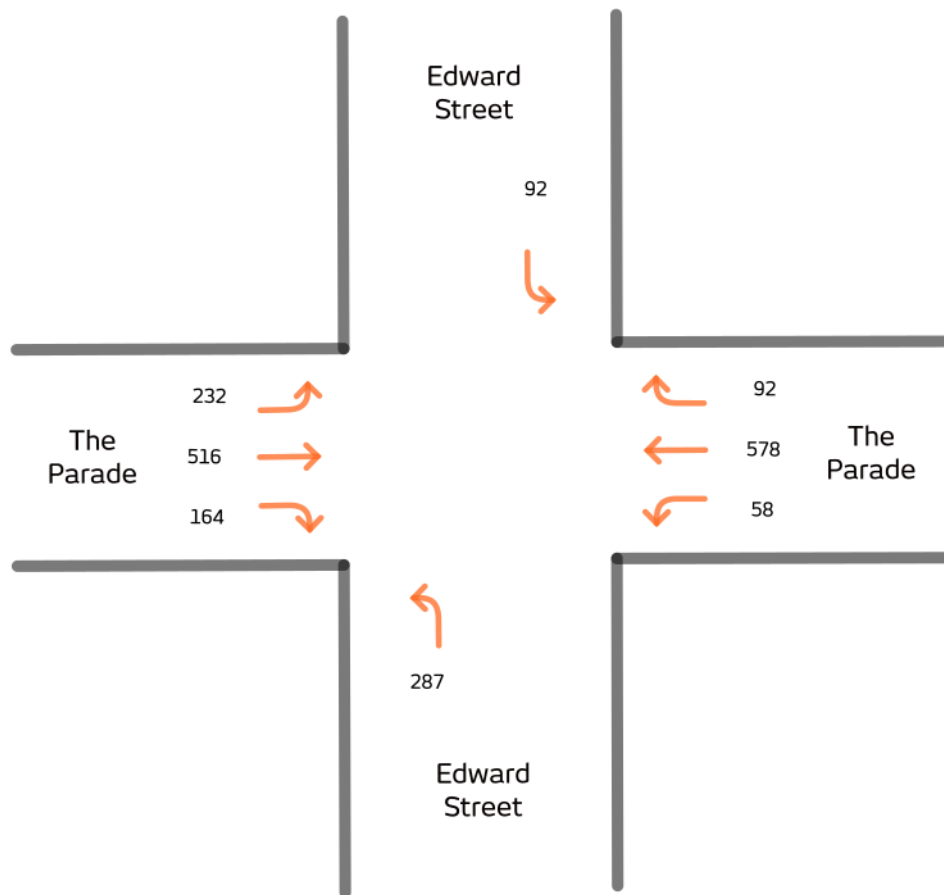


Figure 15 – Total traffic forecast at The Parade/Edward Street intersection during the Saturday morning peak hour

6. TRAFFIC IMPACT ANALYSIS

6.1 SITE ACCESS POINTS

In order to determine the adequacy of the site's proposed access arrangements, SIDRA Intersection modelling has been undertaken. It should be noted that the site's southern George Street and both Edward Street access points have been analysed, given the higher traffic volumes associated with the site's general operation (i.e. public, staff and resident light vehicle movements).

As the site's northern George Street access will primarily accommodate commercial vehicle movements (anticipated to be very low when compared to general light vehicle movements), modelling of this access has not been undertaken. While it is acknowledged that a small staff parking area (and small number of parking spaces associated with retail tenancies fronting The Parade) will be accessed from this crossover, the turnover of staff parking spaces is typically low and therefore, minimal (and infrequent) vehicle movements would be generated.

6.1.1 GEORGE STREET (SOUTHERN ACCESS)

6.1.1.1 Thursday PM Peak Period

SIDRA modelling of the site's southern George Street access point indicates that the access will operate well within capacity. Key output identified by the analysis is illustrated in Table 3. Specifically, the analysis indicates that access will operate with a maximum DoS of 0.185 and a maximum 95th percentile queue of 4 m (equivalent to less than one vehicle). All movements are forecast to operate with a LoS A upon completion and occupation of the proposed development.

Table 3 - Key SIDRA analysis output for the analysis of the site's southern George Street access during the Thursday pm peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
George St (N) – Through	(0.185)	(4.0)	(A)
George St (N) – Right	(0.185)	(4.0)	(A)
George St (S) – Left	(0.175)	(0.0)	(A)
George St (S) – Through	(0.175)	(0.0)	(A)
Site Access (W) – Left	(0.147)	(4.0)	(A)
Site Access (W) – Right	(0.147)	(4.0)	(A)

6.1.1.2 Saturday Peak Period

SIDRA modelling of the site's southern George Street access point indicates that the access will operate well within capacity during the Saturday peak period (refer Table 4). The performance of the access point is similar to the Thursday pm peak period with the maximum DoS of 0.198, maximum queue length of 5.3 m and a LoS of A for all movements.

Table 4 - Key SIDRA analysis output for the analysis of the site's southern George Street access during the Saturday peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
George St (N) – Through	(0.198)	(5.0)	(A)
George St (N) – Right	(0.198)	(5.0)	(A)
George St (S) – Left	(0.169)	(0.0)	(A)
George St (S) – Through	(0.169)	(0.0)	(A)
Site Access (W) - Left	(0.188)	(5.3)	(A)
Site Access (W) – Right	(0.188)	(5.3)	(A)

The SIDRA analyses outputs for the site's southern George Street access point intersection (total traffic scenarios) are attached in Appendix D.

6.1.2 EDWARD STREET (NORTHERN ACCESS)

6.1.2.1 Thursday PM Peak Period

Modelling of the site's northern Edward Street access indicates that it will operate with a maximum DoS of 0.159 and a maximum 95th percentile queue length of 4.9 m (refer Table 5). The analysis also reported that all movements will operate with a LoS A.

Table 5 - Key SIDRA analysis output for the analysis of the site's northern Edward Street access during the Thursday pm peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left	(0.110)	(0.0)	(A)
Edward St (N) – Through	(0.110)	(0.0)	(A)
Site Access (E) – Left	(0.054)	(1.3)	(A)
Site Access (E) – Right	(0.054)	(1.3)	(A)
Edward St (S) - Through	(0.159)	(4.9)	(A)
Edward St (S) – Right	(0.159)	(4.9)	(A)

6.1.2.2 Saturday Peak Period

Modelling of the Saturday peak period reported an acceptable level of performance with a maximum DoS of 0.163 and a maximum 95th percentile queue of 7.1 m (refer Table 6). All movements were reported to operate with a LoS A.

Table 6 - Key SIDRA analysis output for the analysis of the site's northern Edward Street access during the Saturday peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left	(0.120)	(0.0)	(A)
Edward St (N) – Through	(0.120)	(0.0)	(A)
Site Access (E) – Left	(0.081)	(1.9)	(A)
Site Access (E) – Right	(0.081)	(1.9)	(A)
Edward St (S) - Through	(0.227)	(7.1)	(A)
Edward St (S) – Right	(0.227)	(7.1)	(A)

The SIDRA analyses outputs for the site's northern Edward Street access point intersection (total traffic scenarios) are attached in Appendix E.

6.1.3 EDWARD STREET (SOUTHERN ACCESS)

6.1.3.1 Thursday PM Peak Period

SIDRA modelling of the site's southern Edward Street access indicates that the access will operate well within capacity during the Thursday pm peak period (refer Table 7). The maximum DoS reported by SIDRA was 0.16, while the maximum 95th percentile queue length reported was 3.4 m. All movements were reported to operate with a LoS of A.

Table 7 - Key SIDRA analysis output for the analysis of the site's southern Edward Street access during the Thursday pm peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left	(0.109)	(0.0)	(A)
Edward St (N) – Through	(0.109)	(0.0)	(A)
Site Access (E) – Left	(0.105)	(2.7)	(A)
Site Access (E) – Right	(0.105)	(2.7)	(A)
Edward St (S) - Through	(0.163)	(3.4)	(A)
Edward St (S) – Right	(0.163)	(3.4)	(A)

6.1.3.2 Saturday Peak Period

Modelling of the Saturday peak period again reported that the access will operate well within capacity with a maximum DoS of 0.160 and a maximum 95th percentile queue of 4.2 m (refer Table 8). All movements were reported to operate with LoS A.

Table 8 - Key SIDRA analysis output for the analysis of the site's southern Edward Street access during the Saturday peak hour – (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left	(0.119)	(0.0)	(A)
Edward St (N) – Through	(0.119)	(0.0)	(A)
Site Access (E) – Left	(0.139)	(3.7)	(A)
Site Access (E) – Right	(0.139)	(3.7)	(A)
Edward St (S) - Through	(0.160)	(4.2)	(A)
Edward St (S) – Right	(0.160)	(4.2)	(A)

The SIDRA analyses outputs for the site's southern George Street access point intersection (total traffic scenarios) are attached in Appendix F.

6.2 EXTERNAL ROAD NETWORK

The impact of the proposed development on The Parade/George Street and The Parade/ Edward Street intersections has been assessed using SIDRA Intersection modelling software. In order to determine the impact of the proposed development, modelling of both the 'base case' and 'total traffic' scenarios have

been undertaken. The results are discussed in the Section 5.4.1 and 5.4.2 for each intersection respectively.

With regard to intersections immediately south of the site (George Street/William Street and Edward Street/William Street), it should be noted that SIDRA modelling has not been undertaken. Further discussion is provided in Section 6.2.3 and Section 6.2.4 below.

6.2.1 THE PARADE/GEORGE STREET

6.2.1.1 Thursday PM Peak Period

During the Thursday pm peak period, The Parade and George Street intersection currently operates with a Level of Service (LoS) C or greater for all movements and a maximum Degree of Saturation (DoS) of 0.807 (refer Table 9). In comparison, analysis of the total traffic scenario indicates that the intersection will operate with a similar overall performance (to that of the base case) once the proposed development is complete.

Specifically, the maximum DoS reported was 0.853, while the intersection's LoS remained a LoS C. The analyses indicate that the maximum 95th percentile queue length (the western approach left lane on The Parade) will increase from 99.5 m (base case) to 149.9 m (total traffic). All other reported 95th percentile queue length difference remained within approximately 20 m of the existing.

It should be noted that there would be opportunities to further optimise the phasing of The Parade/George Street intersection for the total traffic scenario (for the purpose of this assessment, the existing cycle time of 128 seconds was retained). Nonetheless, the assessment undertaken indicates that the intersection of The Parade and George Street will continue to operate at a comparable and satisfactory level upon completion and occupation of the proposed development.

Table 9 – Key SIDRA analysis output for the analysis of The Parade/George Street intersection during the Thursday pm peak hour – base case (total traffic)

Movement	Degree of Saturation (DoS)	95th %ile Queue Length (m)	Level of Service (LoS)
George St (N) – Left	0.476 (0.364)	29.6 (24.1)	B (B)
George St (N) – Through	0.807 (0.705)	76.5 (56.0)	C (B)
George St (N) – Right	0.807 (0.705)	76.5 (56.0)	C (C)
The Parade (E) – Left	0.429 (0.577)	56.2 (75.7)	B (C)
The Parade (E) – Through	0.429 (0.577)	56.2 (75.7)	B (B)
The Parade (E) – Right	0.429 (0.577)	31.8 (25.5)	C (C)
George St (S) – Left	0.679 (0.628)	86.4 (75.9)	C (C)
George St (S) – Through	0.679 (0.628)	86.4 (75.9)	C (B)
George St (S) – Right	0.679 (0.628)	86.4 (75.9)	C (C)
The Parade (W) – Left	0.665 (0.853)	99.5 (149.9)	C (C)
The Parade (W) – Through	0.665 (0.853)	99.5 (149.9)	B (C)
The Parade (W) – Right	0.665 (0.853)	78.2 (91.2)	C (D)

6.2.1.2 Saturday Peak Period

Both the Saturday base case and total traffic scenarios perform better in comparison to the respective Thursday peak periods. Analysis of the Saturday base case indicates that the intersection operates with a maximum DoS of 0.712 and maximum 95th percentile queue length of 67.2 m (refer Table 10). The intersections current LoS was reported as B.

In comparison, analysis of the total traffic scenario indicates that The Parade and George Street intersection will operate with a maximum DoS of 0.674 and a maximum 95th percentile queue length of 76.0 m. The analysis also indicates that the intersections LoS B will remain unchanged as a result of the proposed development.

Given that minimal differences between the intersection's DoS and 95th percentile queue lengths were observed, it is considered that the intersection will remain operating satisfactorily once the proposed development is complete and occupied (i.e. the proposed development will have minimal impact on the overall performance of The Parade and George Street intersection).

Similarly to the Thursday pm peak, the intersection's existing 118 second cycle time has been retained. Further opportunities to optimise the intersection's performance would also be possible during the Saturday morning peak hour.

Table 10 – Key SIDRA analysis output for the analysis of The Parade/George Street intersection during the Saturday peak hour – base case (total traffic)

Movement	Degree of Saturation (DoS)	95th %ile Queue Length (m)	Level of Service (LoS)
George St (N) – Left	0.473 (0.375)	28.1 (26.3)	B (B)
George St (N) – Through	0.712 (0.623)	49.4 (46.7)	B (B)
George St (N) – Right	0.712 (0.623)	49.4 (46.7)	C (B)
The Parade (E) – Left	0.496 (0.628)	57.7 (69.4)	C (C)
The Parade (E) – Through	0.496 (0.628)	57.7 (69.4)	B (C)
The Parade (E) – Right	0.496 (0.628)	39.6 (41.3)	C (C)
George St (S) – Left	0.643 (0.606)	67.2 (71.9)	C (B)
George St (S) – Through	0.643 (0.606)	67.2 (71.9)	B (B)
George St (S) – Right	0.643 (0.606)	67.2 (71.9)	C (B)
The Parade (W) – Left	0.531 (0.674)	62.8 (76.0)	C (C)
The Parade (W) – Through	0.531 (0.674)	62.8 (76.0)	B (C)
The Parade (W) – Right	0.531 (0.674)	44.3 (46.7)	C (C)

The SIDRA analyses outputs for The Parade/George Street intersection (base case and total traffic scenarios) are attached in Appendix G.

6.2.2 THE PARADE/EDWARD STREET

6.2.2.1 Thursday PM Peak Period

Analyses of The Parade and Edward Street intersection (Thursday pm peak period) reported negligible changes of performance between the base case and total traffic scenarios. The maximum DoS increased from 0.388 to 0.391 (western approach) while the maximum 95th percentile queue length increased from 17.2 m to 17.8 m (western approach lane adjacent the central median) as a result of the proposed development (refer Table 11). The LoS for each movement did not change between the base case and total traffic scenarios. On the basis of the above, the intersection of The Parade and Edward Street will remain operating at a satisfactory level upon completion and occupation of the proposed development.

Table 11 - Key SIDRA analysis output for the analysis of The Parade/Edward Street intersection during the Thursday pm peak hour – base case (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left Turn	0.101 (0.105)	2.8 (2.9)	A (A)
The Parade (E) - Left	0.224 (0.226)	0.0 (0.0)	A (A)
The Parade (E) – Through	0.224 (0.226)	10.0 (10.2)	A (A)
The Parade (E) - Right	0.224 (0.226)	10.0 (10.2)	B (B)
Edward St (S) – Left Turn	0.198 (0.215)	6.2 (6.8)	A (A)
The Parade (W) - Left	0.388 (0.391)	0.0 (0.0)	A (A)
The Parade (W) – Through	0.388 (0.391)	17.2 (17.8)	A (A)
The Parade (W) - Right	0.388 (0.391)	17.2 (17.8)	A (A)

6.2.2.2 Saturday Peak Period

Analyses of The Parade/Edward Street intersection (Saturday peak) reported that the proposed development will have negligible impact on the existing operation of the intersection. Specifically, the analyses identified that the maximum DoS would increase marginally from 0.314 to 0.338 (southern Edward Street approach) while the maximum 95th percentile queue lengths would increase from 13.6 m to 13.9 m (Table 12). The LoS for each movement remained the same (A) for the base case and total traffic scenarios.

Table 12 - Key SIDRA analysis output for the analysis of The Parade/Edward Street intersection during the Saturday morning peak hour – base case (total traffic)

Movement	Degree of Saturation (DoS)	95 th %ile Queue Length (m)	Level of Service (LoS)
Edward St (N) – Left Turn	0.099 (0.103)	2.9 (3.0)	A (A)
The Parade (E) - Left	0.246 (0.249)	0.0 (0.0)	A (A)
The Parade (E) – Through	0.246 (0.249)	9.7 (9.9)	A (A)
The Parade (E) - Right	0.246 (0.249)	9.7 (9.9)	A (A)
Edward St (S) – Left Turn	0.314 (0.338)	10.9 (12.6)	A (A)
The Parade (W) - Left	0.316 (0.320)	0.0 (0.0)	A (A)
The Parade (W) – Through	0.316 (0.320)	13.6 (13.9)	A (A)
The Parade (W) - Right	0.316 (0.320)	13.6 (13.9)	A (A)

The SIDRA analyses outputs for The Parade/Edward Street intersection (base case and total traffic scenarios) are attached in Appendix H.

6.2.3 GEORGE STREET

The proposed development is forecast to generate and distribute approximately 20 additional peak hour vehicle movements south of the subject site on George Street (during both the Thursday pm and the Saturday peak hours). Such an increase is low (akin to daily fluctuations in traffic volumes) and would be readily accommodated on George Street with minimal impact.

To the south of the site, George Street intersects with William Street at a priority-controlled roundabout. Given that the additional vehicle movements forecast to use this roundabout are small, SIDRA analyses have not been undertaken. Due to the increased capacity of a roundabout (in comparison to a regular priority controlled four-way intersection), it is considered that the additional traffic volumes generated by the proposed development would result in negligible impact on the roundabout's existing performance and will be readily accommodated.

6.2.4 EDWARD STREET

An additional 50 Thursday pm and 60 Saturday peak hour movements (approximate) are forecast to be distributed south of the subject site on Edward Street. Similarly to that of George Street, the additional volumes distributed to the south are low and would have negligible impact on the existing operation of Edward Street.

Edward Street intersects with William Street at a priority controlled roundabout south of the subject site. While the number of additional movements forecast to use this roundabout are higher than those forecast to use the George Street roundabout, existing traffic volumes on Edward Street are lower than those on George Street (for this reason, SIDRA modelling has not been undertaken).

Taking into account the lower base case traffic volumes on Edward Street, it is considered that the additional traffic volumes generated by the proposed development will have negligible impact on the Edward Street/William Street roundabout's performance and will be readily accommodated.

7. SUMMARY

The proposal comprises the demolition of the existing retail development and the construction of 5,319 m² of non-residential floor area and 77 residential dwellings. The non-residential floor area will consist of a Coles supermarket, Liquorland, specialty retail, a medical or childcare centre and office floor space. The proposal will be serviced by a total of 440 vehicle parking spaces, of which 93 will be reserved for use by residents.

Vehicle access to the site will be provided via two crossovers on George Street and two on Edward Street (the site's general existing crossover locations will be retained). Pedestrian access to the site will be provided via the site's frontages to The Parade, George Street, Edward Street and Coke Park/Coke Street.

Refuse collection and loading will primarily occur within a designated loading dock/service area located behind the Coles tenancy. Appropriate on-site turn around provisions have been made so that such vehicles will be able to enter and exit the site (to/from George Street) in a forward direction.

Additional (albeit infrequent) commercial vehicle movements will access the site via Edward Street. Such movements will primarily be associated with servicing of the adjoining retail tenancies fronting The Parade (due to an existing right-of-way). Adequate on-site provision has been made to allow drivers to enter and exit the site in a forward direction.

Based upon the City of Norwood, Payneham and St Peters' Development Plan, the proposed development would have a theoretical requirement for between 262 and 422 parking spaces. Given that 440 parking spaces will be provided throughout the site, the proposed development's theoretical parking requirements will be readily accommodated on-site.

In addition to the above, the site's parking Encumbrance requires that 347 non-residential parking spaces be provided on the subject site (equivalent to a parking rate of 6.64 spaces per 100 m²). As 347 non-residential parking spaces will be provided throughout the site, the requirements of the parking Encumbrance will be satisfied.

With regard to bicycle parking, Council's Development Plan identifies a total requirement for 111 bicycle parking spaces. Given that 120 spaces will be provided across the site, adequate bicycle parking provisions will be provided throughout the site in order to satisfy the requirements of Council's Development Plan. Additional bicycle parking opportunities are also available within the various residential dwellings (it is common for high-end bicycles to be stored within a dwelling).

The proposed development is forecast to generate an additional 122 Thursday pm peak hour and 154 Saturday peak hour movements. SIDRA modelling of the site's access points indicates that the traffic forecast to be generated by the proposed development will be readily accommodated at the site's access points with minimal queues and delays.

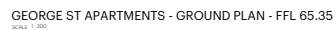
Additional modelling of external intersections (The Parade/George Street and The Parade/Edward Street) indicates that the traffic generated by the proposed development will be readily accommodated with minimal impact on their existing operation. Importantly, the analyses indicate that The Parade/George Street and The Parade/Edward Street intersections will accommodate the increased vehicle movements within their existing configurations.

With regard to the George Street and Edward Street roundabouts south of the site (both intersecting with William Street), the additional number of vehicle movements anticipated to use the respective intersection is forecast to be low during both the Thursday pm and Saturday peak hour periods. Taking this into account (and the increased capacity of roundabout in comparison to a regular priority-controlled four-way intersection), it is considered that the additional movements would be readily accommodated with minimal impact on the performance of the two roundabouts.

APPENDIX A

PLANS PREPARED BY STUDIO NINE

DATED 14 OCTOBER 2019



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All dimensions shall be checked on site. Any discrepancies shall be reported to the Architect for clarification. Written dimensions shall take precedence over scaled dimensions. These drawings shall be read in conjunction with all associated Specifications, documents and reports.

9 King William Street T +61 8 8332 3099 hello@studionine.net.au
Karek Town SA 5067 F +61 8 8363 7499 studionine.net.au
Australia



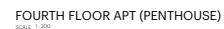
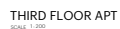
NAME	AREA
MEDICAL CENTRE	670.5 m ²
OFFICE	423.5 m ²
OFFICE (ACQUIRED FROM RETAIL)	192.0 m ²
GRAND TOTAL	1086.0 m²



ISSUE:	DCA	DATE ISSUED:	14/10/2019	D/A PLAN:	NH 14/10/2019
SHEET:	6 OF 15	DRAWN:	PMING	D/A BUILD:	
SCALE AT A/D:	1:200	CHECKED:	NH	TENDER:	
FIRST ISSUED:	14/10/2019			CONEST:	

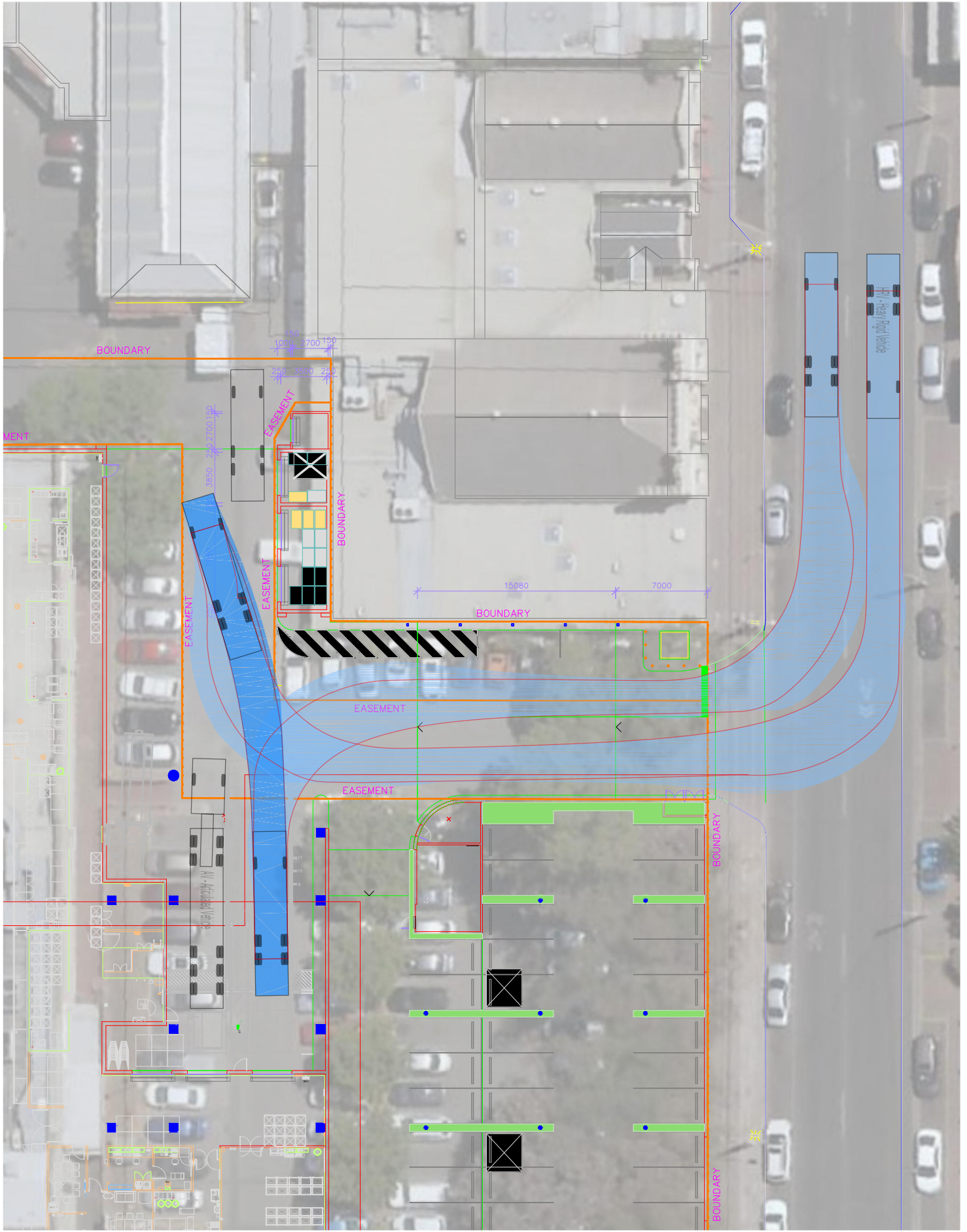
Rev	Date	Amendment
A	14.10.2019	ISSUED FOR APPROVAL





APPENDIX B

CIRQA PLANS (C19020_06 SH01 to SH04) GEORGE STREET (NORTHERN) ACCESS - TURN PATH OF VARIOUS COMMERCIAL VEHICLES



ABN: 12 681 029 983 | PO Box 144, Glenside SA 5065 | E: info@cirqa.com.au

DRAWING AMENDMENTS

REV	DATE	DESCRIPTION	DWN	CHK
A	02/07/2019	TURN PATH	TAW	BNW
C	14/10/2019	UPDATED PLANS	TAW	BNW

C19020_06C.DWG

14/10/2019 2:29 PM



N
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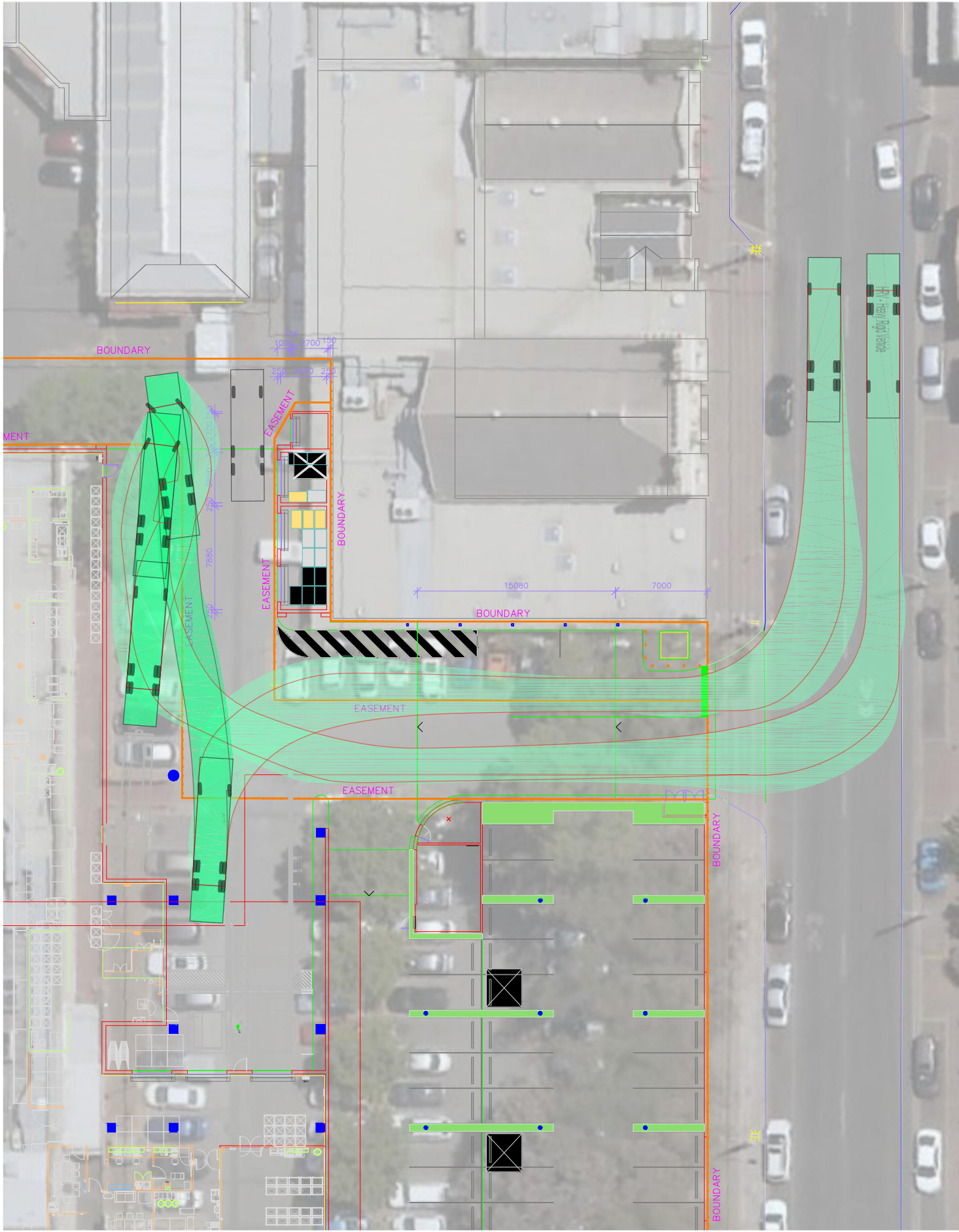
COLES NORWOOD GEORGE STREET LOADING AREA

COLES 12.5 m HRV

PROJECT # 19020

SHEET # 06_SH02

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DRAWING AMENDMENTS

REV	DATE	DESCRIPTION	DWN	CHK
A	02/07/2019	TURN PATH	TAW	BNW
C	14/10/2019	UPDATED PLANS	TAW	BNW

C19020_06C.DWG

14/10/2019 2:29 PM

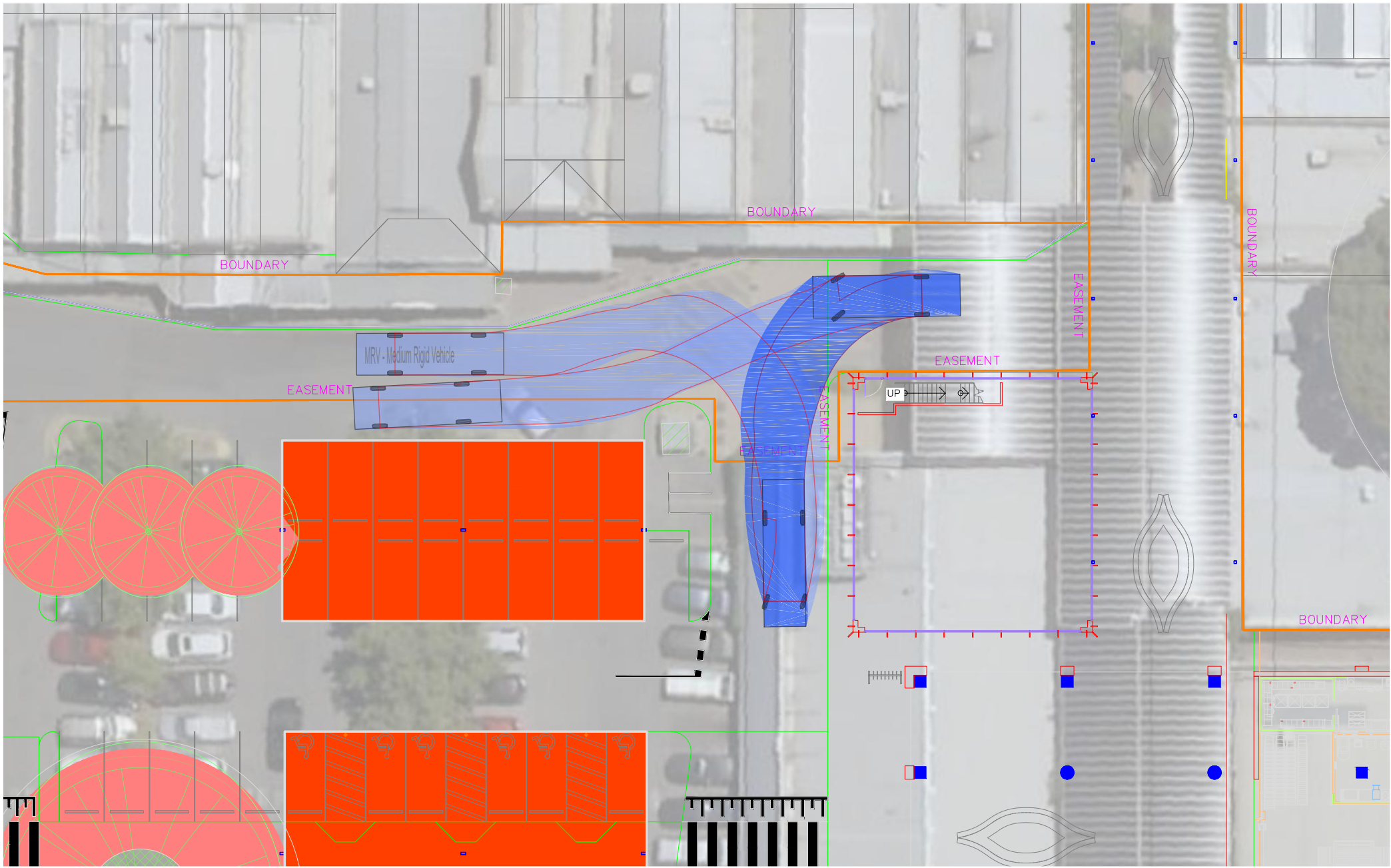


N
1:250
@ A3

COLES NORWOOD
GEORGE STREET LOADING AREA
COLES 12.5 m REFUSE COMPACTOR
PROJECT # 19020 SHEET # 06_SH03

APPENDIX C

**CIRQA PLAN (C19020_06 SH05)
EDWARD STREET (NORTHERN) ACCESS - TURN
PATH OF 8.8 M MRV**

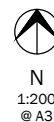


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DRAWING AMENDMENTS					
REV	DATE	DESCRIPTION	DWN	CHK	
A	02/07/2019	TURN PATH	TAW	BNW	
C	14/10/2019	UPDATED PLANS	TAW	BNW	

C19020_06C.DWG 14/10/2019 2:29 PM



COLES NORWOOD REDEVELOPMENT
EDWARD STREET RIGHT-OF-WAY
ADJOINING TENANCIES - 8.8 m MRV (SERVICE VEHICLE)
PROJECT # 19020 SHEET # 06_SH05

APPENDIX D

SIDRA ANALYSIS – SOUTHERN GEORGE STREET ACCESS

APPENDIX D.1

SOUTHERN GEORGE STREET ACCESS - THURSDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

 **Site: 101 [George Street Access South - Thursday PM]**

New Site

Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	47.5 km/h	47.5 km/h
Travel Distance (Total)	552.7 veh-km/h	663.3 pers-km/h
Travel Time (Total)	11.6 veh-h/h	14.0 pers-h/h
Demand Flows (Total)	818 veh/h	981 pers/h
Percent Heavy Vehicles (Demand)	0.4 %	
Degree of Saturation	0.185	
Practical Spare Capacity	428.4 %	
Effective Intersection Capacity	4410 veh/h	
Control Delay (Total)	0.49 veh-h/h	0.59 pers-h/h
Control Delay (Average)	2.2 sec	2.2 sec
Control Delay (Worst Lane)	6.2 sec	
Control Delay (Worst Movement)	7.6 sec	7.6 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	0.6 sec	
Idling Time (Average)	0.0 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	0.6 veh	
95% Back of Queue - Distance (Worst Lane)	4.0 m	
Queue Storage Ratio (Worst Lane)	0.01	
Total Effective Stops	168 veh/h	202 pers/h
Effective Stop Rate	0.21 per veh	0.21 per pers
Proportion Queued	0.16	0.16
Performance Index	13.4	13.4
Cost (Total)	277.97 \$/h	277.97 \$/h
Fuel Consumption (Total)	38.1 L/h	
Carbon Dioxide (Total)	89.6 kg/h	
Hydrocarbons (Total)	0.006 kg/h	
Carbon Monoxide (Total)	0.071 kg/h	
NOx (Total)	0.029 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	392,590 veh/y	471,107 pers/y
Delay	237 veh-h/y	284 pers-h/y
Effective Stops	80,800 veh/y	96,960 pers/y
Travel Distance	265,306 veh-km/y	318,367 pers-km/y
Travel Time	5,583 veh-h/y	6,700 pers-h/y
Cost	133,428 \$/y	133,428 \$/y
Fuel Consumption	18,295 L/y	
Carbon Dioxide	43,021 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	34 kg/y	
NOx	14 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [George Street Access South - Thursday PM]**

New Site
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George Street (S)											
1	L2	44	0.0	0.175	4.6	LOS A	0.0	0.0	0.00	0.07	49.1
2	T1	299	1.0	0.175	0.0	LOS A	0.0	0.0	0.00	0.07	49.3
Approach		343	0.9	0.175	0.6	NA	0.0	0.0	0.00	0.07	49.3
North: George Street (N)											
8	T1	242	0.0	0.185	0.6	LOS A	0.6	4.0	0.20	0.15	47.9
9	R2	80	0.0	0.185	6.0	LOS A	0.6	4.0	0.20	0.15	46.6
Approach		322	0.0	0.185	1.9	NA	0.6	4.0	0.20	0.15	47.6
West: Site Access (W)											
10	L2	111	0.0	0.147	5.7	LOS A	0.6	4.0	0.41	0.63	43.4
12	R2	42	0.0	0.147	7.6	LOS A	0.6	4.0	0.41	0.63	45.3
Approach		153	0.0	0.147	6.2	LOS A	0.6	4.0	0.41	0.63	44.1
All Vehicles		818	0.4	0.185	2.2	NA	0.6	4.0	0.16	0.21	47.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\cirqauser\Cirqa Pty Ltd\Cirqa Pty Ltd Team Site - Public\2019\19020 Coles Norwood Redevelopment\SIDRA\19020 COLES Access Points 15OCT19.sip7

APPENDIX D.2

SOUTHERN GEORGE STREET ACCESS - SATURDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101 [George Street Access South - Saturday]

New Site

Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	47.0 km/h	47.0 km/h
Travel Distance (Total)	589.9 veh-km/h	707.9 pers-km/h
Travel Time (Total)	12.5 veh-h/h	15.1 pers-h/h
Demand Flows (Total)	861 veh/h	1033 pers/h
Percent Heavy Vehicles (Demand)	1.2 %	
Degree of Saturation	0.198	
Practical Spare Capacity	324.5 %	
Effective Intersection Capacity	4351 veh/h	
Control Delay (Total)	0.63 veh-h/h	0.76 pers-h/h
Control Delay (Average)	2.6 sec	2.6 sec
Control Delay (Worst Lane)	6.2 sec	
Control Delay (Worst Movement)	7.7 sec	7.7 sec
Geometric Delay (Average)	1.9 sec	
Stop-Line Delay (Average)	0.7 sec	
Idling Time (Average)	0.0 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	0.8 veh	
95% Back of Queue - Distance (Worst Lane)	5.3 m	
Queue Storage Ratio (Worst Lane)	0.02	
Total Effective Stops	220 veh/h	263 pers/h
Effective Stop Rate	0.25 per veh	0.25 per pers
Proportion Queued	0.19	0.19
Performance Index	15.1	15.1
Cost (Total)	306.18 \$/h	306.18 \$/h
Fuel Consumption (Total)	43.1 L/h	
Carbon Dioxide (Total)	101.4 kg/h	
Hydrocarbons (Total)	0.007 kg/h	
Carbon Monoxide (Total)	0.081 kg/h	
NOx (Total)	0.057 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	413,305 veh/y	495,966 pers/y
Delay	303 veh-h/y	364 pers-h/y
Effective Stops	105,379 veh/y	126,454 pers/y
Travel Distance	283,156 veh-km/y	339,787 pers-km/y
Travel Time	6,021 veh-h/y	7,225 pers-h/y
Cost	146,968 \$/y	146,968 \$/y
Fuel Consumption	20,665 L/y	
Carbon Dioxide	48,695 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	39 kg/y	
NOx	27 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [George Street Access South - Saturday]**

New Site
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George Street (S)											
1	L2	57	0.0	0.169	4.6	LOS A	0.0	0.0	0.00	0.09	48.9
2	T1	269	3.0	0.169	0.0	LOS A	0.0	0.0	0.00	0.09	49.1
Approach		326	2.5	0.169	0.8	NA	0.0	0.0	0.00	0.09	49.1
North: George Street (N)											
8	T1	231	1.0	0.198	0.7	LOS A	0.7	5.0	0.24	0.19	47.5
9	R2	104	0.0	0.198	5.9	LOS A	0.7	5.0	0.24	0.19	46.2
Approach		335	0.7	0.198	2.3	NA	0.7	5.0	0.24	0.19	47.1
West: Site Access (W)											
10	L2	145	0.0	0.188	5.6	LOS A	0.8	5.3	0.40	0.63	43.5
12	R2	55	0.0	0.188	7.7	LOS A	0.8	5.3	0.40	0.63	45.3
Approach		200	0.0	0.188	6.2	LOS A	0.8	5.3	0.40	0.63	44.1
All Vehicles		861	1.2	0.198	2.6	NA	0.8	5.3	0.19	0.25	47.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Access Points 15OCT19.sip7

APPENDIX E

SIDRA ANALYSIS – NORTHERN EDWARD STREET ACCESS

APPENDIX E.1

NORTHERN EDWARD STREET ACCESS - THURSDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101 [Edward Street Access North - Thursday PM]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	48.3 km/h	48.3 km/h
Travel Distance (Total)	540.3 veh-km/h	648.4 pers-km/h
Travel Time (Total)	11.2 veh-h/h	13.4 pers-h/h
Demand Flows (Total)	535 veh/h	642 pers/h
Percent Heavy Vehicles (Demand)	1.0 %	
Degree of Saturation	0.159	
Practical Spare Capacity	516.9 %	
Effective Intersection Capacity	3366 veh/h	
Control Delay (Total)	0.28 veh-h/h	0.33 pers-h/h
Control Delay (Average)	1.9 sec	1.9 sec
Control Delay (Worst Lane)	6.4 sec	
Control Delay (Worst Movement)	6.6 sec	6.6 sec
Geometric Delay (Average)	1.4 sec	
Stop-Line Delay (Average)	0.5 sec	
Idling Time (Average)	0.0 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	0.7 veh	
95% Back of Queue - Distance (Worst Lane)	4.9 m	
Queue Storage Ratio (Worst Lane)	0.00	
Total Effective Stops	97 veh/h	116 pers/h
Effective Stop Rate	0.18 per veh	0.18 per pers
Proportion Queued	0.17	0.17
Performance Index	13.0	13.0
Cost (Total)	246.37 \$/h	246.37 \$/h
Fuel Consumption (Total)	36.4 L/h	
Carbon Dioxide (Total)	85.8 kg/h	
Hydrocarbons (Total)	0.006 kg/h	
Carbon Monoxide (Total)	0.067 kg/h	
NOx (Total)	0.050 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	256,674 veh/y	308,008 pers/y
Delay	134 veh-h/y	160 pers-h/y
Effective Stops	46,429 veh/y	55,715 pers/y
Travel Distance	259,340 veh-km/y	311,208 pers-km/y
Travel Time	5,366 veh-h/y	6,440 pers-h/y
Cost	118,257 \$/y	118,257 \$/y
Fuel Consumption	17,477 L/y	
Carbon Dioxide	41,208 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	32 kg/y	
NOx	24 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Edward Street Access North - Thursday PM]**

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward Street (S)											
8	T1	166	1.0	0.159	0.5	LOS A	0.7	4.9	0.27	0.22	48.1
9	R2	106	1.0	0.159	5.4	LOS A	0.7	4.9	0.27	0.22	47.2
Approach		273	1.0	0.159	2.4	NA	0.7	4.9	0.27	0.22	47.8
East: Site Access (E)											
10	L2	8	1.0	0.054	5.2	LOS A	0.2	1.3	0.39	0.63	45.5
12	R2	39	1.0	0.054	6.6	LOS A	0.2	1.3	0.39	0.63	45.2
Approach		47	1.0	0.054	6.4	LOS A	0.2	1.3	0.39	0.63	45.2
North: Edward Street (N)											
1	L2	11	1.0	0.110	4.6	LOS A	0.0	0.0	0.00	0.03	49.3
2	T1	204	1.0	0.110	0.0	LOS A	0.0	0.0	0.00	0.03	49.8
Approach		215	1.0	0.110	0.2	NA	0.0	0.0	0.00	0.03	49.8
All Vehicles		535	1.0	0.159	1.9	NA	0.7	4.9	0.17	0.18	48.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX E.2

NORTHERN EDWARD STREET ACCESS - SATURDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101 [Edward Street Access North - Saturday]

New Site

Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	48.2 km/h	48.2 km/h
Travel Distance (Total)	693.5 veh-km/h	832.1 pers-km/h
Travel Time (Total)	14.4 veh-h/h	17.3 pers-h/h
Demand Flows (Total)	686 veh/h	824 pers/h
Percent Heavy Vehicles (Demand)	1.0 %	
Degree of Saturation	0.227	
Practical Spare Capacity	331.7 %	
Effective Intersection Capacity	3023 veh/h	
Control Delay (Total)	0.39 veh-h/h	0.47 pers-h/h
Control Delay (Average)	2.1 sec	2.1 sec
Control Delay (Worst Lane)	7.2 sec	
Control Delay (Worst Movement)	7.6 sec	7.6 sec
Geometric Delay (Average)	1.4 sec	
Stop-Line Delay (Average)	0.6 sec	
Idling Time (Average)	0.1 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	1.0 veh	
95% Back of Queue - Distance (Worst Lane)	7.1 m	
Queue Storage Ratio (Worst Lane)	0.01	
Total Effective Stops	132 veh/h	158 pers/h
Effective Stop Rate	0.19 per veh	0.19 per pers
Proportion Queued	0.20	0.20
Performance Index	17.0	17.0
Cost (Total)	319.36 \$/h	319.36 \$/h
Fuel Consumption (Total)	47.1 L/h	
Carbon Dioxide (Total)	111.1 kg/h	
Hydrocarbons (Total)	0.007 kg/h	
Carbon Monoxide (Total)	0.087 kg/h	
NOx (Total)	0.065 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	329,432 veh/y	395,318 pers/y
Delay	188 veh-h/y	226 pers-h/y
Effective Stops	63,180 veh/y	75,816 pers/y
Travel Distance	332,858 veh-km/y	399,429 pers-km/y
Travel Time	6,906 veh-h/y	8,287 pers-h/y
Cost	153,294 \$/y	153,294 \$/y
Fuel Consumption	22,611 L/y	
Carbon Dioxide	53,312 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	42 kg/y	
NOx	31 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Edward Street Access North - Saturday]**

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward Street (S)											
8	T1	252	1.0	0.227	0.5	LOS A	1.0	7.1	0.28	0.21	48.2
9	R2	139	1.0	0.227	5.5	LOS A	1.0	7.1	0.28	0.21	47.3
Approach		391	1.0	0.227	2.3	NA	1.0	7.1	0.28	0.21	47.9
East: Site Access (E)											
10	L2	12	1.0	0.081	5.3	LOS A	0.3	1.9	0.43	0.69	45.1
12	R2	51	1.0	0.081	7.6	LOS A	0.3	1.9	0.43	0.69	44.7
Approach		62	1.0	0.081	7.2	LOS A	0.3	1.9	0.43	0.69	44.8
North: Edward Street (N)											
1	L2	14	1.0	0.120	4.6	LOS A	0.0	0.0	0.00	0.03	49.3
2	T1	220	1.0	0.120	0.0	LOS A	0.0	0.0	0.00	0.03	49.8
Approach		234	1.0	0.120	0.3	NA	0.0	0.0	0.00	0.03	49.8
All Vehicles		686	1.0	0.227	2.1	NA	1.0	7.1	0.20	0.19	48.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX F

SIDRA ANALYSIS – SOUTHERN EDWARD STREET ACCESS

APPENDIX F.1

SOUTHERN EDWARD STREET ACCESS - THURSDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

 Site: 101 [Edward Street Access South - Thursday PM]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	48.5 km/h	48.5 km/h
Travel Distance (Total)	629.9 veh-km/h	755.9 pers-km/h
Travel Time (Total)	13.0 veh-h/h	15.6 pers-h/h
Demand Flows (Total)	623 veh/h	748 pers/h
Percent Heavy Vehicles (Demand)	0.7 %	
Degree of Saturation	0.163	
Practical Spare Capacity	501.8 %	
Effective Intersection Capacity	3826 veh/h	
Control Delay (Total)	0.32 veh-h/h	0.38 pers-h/h
Control Delay (Average)	1.8 sec	1.8 sec
Control Delay (Worst Lane)	5.8 sec	
Control Delay (Worst Movement)	6.9 sec	6.9 sec
Geometric Delay (Average)	1.4 sec	
Stop-Line Delay (Average)	0.4 sec	
Idling Time (Average)	0.0 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	0.5 veh	
95% Back of Queue - Distance (Worst Lane)	3.4 m	
Queue Storage Ratio (Worst Lane)	0.00	
Total Effective Stops	111 veh/h	133 pers/h
Effective Stop Rate	0.18 per veh	0.18 per pers
Proportion Queued	0.14	0.14
Performance Index	14.4	14.4
Cost (Total)	284.02 \$/h	284.02 \$/h
Fuel Consumption (Total)	41.5 L/h	
Carbon Dioxide (Total)	97.7 kg/h	
Hydrocarbons (Total)	0.006 kg/h	
Carbon Monoxide (Total)	0.076 kg/h	
NOx (Total)	0.042 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	299,116 veh/y	358,939 pers/y
Delay	151 veh-h/y	181 pers-h/y
Effective Stops	53,248 veh/y	63,898 pers/y
Travel Distance	302,374 veh-km/y	362,848 pers-km/y
Travel Time	6,240 veh-h/y	7,488 pers-h/y
Cost	136,329 \$/y	136,329 \$/y
Fuel Consumption	19,917 L/y	
Carbon Dioxide	46,913 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	37 kg/y	
NOx	20 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Edward Street Access South - Thursday PM]**

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward Street (S)											
8	T1	231	1.0	0.163	0.3	LOS A	0.5	3.4	0.17	0.13	48.9
9	R2	65	0.0	0.163	5.3	LOS A	0.5	3.4	0.17	0.13	48.0
Approach		296	0.8	0.163	1.4	NA	0.5	3.4	0.17	0.13	48.7
East: Site Access (E)											
10	L2	73	0.0	0.105	5.2	LOS A	0.4	2.7	0.32	0.59	45.9
12	R2	42	0.0	0.105	6.9	LOS A	0.4	2.7	0.32	0.59	45.5
Approach		115	0.0	0.105	5.8	LOS A	0.4	2.7	0.32	0.59	45.7
North: Edward Street (N)											
1	L2	12	0.0	0.109	4.6	LOS A	0.0	0.0	0.00	0.03	49.3
2	T1	201	1.0	0.109	0.0	LOS A	0.0	0.0	0.00	0.03	49.8
Approach		213	0.9	0.109	0.3	NA	0.0	0.0	0.00	0.03	49.8
All Vehicles		623	0.7	0.163	1.8	NA	0.5	3.4	0.14	0.18	48.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX F.2

SOUTHERN EDWARD STREET ACCESS - SATURDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101 [Edward Street Access South - Saturday]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	48.1 km/h	48.1 km/h
Travel Distance (Total)	671.6 veh-km/h	805.9 pers-km/h
Travel Time (Total)	14.0 veh-h/h	16.8 pers-h/h
Demand Flows (Total)	664 veh/h	797 pers/h
Percent Heavy Vehicles (Demand)	0.6 %	
Degree of Saturation	0.160	
Practical Spare Capacity	474.2 %	
Effective Intersection Capacity	4141 veh/h	
Control Delay (Total)	0.42 veh-h/h	0.50 pers-h/h
Control Delay (Average)	2.3 sec	2.3 sec
Control Delay (Worst Lane)	5.9 sec	
Control Delay (Worst Movement)	7.0 sec	7.0 sec
Geometric Delay (Average)	1.7 sec	
Stop-Line Delay (Average)	0.5 sec	
Idling Time (Average)	0.0 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	0.6 veh	
95% Back of Queue - Distance (Worst Lane)	4.2 m	
Queue Storage Ratio (Worst Lane)	0.00	
Total Effective Stops	148 veh/h	177 pers/h
Effective Stop Rate	0.22 per veh	0.22 per pers
Proportion Queued	0.18	0.18
Performance Index	15.8	15.8
Cost (Total)	309.99 \$/h	309.99 \$/h
Fuel Consumption (Total)	45.0 L/h	
Carbon Dioxide (Total)	106.1 kg/h	
Hydrocarbons (Total)	0.007 kg/h	
Carbon Monoxide (Total)	0.083 kg/h	
NOx (Total)	0.044 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	318,821 veh/y	382,585 pers/y
Delay	200 veh-h/y	240 pers-h/y
Effective Stops	70,857 veh/y	85,028 pers/y
Travel Distance	322,359 veh-km/y	386,831 pers-km/y
Travel Time	6,700 veh-h/y	8,040 pers-h/y
Cost	148,798 \$/y	148,798 \$/y
Fuel Consumption	21,619 L/y	
Carbon Dioxide	50,908 kg/y	
Hydrocarbons	3 kg/y	
Carbon Monoxide	40 kg/y	
NOx	21 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Edward Street Access South - Saturday]**

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward Street (S)											
8	T1	197	1.0	0.160	0.4	LOS A	0.6	4.2	0.23	0.17	48.5
9	R2	85	0.0	0.160	5.4	LOS A	0.6	4.2	0.23	0.17	47.6
Approach		282	0.7	0.160	1.9	NA	0.6	4.2	0.23	0.17	48.2
East: Site Access (E)											
10	L2	96	0.0	0.139	5.3	LOS A	0.5	3.7	0.34	0.60	45.8
12	R2	55	0.0	0.139	7.0	LOS A	0.5	3.7	0.34	0.60	45.4
Approach		151	0.0	0.139	5.9	LOS A	0.5	3.7	0.34	0.60	45.7
North: Edward Street (N)											
1	L2	15	0.0	0.119	4.6	LOS A	0.0	0.0	0.00	0.03	49.3
2	T1	217	1.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.03	49.8
Approach		232	0.9	0.119	0.3	NA	0.0	0.0	0.00	0.03	49.8
All Vehicles		664	0.6	0.160	2.3	NA	0.6	4.2	0.18	0.22	48.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX G

SIDRA ANALYSIS - THE PARADE/GEORGE STREET

APPENDIX G.1

THE PARADE/GEORGE STREET - THURSDAY - BASE CASE

INTERSECTION SUMMARY

 **Site: 101 [The Parade/George St - Existing Thursday PM]**

New Site

Signals - Fixed Time Isolated Cycle Time = 128 seconds (User-Given Phase Times)

Intersection Performance - Hourly Values			
Performance Measure	Vehicles	Pedestrians	Persons
Travel Speed (Average)	37.4 km/h	3.1 km/h	36.2 km/h
Travel Distance (Total)	1988.6 veh-km/h	7.5 ped-km/h	2393.8 pers-km/h
Travel Time (Total)	53.1 veh-h/h	2.4 ped-h/h	66.2 pers-h/h
Demand Flows (Total)	2327 veh/h	211 ped/h	3003 pers/h
Percent Heavy Vehicles (Demand)	1.3 %		
Degree of Saturation	0.807	0.022	
Practical Spare Capacity	11.5 %		
Effective Intersection Capacity	2884 veh/h		
Control Delay (Total)	13.20 veh-h/h	0.81 ped-h/h	16.65 pers-h/h
Control Delay (Average)	20.4 sec	13.8 sec	20.0 sec
Control Delay (Worst Lane)	28.7 sec		
Control Delay (Worst Movement)	31.4 sec	20.6 sec	31.4 sec
Geometric Delay (Average)	1.4 sec		
Stop-Line Delay (Average)	19.0 sec		
Idling Time (Average)	15.2 sec		
Intersection Level of Service (LOS)	LOS C	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	14.0 veh		
95% Back of Queue - Distance (Worst Lane)	99.5 m		
Queue Storage Ratio (Worst Lane)	0.16		
Total Effective Stops	1793 veh/h	128 ped/h	2279 pers/h
Effective Stop Rate	0.77 per veh	0.61 per ped	0.76 per pers
Proportion Queued	0.86	0.61	0.84
Performance Index	156.0	3.1	159.1
Cost (Total)	1456.84 \$/h	60.58 \$/h	1517.42 \$/h
Fuel Consumption (Total)	175.3 L/h		
Carbon Dioxide (Total)	413.4 kg/h		
Hydrocarbons (Total)	0.032 kg/h		
Carbon Monoxide (Total)	0.333 kg/h		
NOx (Total)	0.304 kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values			
Performance Measure	Vehicles	Pedestrians	Persons
Demand Flows (Total)	1,117,137 veh/y	101,053 ped/y	1,441,617 pers/y
Delay	6,335 veh-h/y	388 ped-h/y	7,990 pers-h/y
Effective Stops	860,668 veh/y	61,319 ped/y	1,094,120 pers/y
Travel Distance	954,520 veh-km/y	3,585 ped-km/y	1,149,009 pers-km/y
Travel Time	25,501 veh-h/y	1,154 ped-h/y	31,755 pers-h/y
Cost	699,283 \$/y	29,077 \$/y	728,360 \$/y
Fuel Consumption	84,151 L/y		
Carbon Dioxide	198,429 kg/y		
Hydrocarbons	15 kg/y		
Carbon Monoxide	160 kg/y		
NOx	146 kg/y		

MOVEMENT SUMMARY



Site: 101 [The Parade/George St - Existing Thursday PM]

New Site

Signals - Fixed Time Isolated Cycle Time = 128 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George St (S)											
1	L2	63	0.0	0.679	25.6	LOS C	12.3	86.4	0.92	0.81	36.6
2	T1	233	1.0	0.679	21.0	LOS C	12.3	86.4	0.92	0.81	38.1
3	R2	91	0.0	0.679	25.6	LOS C	12.3	86.4	0.92	0.81	36.6
Approach		386	0.6	0.679	22.8	LOS C	12.3	86.4	0.92	0.81	37.5
East: The Parade (E)											
4	L2	64	0.0	0.429	18.8	LOS B	7.9	56.2	0.75	0.67	40.1
5	T1	399	3.0	0.429	16.4	LOS B	7.9	56.2	0.79	0.69	38.1
6	R2	52	0.0	0.429	26.4	LOS C	4.5	31.8	0.87	0.74	36.4
Approach		515	2.3	0.429	17.7	LOS B	7.9	56.2	0.79	0.69	38.2
North: George St (N)											
7	L2	176	0.0	0.476	19.1	LOS B	4.2	29.6	0.71	0.73	38.2
8	T1	181	0.0	0.807	26.9	LOS C	10.9	76.5	0.89	0.85	35.9
9	R2	123	0.0	0.807	31.4	LOS C	10.9	76.5	0.89	0.85	34.3
Approach		480	0.0	0.807	25.2	LOS C	10.9	76.5	0.82	0.81	36.3
West: The Parade (W)											
10	L2	92	0.0	0.665	20.8	LOS C	14.0	99.5	0.86	0.77	39.2
11	T1	796	2.0	0.665	17.8	LOS B	14.0	99.5	0.88	0.78	37.5
12	R2	59	0.0	0.665	24.3	LOS C	11.0	78.2	0.91	0.79	37.7
Approach		946	1.7	0.665	18.5	LOS B	14.0	99.5	0.88	0.78	37.7
All Vehicles		2327	1.3	0.807	20.4	LOS C	14.0	99.5	0.86	0.77	37.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	13.8	LOS B	0.1	0.1	0.66	0.66	
P2	East Full Crossing	53	20.6	LOS C	0.1	0.1	0.80	0.80	
P3	North Full Crossing	53	1.1	LOS A	0.0	0.0	0.19	0.19	
P4	West Full Crossing	53	19.8	LOS B	0.1	0.1	0.78	0.78	
All Pedestrians		211	13.8	LOS B			0.61	0.61	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

APPENDIX G.2

THE PARADE/GEORGE STREET - THURSDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

 **Site: 101 [The Parade/George St - Future Thursday PM]**

New Site

Signals - Fixed Time Isolated Cycle Time = 128 seconds (User-Given Phase Times)

Intersection Performance - Hourly Values			
Performance Measure	Vehicles	Pedestrians	Persons
Travel Speed (Average)	35.9 km/h	3.2 km/h	34.8 km/h
Travel Distance (Total)	2029.3 veh-km/h	7.5 ped-km/h	2442.6 pers-km/h
Travel Time (Total)	56.5 veh-h/h	2.4 ped-h/h	70.1 pers-h/h
Demand Flows (Total)	2371 veh/h	211 ped/h	3055 pers/h
Percent Heavy Vehicles (Demand)	1.3 %		
Degree of Saturation	0.853	0.017	
Practical Spare Capacity	5.5 %		
Effective Intersection Capacity	2778 veh/h		
Control Delay (Total)	15.72 veh-h/h	0.76 ped-h/h	19.63 pers-h/h
Control Delay (Average)	23.9 sec	13.0 sec	23.1 sec
Control Delay (Worst Lane)	35.4 sec		
Control Delay (Worst Movement)	39.2 sec	17.7 sec	39.2 sec
Geometric Delay (Average)	1.4 sec		
Stop-Line Delay (Average)	22.4 sec		
Idling Time (Average)	18.3 sec		
Intersection Level of Service (LOS)	LOS C	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	21.1 veh		
95% Back of Queue - Distance (Worst Lane)	149.9 m		
Queue Storage Ratio (Worst Lane)	0.24		
Total Effective Stops	1973 veh/h	125 ped/h	2492 pers/h
Effective Stop Rate	0.83 per veh	0.59 per ped	0.82 per pers
Proportion Queued	0.90	0.59	0.88
Performance Index	169.2	3.0	172.2
Cost (Total)	1573.50 \$/h	59.35 \$/h	1632.85 \$/h
Fuel Consumption (Total)	184.1 L/h		
Carbon Dioxide (Total)	434.0 kg/h		
Hydrocarbons (Total)	0.034 kg/h		
Carbon Monoxide (Total)	0.351 kg/h		
NOx (Total)	0.324 kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values			
Performance Measure	Vehicles	Pedestrians	Persons
Demand Flows (Total)	1,137,853 veh/y	101,053 ped/y	1,466,476 pers/y
Delay	7,547 veh-h/y	364 ped-h/y	9,420 pers-h/y
Effective Stops	946,993 veh/y	59,934 ped/y	1,196,325 pers/y
Travel Distance	974,054 veh-km/y	3,585 ped-km/y	1,172,449 pers-km/y
Travel Time	27,105 veh-h/y	1,130 ped-h/y	33,656 pers-h/y
Cost	755,278 \$/y	28,488 \$/y	783,766 \$/y
Fuel Consumption	88,351 L/y		
Carbon Dioxide	208,322 kg/y		
Hydrocarbons	16 kg/y		
Carbon Monoxide	168 kg/y		
NOx	155 kg/y		

MOVEMENT SUMMARY

 **Site: 101 [The Parade/George St - Future Thursday PM]**

New Site

Signals - Fixed Time Isolated Cycle Time = 128 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George St (S)											
1	L2	68	0.0	0.628	22.2	LOS C	10.8	75.9	0.87	0.78	38.0
2	T1	241	1.0	0.628	17.7	LOS B	10.8	75.9	0.87	0.78	39.4
3	R2	100	0.0	0.628	22.3	LOS C	10.8	75.9	0.87	0.78	38.0
Approach		409	0.6	0.628	19.6	LOS B	10.8	75.9	0.87	0.78	38.9
East: The Parade (E)											
4	L2	68	0.0	0.577	22.4	LOS C	10.6	75.7	0.86	0.75	38.5
5	T1	401	3.0	0.577	19.7	LOS B	10.6	75.7	0.88	0.76	36.5
6	R2	52	0.0	0.577	35.0	LOS C	3.6	25.5	0.98	0.78	33.0
Approach		521	2.3	0.577	21.6	LOS C	10.6	75.7	0.88	0.76	36.3
North: George St (N)											
7	L2	176	0.0	0.364	16.4	LOS B	3.4	24.1	0.65	0.72	39.5
8	T1	192	0.0	0.705	17.2	LOS B	8.0	56.0	0.82	0.74	39.7
9	R2	123	0.0	0.705	21.8	LOS C	8.0	56.0	0.82	0.74	38.3
Approach		491	0.0	0.705	18.1	LOS B	8.0	56.0	0.76	0.73	39.3
West: The Parade (W)											
10	L2	92	0.0	0.853	30.9	LOS C	21.1	149.9	0.99	0.94	35.0
11	T1	796	2.0	0.853	29.2	LOS C	21.1	149.9	0.99	0.95	32.5
12	R2	62	0.0	0.853	39.2	LOS D	12.8	91.2	1.00	0.96	32.0
Approach		949	1.7	0.853	30.0	LOS C	21.1	149.9	0.99	0.95	32.7
All Vehicles		2371	1.3	0.853	23.9	LOS C	21.1	149.9	0.90	0.83	35.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	16.2	LOS B	0.1	0.1	0.71	0.71	
P2	East Full Crossing	53	17.7	LOS B	0.1	0.1	0.74	0.74	
P3	North Full Crossing	53	1.1	LOS A	0.0	0.0	0.19	0.19	
P4	West Full Crossing	53	16.9	LOS B	0.1	0.1	0.73	0.73	
All Pedestrians		211	13.0	LOS B			0.59	0.59	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

APPENDIX G.3

THE PARADE/GEORGE STREET - SATURDAY - BASE CASE

INTERSECTION SUMMARY

 **Site: 101 [The Parade/George St - Existing Saturday]**

New Site

Signals - Fixed Time Isolated Cycle Time = 118 seconds (User-Given Phase Times)

Intersection Performance - Hourly Values			
Performance Measure	Vehicles	Pedestrians	Persons
Travel Speed (Average)	38.4 km/h	3.2 km/h	37.0 km/h
Travel Distance (Total)	1798.0 veh-km/h	7.5 ped-km/h	2165.1 pers-km/h
Travel Time (Total)	46.9 veh-h/h	2.3 ped-h/h	58.6 pers-h/h
Demand Flows (Total)	2084 veh/h	211 ped/h	2712 pers/h
Percent Heavy Vehicles (Demand)	2.6 %		
Degree of Saturation	0.712	0.020	
Practical Spare Capacity	26.5 %		
Effective Intersection Capacity	2929 veh/h		
Control Delay (Total)	10.71 veh-h/h	0.75 ped-h/h	13.60 pers-h/h
Control Delay (Average)	18.5 sec	12.8 sec	18.1 sec
Control Delay (Worst Lane)	20.9 sec		
Control Delay (Worst Movement)	24.1 sec	18.0 sec	24.1 sec
Geometric Delay (Average)	1.9 sec		
Stop-Line Delay (Average)	16.6 sec		
Idling Time (Average)	13.0 sec		
Intersection Level of Service (LOS)	LOS B	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	9.4 veh		
95% Back of Queue - Distance (Worst Lane)	67.2 m		
Queue Storage Ratio (Worst Lane)	0.10		
Total Effective Stops	1566 veh/h	130 ped/h	2009 pers/h
Effective Stop Rate	0.75 per veh	0.62 per ped	0.74 per pers
Proportion Queued	0.83	0.62	0.82
Performance Index	150.0	3.1	153.1
Cost (Total)	1289.17 \$/h	59.14 \$/h	1348.31 \$/h
Fuel Consumption (Total)	165.3 L/h		
Carbon Dioxide (Total)	391.0 kg/h		
Hydrocarbons (Total)	0.030 kg/h		
Carbon Monoxide (Total)	0.320 kg/h		
NOx (Total)	0.474 kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values			
Performance Measure	Vehicles	Pedestrians	Persons
Demand Flows (Total)	1,000,421 veh/y	101,053 ped/y	1,301,558 pers/y
Delay	5,140 veh-h/y	361 ped-h/y	6,528 pers-h/y
Effective Stops	751,706 veh/y	62,224 ped/y	964,271 pers/y
Travel Distance	863,053 veh-km/y	3,585 ped-km/y	1,039,248 pers-km/y
Travel Time	22,491 veh-h/y	1,127 ped-h/y	28,116 pers-h/y
Cost	618,802 \$/y	28,388 \$/y	647,190 \$/y
Fuel Consumption	79,327 L/y		
Carbon Dioxide	187,690 kg/y		
Hydrocarbons	15 kg/y		
Carbon Monoxide	153 kg/y		
NOx	228 kg/y		

MOVEMENT SUMMARY

Site: 101 [The Parade/George St - Existing Saturday]

New Site

Signals - Fixed Time Isolated Cycle Time = 118 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George St (S)											
1	L2	94	0.0	0.643	21.5	LOS C	9.4	67.2	0.88	0.80	38.1
2	T1	172	3.0	0.643	17.0	LOS B	9.4	67.2	0.88	0.80	39.5
3	R2	119	3.0	0.643	21.5	LOS C	9.4	67.2	0.88	0.80	38.0
Approach		384	2.3	0.643	19.5	LOS B	9.4	67.2	0.88	0.80	38.7
East: The Parade (E)											
4	L2	76	0.0	0.496	20.2	LOS C	8.1	57.7	0.82	0.72	39.4
5	T1	437	3.0	0.496	17.0	LOS B	8.1	57.7	0.84	0.73	37.7
6	R2	66	2.0	0.496	24.1	LOS C	5.5	39.6	0.88	0.75	37.4
Approach		579	2.5	0.496	18.3	LOS B	8.1	57.7	0.84	0.73	37.9
North: George St (N)											
7	L2	207	2.0	0.473	16.7	LOS B	3.9	28.1	0.69	0.73	39.4
8	T1	163	0.0	0.712	17.2	LOS B	6.9	49.4	0.82	0.76	39.6
9	R2	124	4.0	0.712	21.8	LOS C	6.9	49.4	0.82	0.76	38.2
Approach		495	1.8	0.712	18.1	LOS B	6.9	49.4	0.77	0.75	39.2
West: The Parade (W)											
10	L2	96	3.0	0.531	20.5	LOS C	8.7	62.8	0.83	0.74	39.1
11	T1	457	4.0	0.531	17.1	LOS B	8.7	62.8	0.85	0.75	37.6
12	R2	74	1.0	0.531	23.6	LOS C	6.2	44.3	0.88	0.76	37.7
Approach		626	3.5	0.531	18.4	LOS B	8.7	62.8	0.85	0.75	37.9
All Vehicles		2084	2.6	0.712	18.5	LOS B	9.4	67.2	0.83	0.75	38.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	15.0	LOS B	0.1	0.1	0.71	0.71	
P2	East Full Crossing	53	18.0	LOS B	0.1	0.1	0.78	0.78	
P3	North Full Crossing	53	1.2	LOS A	0.0	0.0	0.20	0.20	
P4	West Full Crossing	53	17.2	LOS B	0.1	0.1	0.76	0.76	
All Pedestrians		211	12.8	LOS B			0.62	0.62	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

APPENDIX G.4

THE PARADE/GEORGE STREET - SATURDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

 **Site: 101 [The Parade/George St - Future Saturday]**

New Site

Signals - Fixed Time Isolated Cycle Time = 118 seconds (User-Given Phase Times)

Intersection Performance - Hourly Values			
Performance Measure	Vehicles	Pedestrians	Persons
Travel Speed (Average)	38.0 km/h	3.2 km/h	36.6 km/h
Travel Distance (Total)	1849.7 veh-km/h	7.5 ped-km/h	2227.1 pers-km/h
Travel Time (Total)	48.7 veh-h/h	2.3 ped-h/h	60.8 pers-h/h
Demand Flows (Total)	2139 veh/h	211 ped/h	2777 pers/h
Percent Heavy Vehicles (Demand)	2.6 %		
Degree of Saturation	0.674	0.019	
Practical Spare Capacity	33.5 %		
Effective Intersection Capacity	3172 veh/h		
Control Delay (Total)	11.54 veh-h/h	0.71 ped-h/h	14.56 pers-h/h
Control Delay (Average)	19.4 sec	12.2 sec	18.9 sec
Control Delay (Worst Lane)	26.1 sec		
Control Delay (Worst Movement)	29.1 sec	17.6 sec	29.1 sec
Geometric Delay (Average)	1.9 sec		
Stop-Line Delay (Average)	17.5 sec		
Idling Time (Average)	13.9 sec		
Intersection Level of Service (LOS)	LOS B	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	10.5 veh		
95% Back of Queue - Distance (Worst Lane)	76.0 m		
Queue Storage Ratio (Worst Lane)	0.12		
Total Effective Stops	1649 veh/h	127 ped/h	2106 pers/h
Effective Stop Rate	0.77 per veh	0.60 per ped	0.76 per pers
Proportion Queued	0.86	0.60	0.84
Performance Index	160.7	3.0	163.7
Cost (Total)	1348.94 \$/h	58.20 \$/h	1407.14 \$/h
Fuel Consumption (Total)	171.5 L/h		
Carbon Dioxide (Total)	405.9 kg/h		
Hydrocarbons (Total)	0.032 kg/h		
Carbon Monoxide (Total)	0.332 kg/h		
NOx (Total)	0.493 kg/h		

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values			
Performance Measure	Vehicles	Pedestrians	Persons
Demand Flows (Total)	1,026,695 veh/y	101,053 ped/y	1,333,087 pers/y
Delay	5,539 veh-h/y	343 ped-h/y	6,989 pers-h/y
Effective Stops	791,710 veh/y	60,722 ped/y	1,010,774 pers/y
Travel Distance	887,871 veh-km/y	3,585 ped-km/y	1,069,030 pers-km/y
Travel Time	23,389 veh-h/y	1,109 ped-h/y	29,176 pers-h/y
Cost	647,491 \$/y	27,935 \$/y	675,426 \$/y
Fuel Consumption	82,344 L/y		
Carbon Dioxide	194,808 kg/y		
Hydrocarbons	15 kg/y		
Carbon Monoxide	159 kg/y		
NOx	237 kg/y		

MOVEMENT SUMMARY

 **Site: 101 [The Parade/George St - Future Saturday]**

New Site

Signals - Fixed Time Isolated Cycle Time = 118 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: George St (S)											
1	L2	101	0.0	0.606	18.9	LOS B	10.1	71.9	0.82	0.77	39.3
2	T1	182	3.0	0.606	14.3	LOS B	10.1	71.9	0.82	0.77	40.6
3	R2	132	3.0	0.606	18.9	LOS B	10.1	71.9	0.82	0.77	39.2
Approach		415	2.3	0.606	16.9	LOS B	10.1	71.9	0.82	0.77	39.9
East: The Parade (E)											
4	L2	81	0.0	0.628	23.7	LOS C	9.7	69.4	0.91	0.79	37.7
5	T1	439	3.0	0.628	20.8	LOS C	9.7	69.4	0.93	0.79	35.9
6	R2	66	2.0	0.628	28.7	LOS C	5.8	41.3	0.96	0.80	35.5
Approach		586	2.5	0.628	22.1	LOS C	9.7	69.4	0.93	0.79	36.1
North: George St (N)											
7	L2	207	2.0	0.375	14.3	LOS B	3.7	26.3	0.62	0.71	40.5
8	T1	177	0.0	0.623	12.8	LOS B	6.6	46.7	0.75	0.69	41.7
9	R2	124	4.0	0.623	17.4	LOS B	6.6	46.7	0.75	0.69	40.3
Approach		508	1.8	0.623	14.5	LOS B	6.6	46.7	0.69	0.70	40.9
West: The Parade (W)											
10	L2	96	3.0	0.674	24.1	LOS C	10.5	76.0	0.93	0.80	37.5
11	T1	457	4.0	0.674	21.2	LOS C	10.5	76.0	0.94	0.81	35.7
12	R2	77	1.0	0.674	29.1	LOS C	6.5	46.7	0.97	0.82	35.3
Approach		629	3.5	0.674	22.6	LOS C	10.5	76.0	0.94	0.81	35.9
All Vehicles		2139	2.6	0.674	19.4	LOS B	10.5	76.0	0.86	0.77	38.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	17.6	LOS B	0.1	0.1	0.77	0.77	
P2	East Full Crossing	53	15.4	LOS B	0.1	0.1	0.72	0.72	
P3	North Full Crossing	53	1.2	LOS A	0.0	0.0	0.20	0.20	
P4	West Full Crossing	53	14.6	LOS B	0.1	0.1	0.70	0.70	
All Pedestrians		211	12.2	LOS B			0.60	0.60	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

APPENDIX H

SIDRA ANALYSIS - THE PARADE/EDWARD STREET

APPENDIX H.1

THE PARADE/EDWARD STREET - THURSDAY - BASE CASE

INTERSECTION SUMMARY

▽ Site: 101v [The Parade/Edward St - Existing Thursday PM]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	45.6 km/h	45.6 km/h
Travel Distance (Total)	1108.8 veh-km/h	1330.5 pers-km/h
Travel Time (Total)	24.3 veh-h/h	29.2 pers-h/h
Demand Flows (Total)	2241 veh/h	2689 pers/h
Percent Heavy Vehicles (Demand)	2.2 %	
Degree of Saturation	0.388	
Practical Spare Capacity	152.6 %	
Effective Intersection Capacity	5777 veh/h	
Control Delay (Total)	2.02 veh-h/h	2.43 pers-h/h
Control Delay (Average)	3.3 sec	3.3 sec
Control Delay (Worst Lane)	7.7 sec	
Control Delay (Worst Movement)	14.8 sec	14.8 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	1.7 sec	
Idling Time (Average)	0.8 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	2.4 veh	
95% Back of Queue - Distance (Worst Lane)	17.2 m	
Queue Storage Ratio (Worst Lane)	0.04	
Total Effective Stops	475 veh/h	569 pers/h
Effective Stop Rate	0.21 per veh	0.21 per pers
Proportion Queued	0.21	0.21
Performance Index	30.7	30.7
Cost (Total)	594.82 \$/h	594.82 \$/h
Fuel Consumption (Total)	89.0 L/h	
Carbon Dioxide (Total)	210.4 kg/h	
Hydrocarbons (Total)	0.015 kg/h	
Carbon Monoxide (Total)	0.170 kg/h	
NOx (Total)	0.192 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,075,705 veh/y	1,290,846 pers/y
Delay	971 veh-h/y	1,166 pers-h/y
Effective Stops	227,798 veh/y	273,357 pers/y
Travel Distance	532,208 veh-km/y	638,650 pers-km/y
Travel Time	11,667 veh-h/y	14,000 pers-h/y
Cost	285,511 \$/y	285,511 \$/y
Fuel Consumption	42,736 L/y	
Carbon Dioxide	100,985 kg/y	
Hydrocarbons	7 kg/y	
Carbon Monoxide	82 kg/y	
NOx	92 kg/y	

MOVEMENT SUMMARY

▽ Site: 101v [The Parade/Edward St - Existing Thursday PM]

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward St (S)											
1	L2	189	1.0	0.198	6.4	LOS A	0.9	6.2	0.44	0.61	44.5
Approach		189	1.0	0.198	6.4	LOS A	0.9	6.2	0.44	0.61	44.5
East: The Parade (E)											
4	L2	75	1.0	0.224	4.6	LOS A	0.0	0.0	0.00	0.09	48.5
5	T1	548	2.9	0.224	2.0	LOS A	1.4	10.0	0.19	0.12	44.8
6	R2	49	0.0	0.224	14.8	LOS B	1.4	10.0	0.55	0.17	42.8
Approach		673	2.5	0.224	3.3	NA	1.4	10.0	0.20	0.12	45.2
North: Edward St (N)											
7	L2	80	1.0	0.101	7.3	LOS A	0.4	2.8	0.50	0.66	43.9
Approach		80	1.0	0.101	7.3	LOS A	0.4	2.8	0.50	0.66	43.9
West: The Parade (W)											
10	L2	222	1.0	0.388	4.6	LOS A	0.0	0.0	0.00	0.16	47.9
11	T1	942	2.9	0.388	1.1	LOS A	2.4	17.2	0.18	0.17	45.7
12	R2	135	0.0	0.388	9.3	LOS A	2.4	17.2	0.40	0.19	45.6
Approach		1299	2.3	0.388	2.5	NA	2.4	17.2	0.17	0.17	46.3
All Vehicles		2241	2.2	0.388	3.3	NA	2.4	17.2	0.21	0.21	45.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX H.2

THE PARADE/EDWARD STREET - THURSDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101v [The Parade/Edward St - Future Thursday PM]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	45.6 km/h	45.6 km/h
Travel Distance (Total)	1128.1 veh-km/h	1353.7 pers-km/h
Travel Time (Total)	24.8 veh-h/h	29.7 pers-h/h
Demand Flows (Total)	2272 veh/h	2726 pers/h
Percent Heavy Vehicles (Demand)	2.2 %	
Degree of Saturation	0.391	
Practical Spare Capacity	150.5 %	
Effective Intersection Capacity	5807 veh/h	
Control Delay (Total)	2.09 veh-h/h	2.51 pers-h/h
Control Delay (Average)	3.3 sec	3.3 sec
Control Delay (Worst Lane)	7.7 sec	
Control Delay (Worst Movement)	14.9 sec	14.9 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	1.8 sec	
Idling Time (Average)	0.8 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	2.5 veh	
95% Back of Queue - Distance (Worst Lane)	17.8 m	
Queue Storage Ratio (Worst Lane)	0.04	
Total Effective Stops	492 veh/h	591 pers/h
Effective Stop Rate	0.22 per veh	0.22 per pers
Proportion Queued	0.22	0.22
Performance Index	31.4	31.4
Cost (Total)	608.84 \$/h	608.84 \$/h
Fuel Consumption (Total)	90.8 L/h	
Carbon Dioxide (Total)	214.5 kg/h	
Hydrocarbons (Total)	0.015 kg/h	
Carbon Monoxide (Total)	0.173 kg/h	
NOx (Total)	0.195 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,090,358 veh/y	1,308,430 pers/y
Delay	1,004 veh-h/y	1,205 pers-h/y
Effective Stops	236,239 veh/y	283,486 pers/y
Travel Distance	541,482 veh-km/y	649,778 pers-km/y
Travel Time	11,885 veh-h/y	14,262 pers-h/y
Cost	292,244 \$/y	292,244 \$/y
Fuel Consumption	43,575 L/y	
Carbon Dioxide	102,961 kg/y	
Hydrocarbons	7 kg/y	
Carbon Monoxide	83 kg/y	
NOx	94 kg/y	

MOVEMENT SUMMARY

▽ Site: 101v [The Parade/Edward St - Future Thursday PM]

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward St (S)											
1	L2	205	1.0	0.215	6.4	LOS A	1.0	6.8	0.45	0.62	44.5
Approach		205	1.0	0.215	6.4	LOS A	1.0	6.8	0.45	0.62	44.5
East: The Parade (E)											
4	L2	77	1.0	0.226	4.6	LOS A	0.0	0.0	0.00	0.10	48.5
5	T1	554	2.9	0.226	2.1	LOS A	1.4	10.2	0.19	0.12	44.8
6	R2	49	0.0	0.226	14.9	LOS B	1.4	10.2	0.54	0.17	42.8
Approach		680	2.5	0.226	3.3	NA	1.4	10.2	0.20	0.12	45.2
North: Edward St (N)											
7	L2	82	1.0	0.105	7.4	LOS A	0.4	2.9	0.51	0.67	43.8
Approach		82	1.0	0.105	7.4	LOS A	0.4	2.9	0.51	0.67	43.8
West: The Parade (W)											
10	L2	222	1.0	0.391	4.6	LOS A	0.0	0.0	0.00	0.16	47.9
11	T1	944	2.9	0.391	1.1	LOS A	2.5	17.8	0.18	0.18	45.7
12	R2	138	0.0	0.391	9.4	LOS A	2.5	17.8	0.41	0.19	45.5
Approach		1304	2.3	0.391	2.6	NA	2.5	17.8	0.17	0.17	46.2
All Vehicles		2272	2.2	0.391	3.3	NA	2.5	17.8	0.22	0.22	45.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX H.3

THE PARADE/EDWARD STREET - SATURDAY - BASE CASE

INTERSECTION SUMMARY

▽ Site: 101v [The Parade/Edward St - Existing Saturday]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	45.3 km/h	45.3 km/h
Travel Distance (Total)	1110.9 veh-km/h	1333.1 pers-km/h
Travel Time (Total)	24.5 veh-h/h	29.4 pers-h/h
Demand Flows (Total)	2086 veh/h	2504 pers/h
Percent Heavy Vehicles (Demand)	1.9 %	
Degree of Saturation	0.316	
Practical Spare Capacity	155.1 %	
Effective Intersection Capacity	6609 veh/h	
Control Delay (Total)	2.17 veh-h/h	2.61 pers-h/h
Control Delay (Average)	3.7 sec	3.7 sec
Control Delay (Worst Lane)	7.1 sec	
Control Delay (Worst Movement)	9.9 sec	9.9 sec
Geometric Delay (Average)	2.1 sec	
Stop-Line Delay (Average)	1.7 sec	
Idling Time (Average)	0.6 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	1.9 veh	
95% Back of Queue - Distance (Worst Lane)	13.6 m	
Queue Storage Ratio (Worst Lane)	0.03	
Total Effective Stops	629 veh/h	755 pers/h
Effective Stop Rate	0.30 per veh	0.30 per pers
Proportion Queued	0.25	0.25
Performance Index	31.6	31.6
Cost (Total)	609.15 \$/h	609.15 \$/h
Fuel Consumption (Total)	90.3 L/h	
Carbon Dioxide (Total)	213.2 kg/h	
Hydrocarbons (Total)	0.015 kg/h	
Carbon Monoxide (Total)	0.173 kg/h	
NOx (Total)	0.176 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,001,432 veh/y	1,201,718 pers/y
Delay	1,043 veh-h/y	1,251 pers-h/y
Effective Stops	302,029 veh/y	362,434 pers/y
Travel Distance	533,248 veh-km/y	639,898 pers-km/y
Travel Time	11,762 veh-h/y	14,115 pers-h/y
Cost	292,393 \$/y	292,393 \$/y
Fuel Consumption	43,340 L/y	
Carbon Dioxide	102,317 kg/y	
Hydrocarbons	7 kg/y	
Carbon Monoxide	83 kg/y	
NOx	84 kg/y	

MOVEMENT SUMMARY

 **Site: 101v [The Parade/Edward St - Existing Saturday]**

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward St (S)											
1	L2	281	1.0	0.314	7.1	LOS A	1.5	10.9	0.52	0.69	44.1
Approach		281	1.0	0.314	7.1	LOS A	1.5	10.9	0.52	0.69	44.1
East: The Parade (E)											
4	L2	59	1.0	0.246	4.6	LOS A	0.0	0.0	0.00	0.07	48.7
5	T1	601	2.9	0.246	1.2	LOS A	1.4	9.7	0.16	0.13	46.3
6	R2	97	0.0	0.246	9.9	LOS A	1.4	9.7	0.53	0.28	44.2
Approach		757	2.4	0.246	2.5	NA	1.4	9.7	0.20	0.15	46.2
North: Edward St (N)											
7	L2	95	1.0	0.099	6.2	LOS A	0.4	2.9	0.42	0.59	44.6
Approach		95	1.0	0.099	6.2	LOS A	0.4	2.9	0.42	0.59	44.6
West: The Parade (W)											
10	L2	244	1.0	0.316	4.6	LOS A	0.0	0.0	0.00	0.22	47.5
11	T1	541	2.9	0.316	1.3	LOS A	1.9	13.6	0.18	0.28	44.6
12	R2	168	0.0	0.316	9.0	LOS A	1.9	13.6	0.55	0.40	43.9
Approach		954	1.9	0.316	3.5	NA	1.9	13.6	0.20	0.28	45.4
All Vehicles		2086	1.9	0.316	3.7	NA	1.9	13.6	0.25	0.30	45.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX H.4

THE PARADE/EDWARD STREET - SATURDAY - TOTAL TRAFFIC

INTERSECTION SUMMARY

▽ Site: 101v [The Parade/Edward St - Future Saturday]

New Site
Giveway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	45.3 km/h	45.3 km/h
Travel Distance (Total)	1135.6 veh-km/h	1362.7 pers-km/h
Travel Time (Total)	25.1 veh-h/h	30.1 pers-h/h
Demand Flows (Total)	2125 veh/h	2550 pers/h
Percent Heavy Vehicles (Demand)	1.9 %	
Degree of Saturation	0.338	
Practical Spare Capacity	136.4 %	
Effective Intersection Capacity	6281 veh/h	
Control Delay (Total)	2.26 veh-h/h	2.72 pers-h/h
Control Delay (Average)	3.8 sec	3.8 sec
Control Delay (Worst Lane)	7.3 sec	
Control Delay (Worst Movement)	10.0 sec	10.0 sec
Geometric Delay (Average)	2.1 sec	
Stop-Line Delay (Average)	1.8 sec	
Idling Time (Average)	0.6 sec	
Intersection Level of Service (LOS)	NA	
95% Back of Queue - Vehicles (Worst Lane)	2.0 veh	
95% Back of Queue - Distance (Worst Lane)	13.9 m	
Queue Storage Ratio (Worst Lane)	0.03	
Total Effective Stops	659 veh/h	791 pers/h
Effective Stop Rate	0.31 per veh	0.31 per pers
Proportion Queued	0.26	0.26
Performance Index	32.6	32.6
Cost (Total)	626.78 \$/h	626.78 \$/h
Fuel Consumption (Total)	92.4 L/h	
Carbon Dioxide (Total)	218.2 kg/h	
Hydrocarbons (Total)	0.016 kg/h	
Carbon Monoxide (Total)	0.177 kg/h	
NOx (Total)	0.179 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

NA: Intersection LOS for Vehicles is Not Applicable for two-way sign control since the average intersection delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,020,126 veh/y	1,224,152 pers/y
Delay	1,087 veh-h/y	1,304 pers-h/y
Effective Stops	316,258 veh/y	379,509 pers/y
Travel Distance	545,072 veh-km/y	654,087 pers-km/y
Travel Time	12,043 veh-h/y	14,451 pers-h/y
Cost	300,855 \$/y	300,855 \$/y
Fuel Consumption	44,374 L/y	
Carbon Dioxide	104,754 kg/y	
Hydrocarbons	8 kg/y	
Carbon Monoxide	85 kg/y	
NOx	86 kg/y	

MOVEMENT SUMMARY

▽ Site: 101v [The Parade/Edward St - Future Saturday]

New Site
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Edward St (S)											
1	L2	302	1.0	0.338	7.3	LOS A	1.8	12.6	0.53	0.71	43.9
Approach		302	1.0	0.338	7.3	LOS A	1.8	12.6	0.53	0.71	43.9
East: The Parade (E)											
4	L2	61	1.0	0.249	4.6	LOS A	0.0	0.0	0.00	0.07	48.7
5	T1	608	2.9	0.249	1.2	LOS A	1.4	9.9	0.16	0.13	46.3
6	R2	97	0.0	0.249	10.0	LOS A	1.4	9.9	0.53	0.27	44.2
Approach		766	2.4	0.249	2.6	NA	1.4	9.9	0.20	0.15	46.1
North: Edward St (N)											
7	L2	97	1.0	0.103	6.3	LOS A	0.4	3.0	0.42	0.59	44.5
Approach		97	1.0	0.103	6.3	LOS A	0.4	3.0	0.42	0.59	44.5
West: The Parade (W)											
10	L2	244	1.0	0.320	4.6	LOS A	0.0	0.0	0.00	0.22	47.5
11	T1	543	2.9	0.320	1.3	LOS A	2.0	13.9	0.18	0.28	44.7
12	R2	173	0.0	0.320	9.1	LOS A	2.0	13.9	0.56	0.41	43.7
Approach		960	1.9	0.320	3.5	NA	2.0	13.9	0.20	0.29	45.4
All Vehicles		2125	1.9	0.338	3.8	NA	2.0	13.9	0.26	0.31	45.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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166 The Parade, Norwood

Waste Management Plan

Date: 15 October 2019

Prepared for:

Australasian Property Developments



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1 INTRODUCTION

This document presents a waste management plan (WMP) for the 166 The Parade Mixed Use Development (the “Development”). The Development is a combination of Supermarket, Retail, Commercial, and High Density Residential. The Project Proponent is Australasian Property Developments, the Architect is Studio Nine, and the Traffic Engineer is CIRQA.

The WMP explains how the Development can manage waste effectively to achieve regulatory requirements and desired design and operating objectives, including those recommended by the South Australian Better Practice Guide (State Guideline) (Zero Waste SA, 2014) and Council expectations for waste management in this type of development. The WMP should be read in conjunction with other planning approval documentation for the Development referenced herein.

2 DEVELOPMENT DESCRIPTION

The Development is at 166 The Parade, in the City of Norwood Payneham & St Peters (Council) – see Figure 2-1 below which shows the location relative to other neighbouring properties. Per plans provided (Drawings 0906-184 PA01 to PA08, received 14 Oct 2019), the Development is mixed use in a multi-storey building. The site has frontage onto George Street and Edward Street.

Table 2-1 gives the proposed Development Metrics. In summary, the Development would comprise:

- *Residential Apartments (George St)*
 - *Nine apartments, 3 with 2 bedrooms and 6 with 3 bedrooms, with frontage to George Street*
 - *Dedicated waste management facilities*
- *Residential (Podium)*
 - *24 townhouses accessed from Level 3 of the main building, 16 with 2 bedrooms and 8 with 3 bedrooms; and*
 - *40 apartments accessed from Level 3 of the main building, 2 with 1 bedroom and 38 with 2 bedrooms; and*
 - *Four penthouse apartments accessed from Level 3 of the main building, each with 3 bedrooms.*
 - *Dedicated waste management facilities*
- *Coles Supermarket*
 - *3,526m² supermarket*
 - *Integrated 192m² liquor retail (Liquorland)*
 - *Total 3,718m²*
 - *Dedicated waste management facilities*
- *Retail tenancies*
 - *Located on Ground Level*
 - *Light Café (156m²)*
 - *Fruit and Veg shop (98m²)*

- *Pharmacy (74m²)*
- *Dry retail (188 m²)*
- *Offices & Consulting Rooms (192m²) - Located on Level 1, but accessed from the Retail area*
- *Commercial tenancies - Level 1 (as reproduced in Figure 5-10)*
 - *Medical Centre (476m²)*
 - *Offices & Consulting Rooms (428 m²)*

The above retail and commercial tenancy profile at Ground Level and Level 1 is based on the Proponent's commercial expectations. The final mix of commercial and retail tenancies would be decided when the building is complete and becomes operational.

Table 2-1 below includes the recommended Waste Resource Generation Rate (WRGR) classification (for each land use) based on the State Guideline (Zero Waste SA, 2014), which are used for estimation of waste and recycling volumes to assess waste storage required for the site.

The waste resource generation rates for the Coles Supermarket are based on Coles' own experience of operating a similar supermarket (at Burnside, SA).

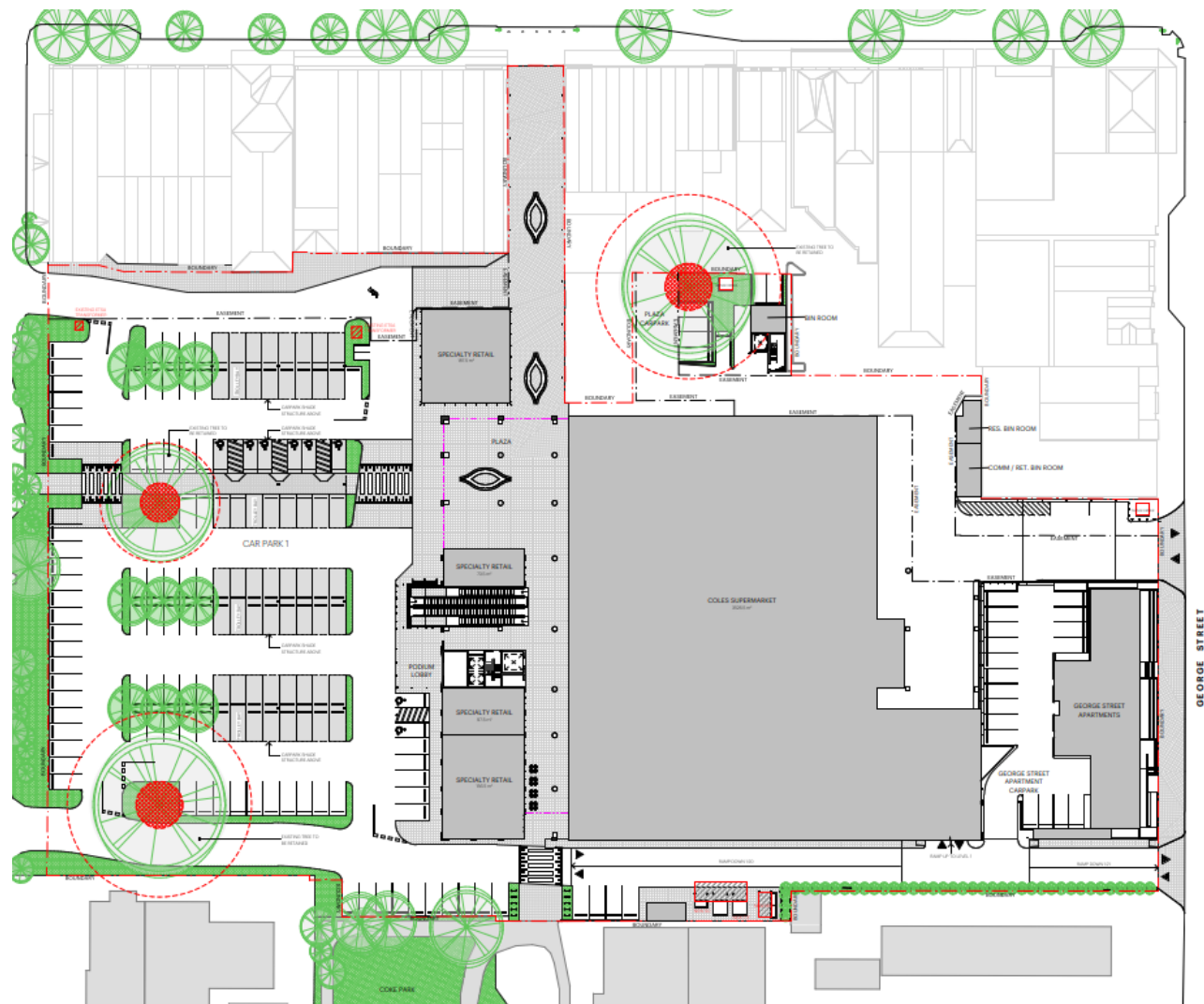


Figure 2-1 Site boundary for the Development, reproduced from the Drawings.

Table 2-1: Summary of land uses for the Development, their WRGR Description(s) and relevant Development Metric(s). Retail and Commercial tenancies are preliminary assumed uses

Land Use	Description	Site Location	Land UseType	Dev. Metric(s)	
Residential	Apartments	George Street Frontage	High Density Residential Dwelling	9	Dwellings
				24	Bedrooms
	Townhouses	Podium	High Density Residential Dwelling	24	Dwellings
				56	Bedrooms
	Apartments/Penthouses	Podium	High Density Residential Dwelling	44	Dwellings
				90	Bedrooms
Retail	Supermarket, incl Liquorland	Ground Level	Supermarket	3718	m ² GLA
	Specialty Tenancy 1 (Café)		Light Café*	156	m ² GLA
	Specialty Tenancy 2 (Pharmacy)		Dry Retail ≤ 100m ² + Clinical Waste	74	m ² GLA
	Specialty Tenancy 3 (Dry retail)		Retail > 100m ²	188	m ² GLA
	Specialty Tenancy 4 (Fruit & Veg)		Fruit and Vegetable	98	m ² GLA
	Commercial Offices				
		Level 1	Offices or Consulting Rooms	192	m ² GLA
Open Space	Lobbies, open space, gardens, carpark	Ground/Level 1	Showroom**	100	m ² GLA **
Commercial	Medical	Level 1	Offices & Consulting Rooms (Medical)**	476	m ² GLA
	Commercial Offices	Level 1	Offices or Consulting Rooms	428	m ² GLA
	Plant Room	Level 1	Showroom**	50	m ² GLA **

* Derated Café WRGRs from State Guideline: General waste = -30%, Recycling = -25%, Food Waste = - 50%

** Activated area assumed

3 STAKEHOLDER ENGAGEMENT

Colby Phillips Advisory has discussed the project with the waste collection contractor (EastWaste) used by City of Norwood Payneham & St Peters (Council) (Ray Pawa, October 2019). The design and drawings (as presented in this Waste Management Plan) have been provided to EastWaste for their comment and approval.

East Waste has confirmed that, based on the drawings and designs provided, they will be able to service the Residential collection for the development, including the separate Presentation storage areas for the George Street Apartments and the Podium Apartments/Townhouses. For both areas, EastWaste's rear-lift collection trucks would be used.

The site and storages have been designed to minimise risk of Commercial wastes being disposed to Residential bins, and minimise risk of illegal dumping in the Residential bins.

Colby Phillips Advisory has discussed the project with Cleanaway, who are presently the preferred waste contractor for Coles in South Australia. Cleanaway may also be used for collection of other retail / commercial wastes on site, subject to commercial negotiations. Cleanaway have indicated acceptance of the proposed waste management design, including collection of all wastes from the Coles loading dock and from the Retail/Commercial Waste Presentation Room at Ground Level. Cleanaway have recently begun providing a Front Lift (3000L) collection service for packaged organics for Coles Supermarkets. This enables Coles to dispose food products in plastic wrappings into the Organics bin. Wraps are removed by Cleanaway during processing offsite.

4 DESIGN ASSUMPTIONS

4.1 Waste & Recycling Service Provision

Table 4-1 outlines the recommended waste services by land use per Table 2-1. The different waste service classifications listed in Table 4-1 are explained below.

- **Routine Services** – These require on-site waste storage and routine and regular collections, and would include services for general waste, dry (comingled) recyclables and food waste.
- **At-call services** – These involve non-frequent collections, such as Hard waste and are organised and provided on an as-needed basis.
- **Maintenance services** – Some waste items (e.g. lighting in common areas or commercial tenancies, sanitary waste in public/common toilets) would be removed and disposed of (off-site) by the contractor providing the related maintenance service (and hence on-site waste storage is not usually needed or provided).
- **External Services** – These are where waste items (e.g. printer cartridges, batteries, lighting) that can be dropped off by tenants/residents at external locations (e.g. Officeworks, waste depot) (and thus, separate on-site waste storage is not usually needed or provided).

All residential components of this development will be serviced by the City of Norwood Payneham & St Peters, via their subcontractor EastWaste. EastWaste can provide General Waste, Mixed Recycling, and Organics services. These can be provided as a Rear Lift service for all residences.

All other services for retail and commercial tenancies will be provided by private / commercial service providers.

4.2 Waste & Recycling Volumes

Table 4-2 estimates expected waste and recycling volumes for the Development (in Litres/week).

- WRGRs (in the State Guideline) do not exist for sanitary, lighting, printer cartridge or battery waste.
 - Volumes of these waste items, however, are relatively small, and thus, have not been estimated.
- The Light Café tenancy WRGRs are derated Café / Restaurant WRGRs (to reflect the fact a Light Café is not a full-service restaurant, which the WRGRs in the State Guidelines are based on – refer to Table note).
- The Light Café and Offices & Consulting Rooms' WRGRs for Recycling and General Waste were split based on published data and consultant experience to reflect likely volumes generated for different recyclable items.

Table 4-1 Expected or recommended waste & recycling services for the Development

Service Type	Residential			Retail tenancies						Open Space	Commercial		
	George St. Apartments	Podium Townhouses	Podium Apartments / Penthouses	Supermarket, incl Liquorland	Specialty Tenancy 1 (Café)	Specialty Tenancy 2 (Pharmacy)	Specialty Tenancy 3 (dry retail)	Specialty Tenancy 4 (Fruit & Veg)	Commercial Offices	Lobbies, open space, gardens, carpark	Plant Room	Medical	Commercial Offices
Routine (regularly scheduled)	<ul style="list-style-type: none"> General Waste Recycling Food Organics 			General Waste	General Waste	General Waste	General Waste	General Waste	General Waste	General Waste	General Waste	General Waste	General Waste
				Recycling	Cardboard	Cardboard	Recycling	Cardboard	Recycling	Recycling	Recycling	Recycling	Recycling
				Food Organics	Food Organics	Recyclables (Other)	Recyclables (Other)	Recyclables (Other)	Confidential Paper			Confidential Paper	Confidential Paper
				Cardboard	Recycled deposit containers (OPTION)	Clinical Waste						Clinical Waste	
				Soft Plastics	Cooking Oil (OPTION)								
At-call (as needed)	<ul style="list-style-type: none"> Hard/E-waste 			Hard/E-waste Printer Cartridges Confidential Paper Batteries								Hard/E-waste Printer Cartridges Batteries	
Maintenance (waste removed by contractor)	<ul style="list-style-type: none"> Lighting (where applicable) 			Sanitary (commercial toilets) Lighting (where applicable)						Lighting (where applicable)	Maintenance wastes	Sanitary (commercial toilets) Lighting (where applicable)	
External (by tenant off-site)	<ul style="list-style-type: none"> Lighting Printer Cartridges Batteries 			Lighting (if not Maintenance) Printer Cartridges (if not At-call) Batteries (if not At-call)								Lighting (if not Maintenance) Printer Cartridges (if not At-call) Batteries (if not At-call)	

Table 4-2 Estimated waste & recycling volumes (Litres/week) for Development. *Greyed out, N/A - Not Applicable; NE - Not estimated*

Waste/Recycling Service	Residential			Retail						Shared	Commercial		
	Apartments - George St	Podium Townhouses	Podium Apartments / Penthouses	Supermarket, incl Liquorland	Specialty Tenancy 1 (Café)	Specialty Tenancy 2 (Pharmacy)	Specialty Tenancy 3 (dry retail)	Specialty Tenancy 4 (Fruit & Veg)	Commercial Offices	Lobbies, open space, gardens, carpark	Plant Room	Medical	Commercial Offices
	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week	L/week
General Waste	720	1,680	2,700	16,917	2,293	446	790	1,029	336	280	140	833	749
Dry Comingled Recycling	600	1,400	2,250	3,904	975	315	790	137	240	70	35	595	535
Cardboard (uncompacted)				57,257				686					
Soft Plastic (uncompacted)				5,205									
Recycled Deposit Container					115								
Confidential Paper						26			48			119	107
Food/Garden Organics	240	560	900	6,507	1,529		39	1,098					
Clinical Waste						26						286	
Hard waste	120	280	450	651	38	26	33	17	5	18	9	12	11
E-waste	24	56	90	52	1.1	3	3	1	0	1	1	1	1
Lighting waste	NE												
Printer Cartridges/Batteries	NE												
TOTAL	1,704	3,976	6,390	90,492	4,951	843	1,654	2,968	629	369	184	1,845	1,403

Modified Café / Restaurant WRGR to reflect Light Café tenant: General waste WRGR derated by 30%, recycling/cardboard by 25%, and food waste by 50%.

* Cardboard in uncompacted

** Splits are made to Recycling and General waste WRGRs based on published data and consultant experience to reflect likely volumes generated

5 WASTE MANAGEMENT SYSTEM

5.1 Waste Storage Area(s)

Various waste storage areas are provided throughout the development. These divide into 3 categories:

- Local storage, which is accessed by occupants of the tenancy on a frequent basis (multiple times per day)
- Aggregation storage, which is accessed for disposal of waste from local disposal point either by occupants or commercial cleaners on an approximately daily basis
- Presentation storage, from where rubbish will be collected by Council or Private Contractor.

In some cases, these storage locations will be combined.

The various bin storage areas are as described further below. Table 5-1 (page 14) gives a schedule of recommended bin storages in each of these Waste Storage Areas for Routine Services (based on estimated waste volumes in Table 4-2 on page 11) and includes for each land use and service:

- *Number and type of bins;*
- *Collection frequency (expected or proposed); and*
- *Service provider.*

5.2 Apartments (Residential) George Street

5.2.1 Waste Storage Areas

- See Figure 5-2 (page 15) and Figure 5-3 (page 16)
- The George Street apartments will access a shared bin system. Bins will be stored within an enclosure in the car park.
- Space can be provided for 1 x 660L General Waste Skip, 1 x 1100L Mixed Recycling Skip, 1 x 360L Organics MGB. These bin sizes are in line with Council Rear-Lift collection service and confirmed acceptable by EastWaste.

5.2.2 User Storage

Residents would be provided with suitable kitchen bins with handles to enable easy carriage from their dwellings to their Local Disposal Area, e.g. Figure 5-1 below:

- a) General waste bin – at least 20L in size (bag lined)*
- b) Co-mingled recycling waste bin - at least 20L in size*
- c) Food organics bin (compostable bag lined)*

Note: City of Norwood Payneham St Peters residents can receive a free Kitchen Organics Basket and 150 compostable bags per year. Additional bags can be purchased. See https://www.npsp.sa.gov.au/our_services/waste_and_recycling/kitchen_organics_service



(a)



(b)

Figure 5-1 Examples of suitable waste and recycling kitchen bins: (a) *General waste & recycling - 2x20L Buckets with carry-handles in pull-out drawer*; and (b): *Bench-top food waste kitchen caddy* (Source: https://www.npsa.gov.au/our_services/waste_and_recycling/kitchen_organics_service)

5.2.3 Local Disposal and Waste Storage

The residents would carry waste in their kitchen bins / bin bags to shared bins (Skips/MGBs) located in the car park enclosure. Bins are supplied by council and would consist of 1 x 660L general waste Skip, 1 x 1100L mixed recycling Skip, and 1 x 360L food/garden organics MGB.

5.2.4 Presentation/Collection Transfer

- Council contractor would be responsible for moving Skips from the enclosure to the collection zone. Refer to Figure 5-2 showing transfer path.

5.2.5 Collection

- Would be by the Council contractor (EastWaste) using a rear-lift collection truck.
- Collections would be:
 - Twice weekly for general waste
 - Initially fortnightly for mixed recycling, and could be increased to weekly if required
 - Initially fortnightly for organics, and could be increased to weekly if required.
- The rear-lift truck would enter the site in a forward direction from Edward St as shown in Figure 5-2 on page 15, and then proceed to collection zone.
- After collection, the truck can then exit in a forward direction on to George Street.

5.2.6 Hard/E-waste

- Residents are entitled to two free hard waste and e-waste collection services that can be scheduled any time during the financial year.
- Waste would be presented temporarily in the car park adjacent to the bin enclosure, as shown in Figure 5-3.

Table 5-1 Waste storage and bin schedule for Routine Services, including collection frequency and collection service provider. *The type and size of bins for some commercial services may be refined in consultation with the commercial waste contractor when the building becomes operational*

Waste Source	Local Disposal Location	Collection Presentation Location	Service Provider	Routine Service	Estimated Waste/Recycling Volumes (L/wk)	Provider	Collection Frequency (Events/wk)	Max. Bins/Items Stored & Collected (per Event)		
								No.	Size (L)	Type
1. Residential - George St	Ground	George St apartments carpark	Council Contractor	General Waste	720	Council residential rear-lift	2	1	660	Skip
				Dry Comingled Recycling	600		0.5	1	1,100	Skip
				Food/Garden Organics	240		1	1	360	MGB
2. Podium Townhouses and Apartments	Level 3	Ground Level Waste Room (Residential)	Council Contractor	General Waste	4380	Council residential rear-lift	2	3	1,100	Skip
				Dry Comingled Recycling	3650		2	2	1,100	Skip
				Food/Garden Organics	1460		2	2	660	Skip
3. Supermarket	Supermarket Loading Area	Supermarket Loading Area	Private Contractor(s)	General Waste	16917	Private	7	1	3,000	Skip Bin
				Dry Comingled Recycling	3904		7	1	660	Skip
				Cardboard (Compacted)	11451		0.3	1	37,000	#N/A
				Soft Plastics (Uncompacted)	5205		7	4	200	#N/A
				Food/Garden Organics	6507		3	1	3,000	Skip Bin
4. Retail (6 tenancies), Office, and common areas	Ground Level, North / Each tenancy	Ground Level Waste Room (Retail/Comm)	Private Contractor(s)	General Waste	5174	Private	3	3	1,100	Skip
				Dry Comingled Recycling	2526		3	1	1,100	Skip
				Cardboard (Uncompacted)	686		3	1	660	Skip
				Recycled Deposit Container	115		1	1	140	MGB
				Confidential Paper	48		0.5	1	140	MGB
				Food/Garden Organics	2666		3	3	660	Skip
65 Commercial Rooms (Level 2)	Level 2, Store Room	Ground Level Waste Room (Retail/Comm)	Private Contractor(s)	General Waste	1722	Private	1	2	1,100	Skip
	Each tenancy	Each tenancy		Dry Comingled Recycling	1075		1	1	1,100	Skip
				Confidential Paper	316		1	2	240	MGB
				Clinical Waste	286		1	3	140	MGB

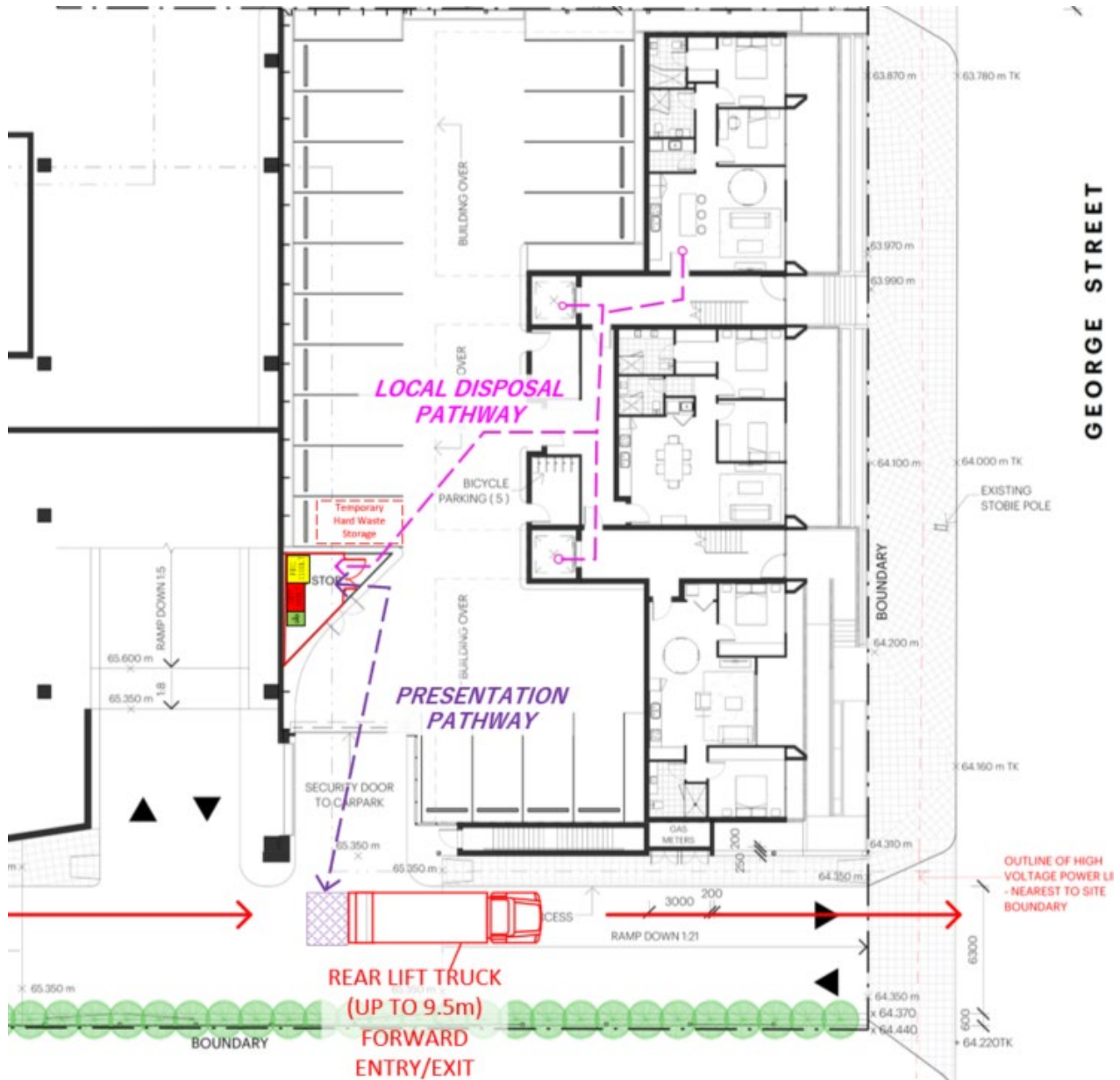


Figure 5-2 George St Apartment Arrangement showing Bin Presentation Area

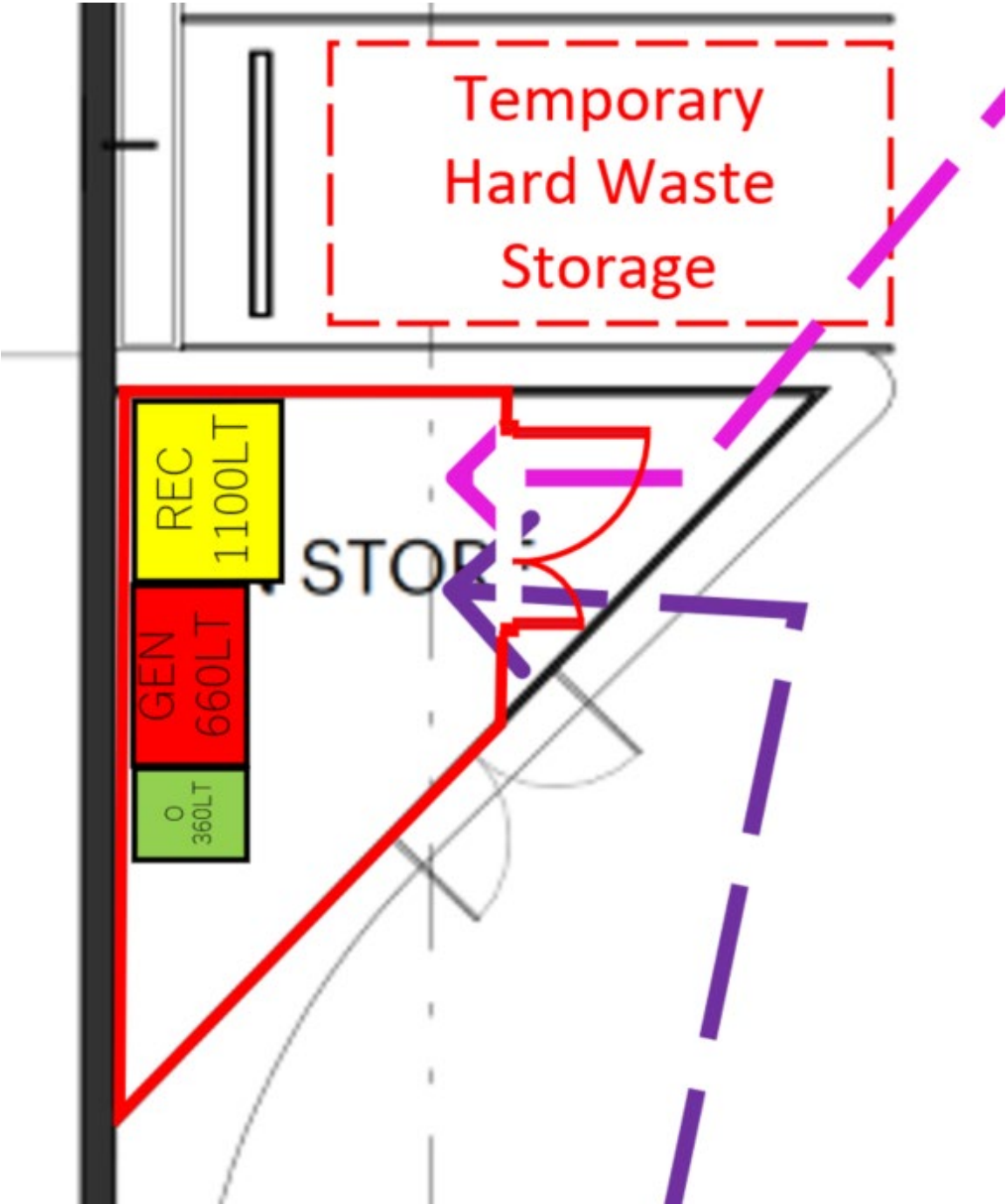


Figure 5-3 George St Apartment Bin Storage Arrangement

5.3 Podium Townhouses and Apartments (Residential)

5.3.1 Waste storage areas

- One bin storage room would be provided at the Podium level. The room would house bins for use by Townhouses and Apartments.
- The room would have space for 3 x 1,100L General Waste skips, 2 x 1,100L Mixed Recycling skips, and 2 x 660L Organic Waste skips (per Table 5-1 above)
- The storage room should be designed to be regularly cleaned with a pressure hose. This requires that the room to be graded to sewer, with 2mm screen for capturing solids.

5.3.2 User Storage

Identical to what is described for George Street apartments in Section 5.2.2.

5.3.3 Local Disposal and Waste Storage

The residents would carry waste in their kitchen bins / bin bags via corridors and Lift to the Podium Level Waste Room – see Figure 5-5 on page 19 – and dispose into the skip bins provided.

5.3.4 Presentation/Collection Transfer

- Maintenance staff would collect skip bins from the roof top waste storage room and move them to the ground level Presentation Room. Empty bins would be put in the place of full bins. Staff may use a self-propelled electric tug for moving multiple bins at once (see Figure 5-4). The Ground Level Residential Waste room would be the presentation area for collection.



Figure 5-4 Example battery powered tugs for bins (source: <https://emoveit.com.au/product-category/applications/waste-management>)

5.3.5 Collection

- Collection would be carried out by Council's contractor (EastWaste) (rear-lift service).

- Collection would be directly from the ground level Residential Waste Storage Room.
- The truck would enter in a forward direction from George St and use the Coles loading dock area to reverse back to the waste presentation room (Figure 5-8, page 22). The truck would exit to George St in a forward direction.
- Collections would be twice weekly for General Waste, Mixed Recycling, and Organics.
- The time required for collection events should be less than 10 min (per service) to park, collect and empty bins.
- Access to the waste presentation storage room would be with key or fob or secure access code.

5.3.6 Hard/E-waste

- Hard Waste and E-waste collection would be arranged by the Building / Facilities Manager (on residents' behalf). This will reduce the number of collections required by consolidating the various households' collections.
- The Building / Facilities Manager would inquire directly with a private company to arrange collection and agree suitable arrangements and presentation location(s) for the service.
- Subject to above review and confirmation with the Contractor, the temporary hard waste presentation area(s) could be set up adjacent to the bicycle parking near the northern building core.
- The waste contractor(s) delivering hard waste collection services can use the Loading Bay and access the hard waste via the northern service lift and appropriate trolleys.
- CCTV surveillance should be implemented to prevent unauthorised dumping.

The Building User Manual(s) for residents at the Development would advise on availability and/or organizing the Hard /E-waste collection services.



Figure 5-5 Second-Floor Apartment and Townhouse Tenancies

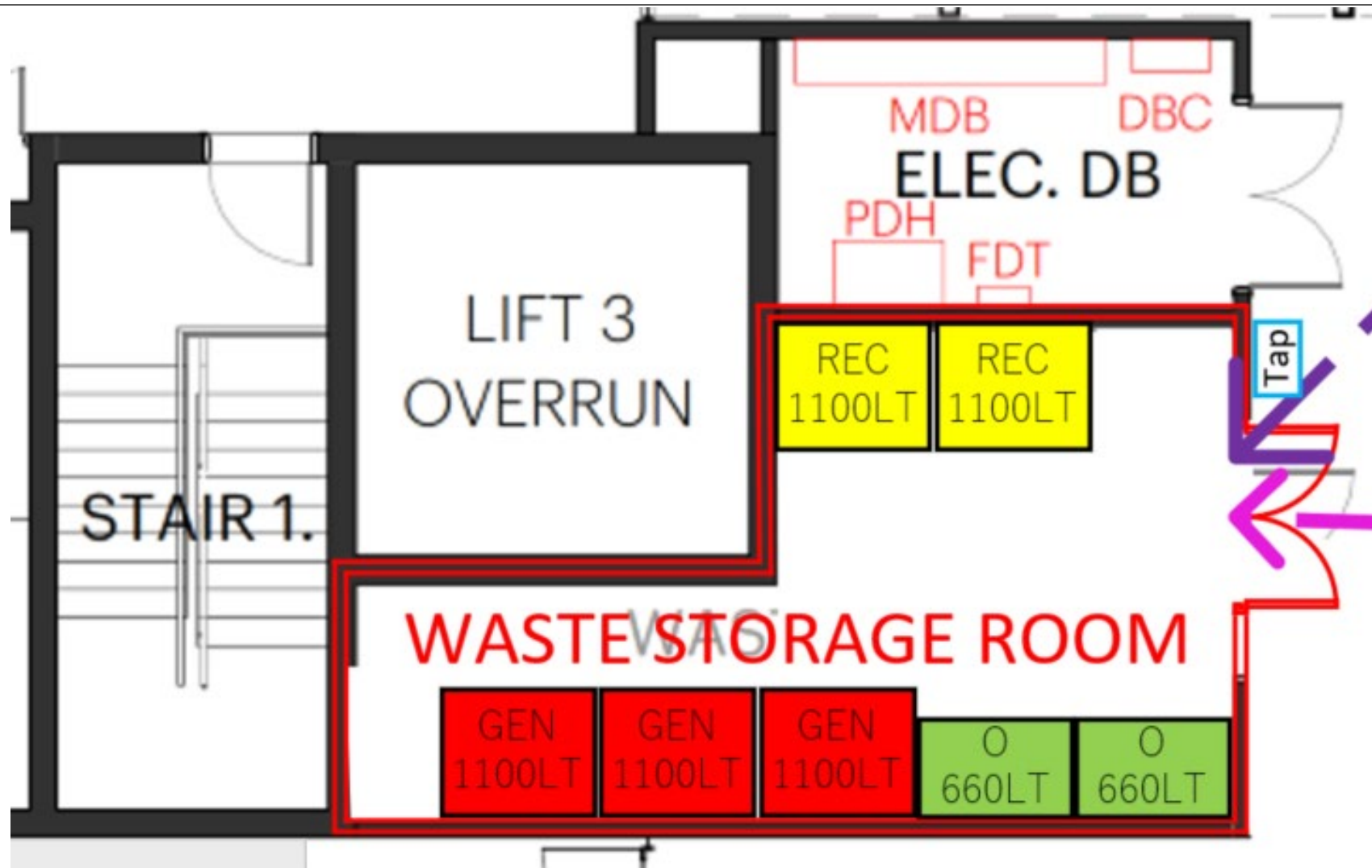


Figure 5-6 Detailed view of Roof top residential waste storage room

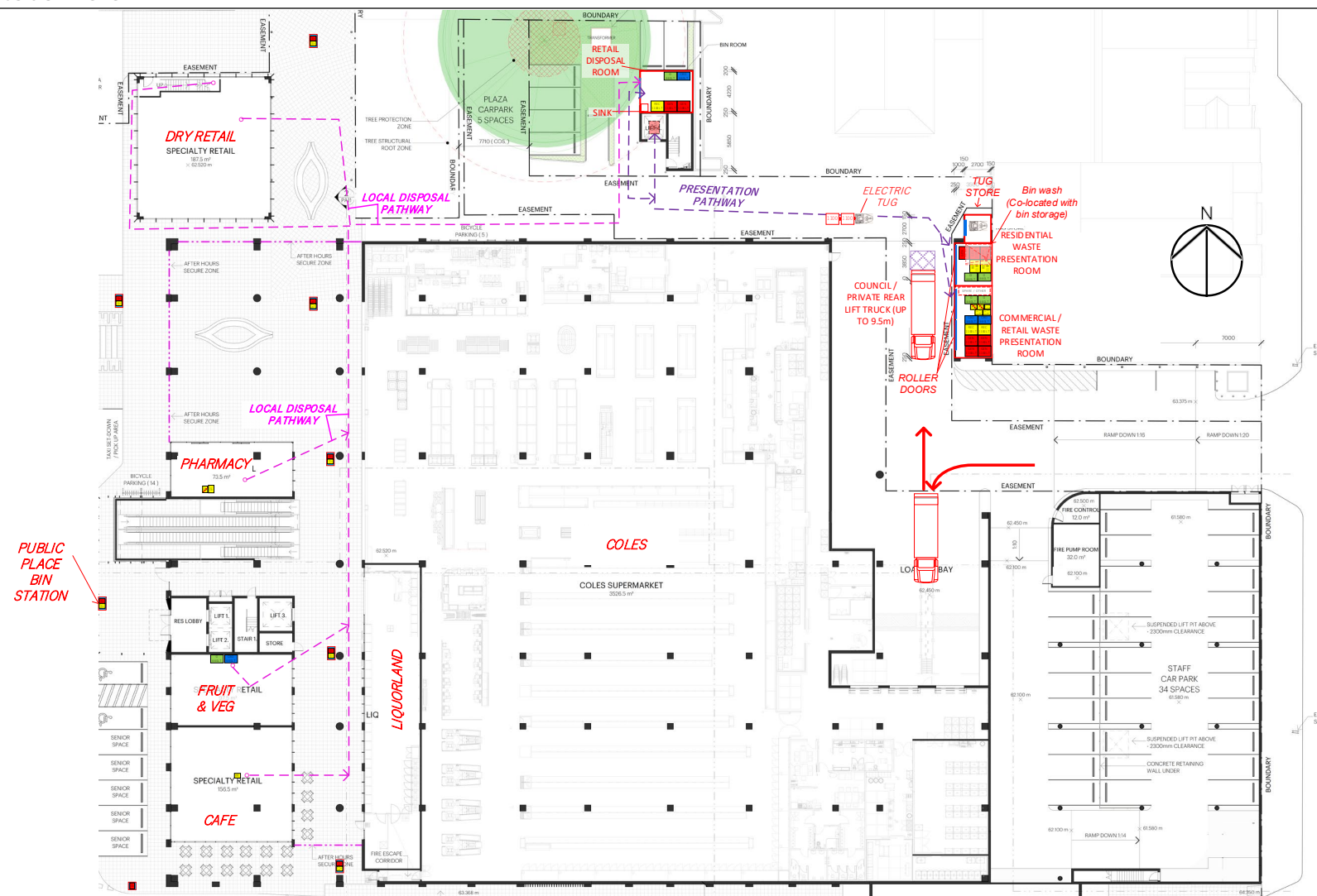


Figure 5-7: Site Overview showing Key Transfer Paths and Storage Rooms

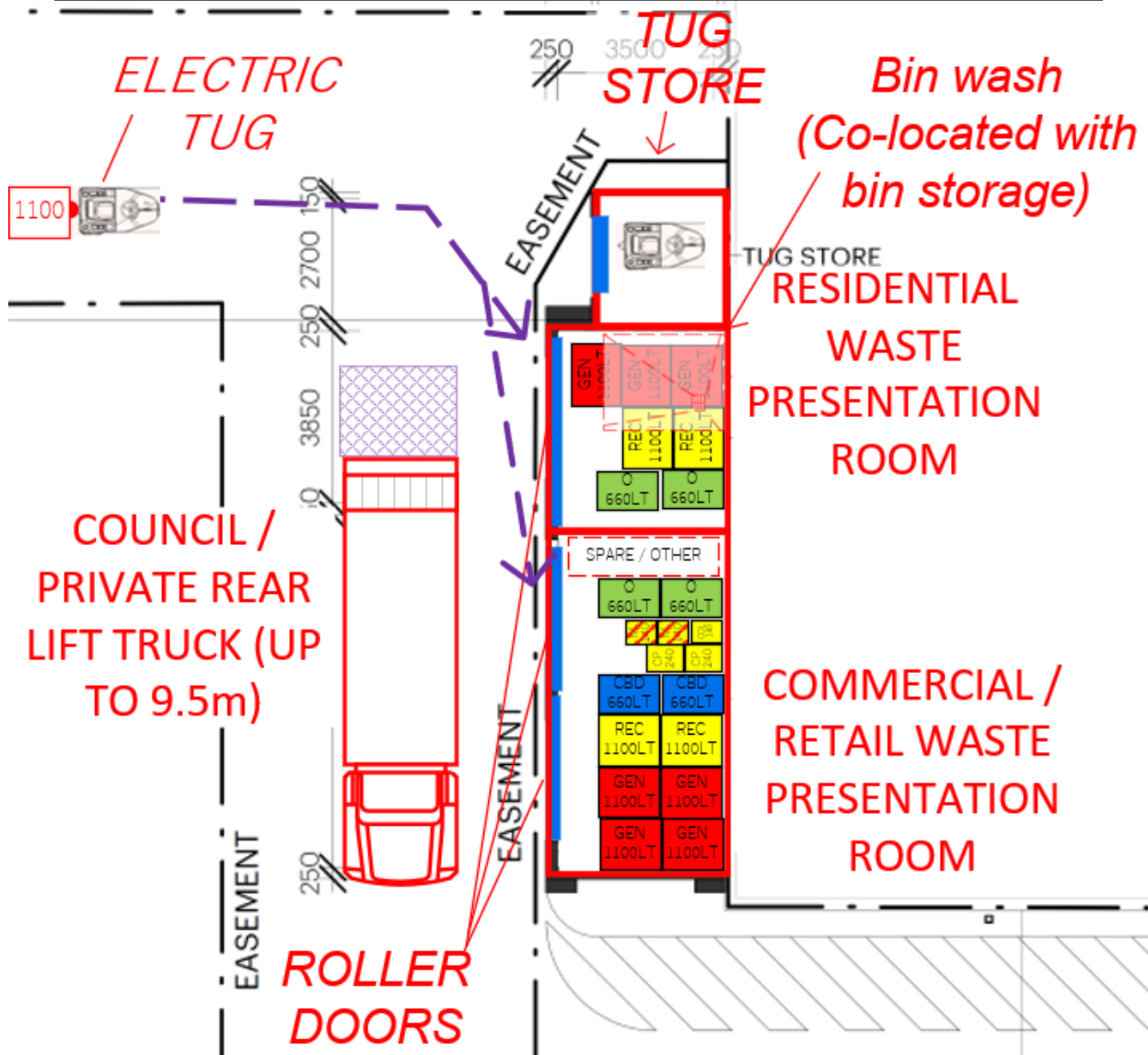


Figure 5-8 Ground Waste Presentation Room. GEN = General Waste, REC = Mixed Recycling, O = Organic Waste, CBD = Cardboard and Paper, CP = Confidential Paper, CDL = Container Deposit (10c), M = Medical Waste. Dashed = spare.

5.4 Retail and Commercial Tenancies

5.4.1 Waste Storage Areas

5.4.1.1 *Retail tenancies and Commercial office accessed from retail area*

- Each individual retail tenancy may have storage for particular uses. For example, allowance is made for the proposed Fruit & Veg shop to have a dedicated 660L cardboard recycling skip and a dedicated 660L food organics skip. The pharmacy may have a dedicated clinical waste bin.
- A room (see Figure 5-9 page 26) is provided for temporary storage of all wastes generated throughout the public areas and within the retail tenancies and the commercial office.
- This room would serve Routine waste requirements of the tenancies where cleaners or staff would collect waste and recycling in each tenancy and dispose of it in bins in this room.
- Cleaners and staff would access the room with a key or fob or access code.
- Space is provided for
 - 2 x 1,100L General Waste skip
 - 1 x 1,100L Mixed Recycling skip
 - 1 x 660L Cardboard and Paper Recycling skip
 - 1 x 660L Food organics skip
- The room would have mechanical ventilation to remove odours. The ventilation would extract to atmosphere, with location selected to avoid impact on tenants, customers, and residents.

5.4.1.2 *Medical Centre and Commercial Offices (Level 1)*

- A room (see Figure 5-11 on page 28) is provided for temporary storage of all wastes generated throughout the public areas and within the retail tenancies and the commercial office.
- This room would serve Routine waste requirements of the tenancies where cleaners or staff would collect waste and recycling in each tenancy and dispose of it in bins in this room.
- Cleaners and staff would access the room with a key or fob or access code.
- Space is provided for
 - 2 x 1,100L General Waste skip
 - 1 x 1,100L Mixed Recycling skip
 - 2 x 240L Confidential Paper MGBs
 - 5 x 140L Medical Waste MGBs
- The room would have mechanical ventilation to remove odours. The ventilation would extract to atmosphere, with location selected to avoid impact on tenants, customers, and residents.

5.4.2 User Storage

- Tenancies would have bins located in-tenancy for disposal of their waste and recycling.
- The types and size of bins would be decided during tenancy fit-out as they depend on type of commercial activity and services elected by the tenants.
- The proposed Fruit and Veg store would have its own dedicated 660L cardboard recycling bin, since it would generate a lot of cardboard (nominally 680L per week, volume may be reduced significantly by careful cutting and flattening of all boxes).
- The proposed pharmacy would have a dedicated clinical waste MGB as required.
- The medical centre would have dedicated clinical waste MGBs as required.
- The pharmacy, offices, and medical centre may have dedicated Confidential Paper MGBs as required.

5.4.3 Local Disposal and Waste Storage area

- Table 5-1 (page 14) gives a list of bin types and numbers to service the assumed tenancy configurations in Table 4-1.
- **Café and retail** – Tenancy staff or cleaners would transfer waste & recycling and/or bins via the mall to the Retail waste storage room per Figure 5-7 (page 21) and empty it into the bins provided. Access to the Retail waste room would be with key or fob or access code. Some smaller waste items (e.g. cooking oil if required for café) may be stored in the tenancy.
- **Medical Centre** – Tenancy staff or cleaners would transfer waste and recycling to the Commercial waste storage room in the building core on Level 1 (see Figure 5-10 page 27).
- **Offices** – Tenancy staff or cleaners would transfer waste and recycling to the Commercial waste storage room in the building core on Level 1 (see Figure 5-10 page 27).

5.4.4 Presentation/Collection Transfer

- **Retail waste disposal room** – Maintenance staff would collect skip bins from the Retail waste disposal room and move them to the ground level Retail/Commercial Presentation Room. Empty bins would be put in the place of full bins at the Retail waste disposal room. Maintenance staff may use a self-propelled electric tug for moving multiple bins at once (see Figure 5-4). The ground level Retail/Commercial Waste Presentation room would be the presentation area for collection.
- **Commercial waste disposal room (Level 1)** – Maintenance staff would collect skip bins (General Waste and Mixed Recycling) from the Commercial waste storage room on Level 1 and move them to the ground level Retail/Commercial Waste Presentation Room via the Service Lift at the north of the building as shown in Figure 5-10 (page 27). Empty bins would be put in the place of full bins at the Level 1 Commercial waste

disposal room. Maintenance staff may use a self-propelled electric tug for moving multiple bins at once (see Figure 5-4). The ground level Retail/Commercial Waste Presentation room would be the presentation area for collection. Access to the Commercial waste storage room would be with key or fob or secure access code.

- Medical Centre staff or cleaners would move medical waste bins to the Retail/Commercial Waste Presentation Room, for collection by a specialist contractor. Alternatively, bins may be collected directly from the tenancy.
- Confidential Paper MGBs would be moved by office staff or cleaners to the Retail/Commercial Waste Presentation Room, for collection by a specialist contractor. Alternatively, bins may be collected directly from the tenancy.

5.4.5 Collection

- Collection of all Retail and Commercial waste would be carried out by Private contractors. For general waste, mixed recycling, cardboard, and organics, a rear-lift service would be used. For other wastes (medical waste, confidential paper, container deposit, etc), specialist contractors will determine the lift method (typically side lift or rear tailgate lift).
- Collection would be directly from the ground level Retail/Commercial Waste Presentation Room. For confidential paper and medical waste, collection may be directly from each Tenancy as required.
- The truck would enter in a forward direction from George St and use the Coles loading dock area to reverse back to the waste room (see Figure 5-7, page 21). The truck would exit to George St in a forward direction.
- Collections would be three times weekly for General Waste, Mixed Recycling, Cardboard, and Organics.
- The time required for collection events should be less than 10 min (per service) to park, collect and empty bins.
- Collections for Container Deposit (CDL) bins would be once per week or as required. The time required for collection events should be less than 5 minutes.
- Collections for Confidential Paper bins would be once per week or as required. The time required for collection events should be less than 10 minutes, or 15 minutes if collected from tenancies.
- Collections for Medical Waste bins would be once per week or as required. The time required for collection events should be less than 10 minutes, or 15 minutes if collected from tenancies.
- Access to the Retail/Commercial waste storage room would be with key or fob or secure access code.

5.4.6 Hard/E-waste

- Tenants would organise for private hard/e-waste collection direct from their tenancies as needed.
- The waste contractor delivering the services would use the loading bay at the rear of the building. Access to the tenancies will be via the mall for ground

- floor tenancies and via the service lift at the north of the building for Level 1 tenancies.
- The Building User Manual(s) for commercial tenants at the Development would advise on availability and/or organizing Hard /E-waste collection services.

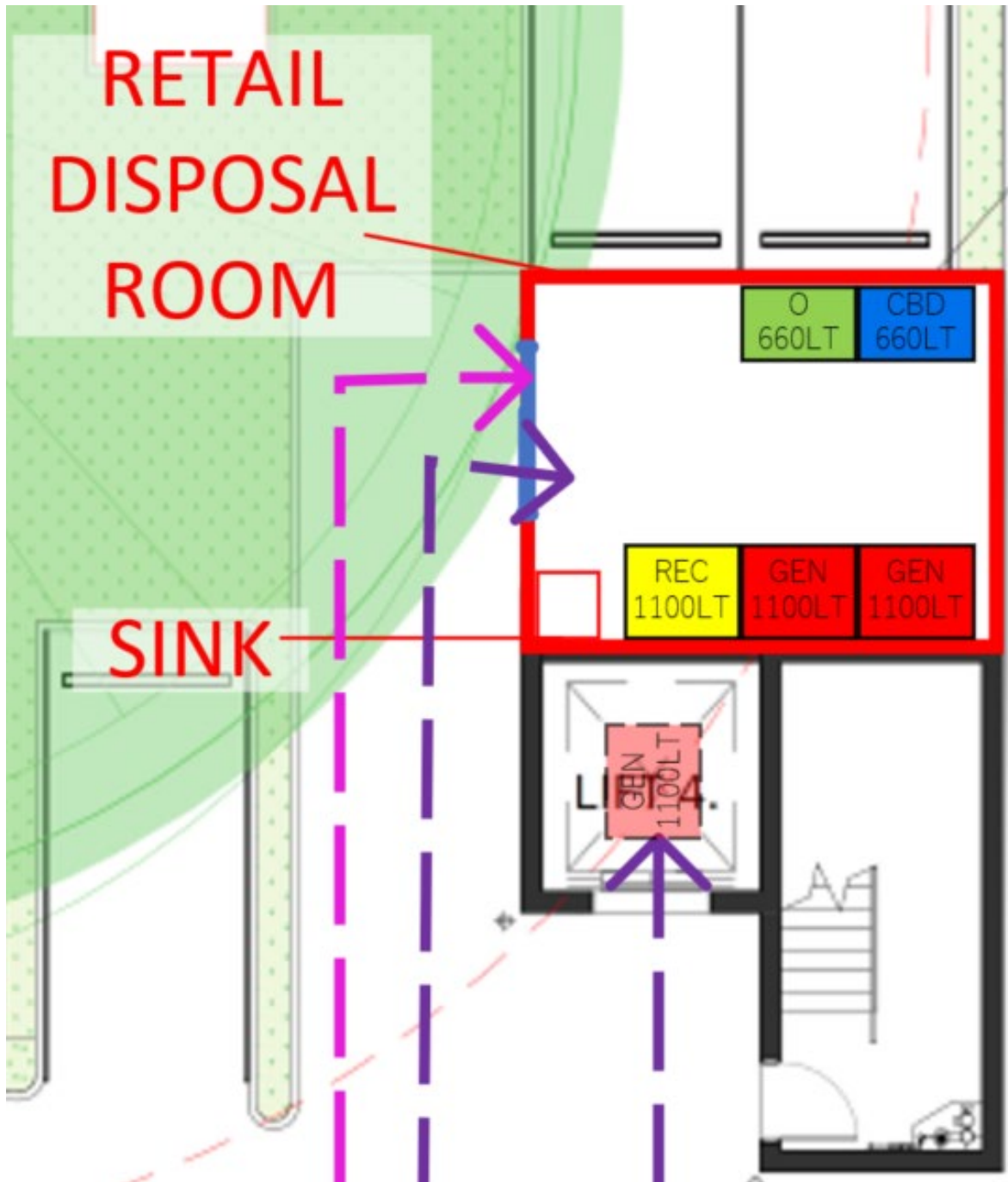


Figure 5-9 Detailed view of the Retail Disposal Room on Ground Floor

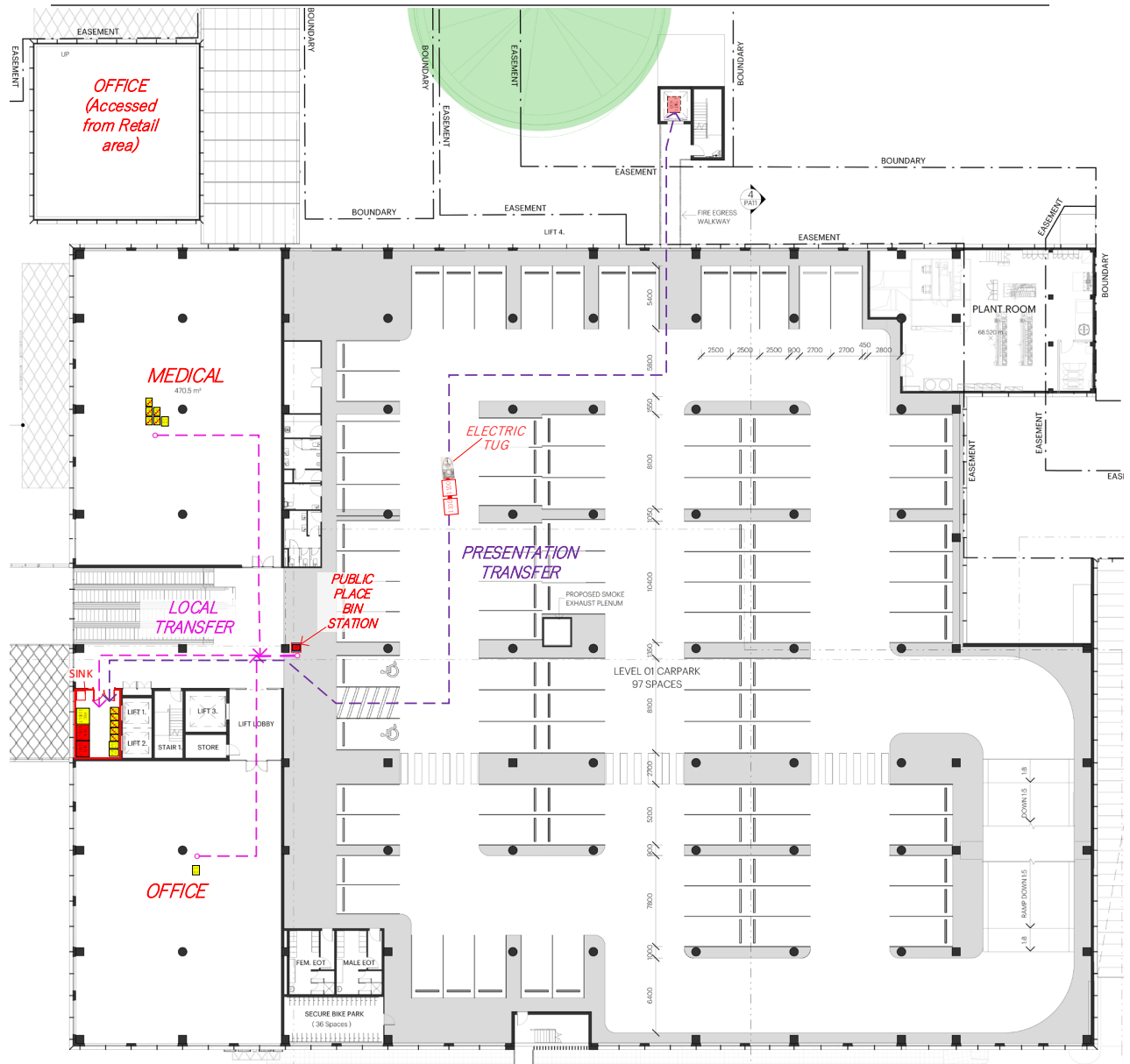


Figure 5-10 First Floor Commercial and Medical Tenancies showing local and presentation transfer pathways

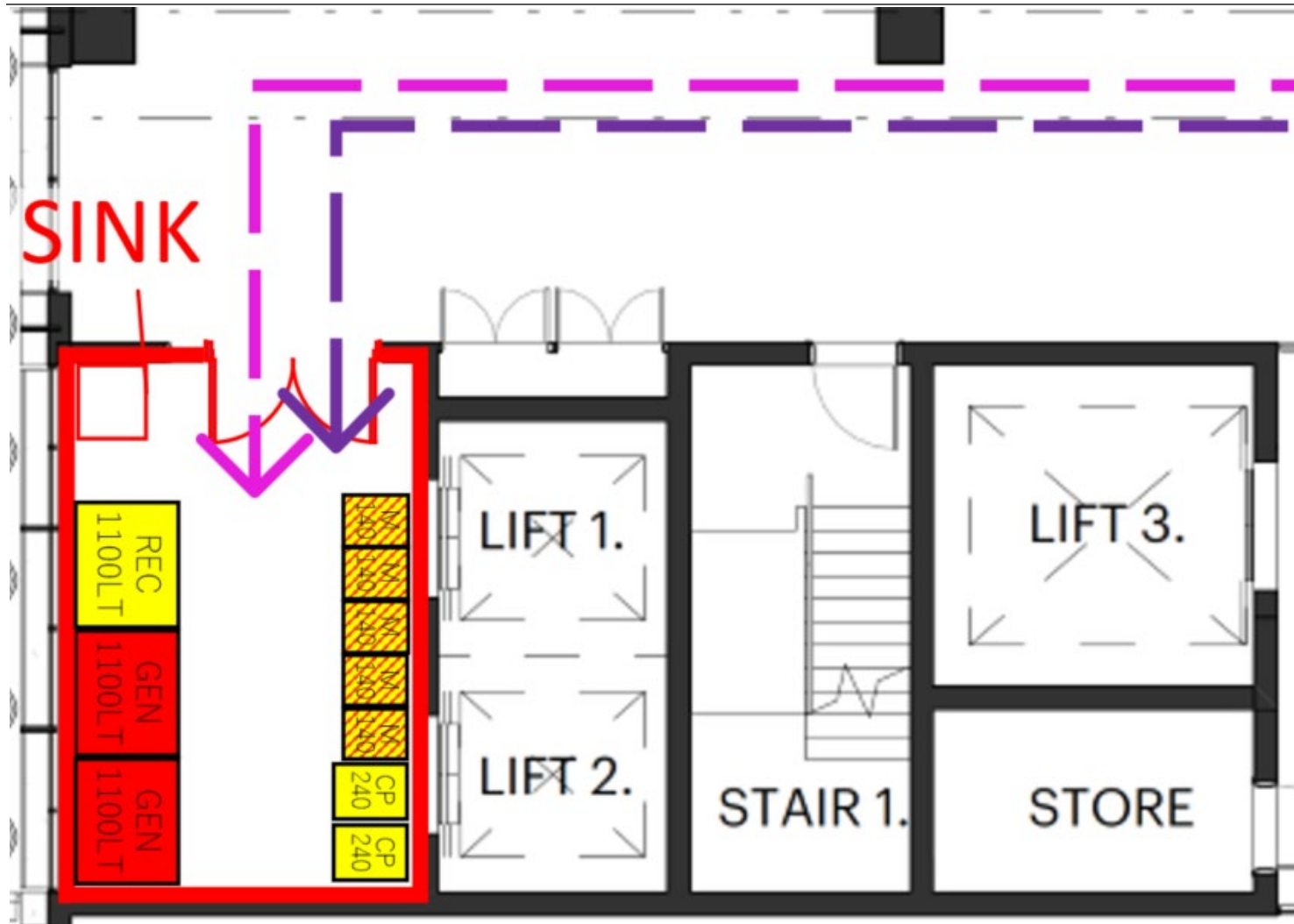


Figure 5-11 First Floor Commercial / Medical Disposal Storage Room, GEN = General Waste, REC = Mixed Recycling, CP = Confidential Paper, M = Medical Waste

5.5 Supermarket

5.5.1 Waste Storage Areas

A waste management area is provided for the supermarket as shown in Figure 5-14 (page 32). This area will also be used by the liquor store.

Key elements provided in this area are:

- General Waste 3,000L front-lift skip bin
- Packaged Food Organics 3,000L front-lift skip bin
- Mixed recycling 660L rear-lift skip bin
- Horizontal cardboard compactor with 37m³ compactor bin
 - Example compactor is shown in Figure 5-12.
 - The compactor can reduce volume of cardboard by 6 or more times. This reduces space needed for storage.
 - For the Norwood development, the loading dock is at the same level as the supermarket floor level. It is therefore necessary for the chute into the compactor to be approximately horizontal. Coles's preferred supplier of compactors (Wastech) has confirmed that a horizontal chute would be suitable if designed correctly.

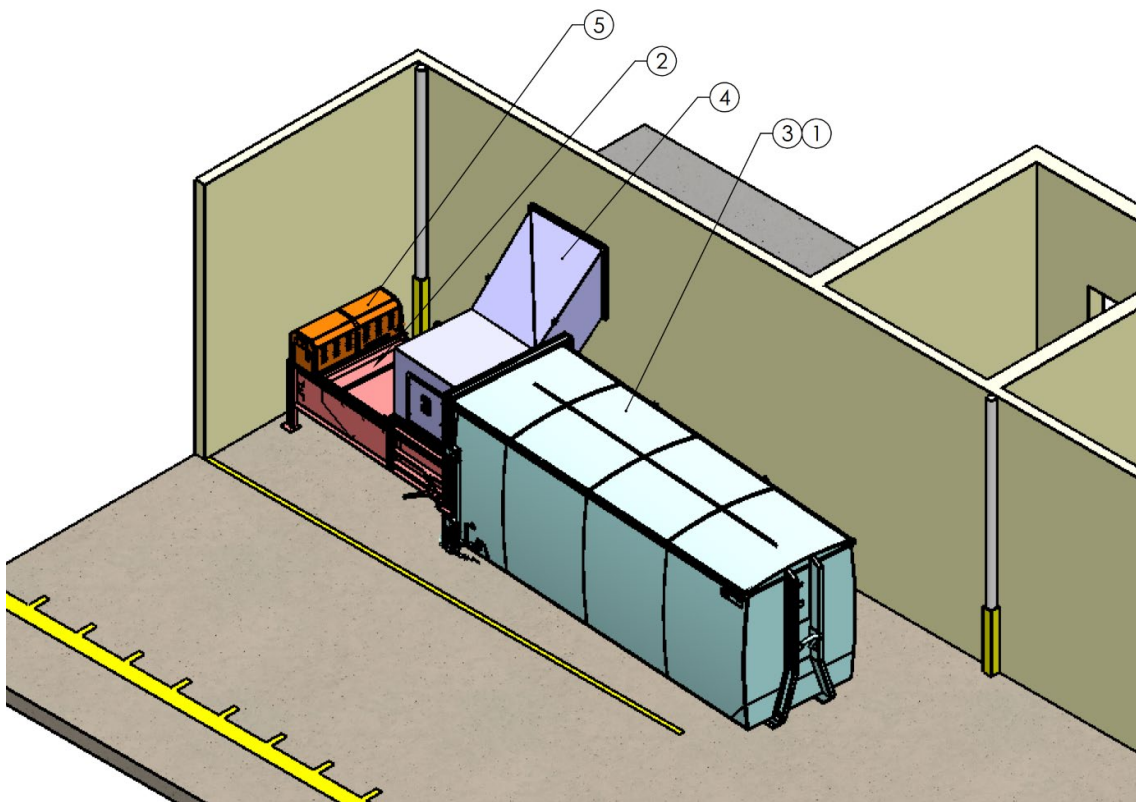


Figure 5-12: Typical cardboard compactor (2) and compactor bin (3/1). Cardboard disposed from supermarket through chute (4)

- Soft Plastics bale frame and set down area.
 - Soft plastics are manually pushed into a large bag suspended in the bale frame.
 - Once full, the bag is removed from the frame and stored in the soft plastics set down area.
 - Bagged soft plastics may be returned to the Coles Distribution Centre (DC) as a back-load after goods are delivered to the supermarket. Plastics may be aggregated and recycled from the DC.



Figure 5-13 Typical soft plastics bale frame (source: www.wanless.com.au)

5.5.2 User Storage

Bins would be located throughout the supermarket as required. For example, small bins at each cash register, bins in back of house food preparation areas, mobile bins for shelf re-stocking, etc. The types and sizes of bins (e.g. 5L, 20L, 40L, 140L MGB, etc) would be dependent on each function and will be determined during store fitout.

5.5.3 Local Disposal and Waste Storage area

- General wastes will be collected by store cleaning staff daily or as required, and transferred to the back of house area.
- Various supermarket staff members will be responsible for transferring wastes to the back of house area throughout the day. E.g. cardboard waste moved to the cardboard baler as it is generated.
- Cardboard would be compacted and stored as described in Section 5.5.1
- Soft plastics would be bagged and stored as described in Section 5.5.1.
- General waste would be disposed into the 3,000L general waste skip.
- Packaged Food Waste would be disposed into the 3,000L packaged organics skip. Cleanaway has recently begun providing a Packaged Organics service for Coles supermarkets in Adelaide. This enables Coles staff to dispose food waste still wrapped in plastic. Cleanaway has equipment at their depot to mechanically remove the plastic before further processing.
- Mixed Recycling would be disposed into the 660L recycling skip

5.5.4 Presentation/Collection Transfer

- Cardboard would be stored in a 37m³ compactor bin as shown in Figure 5-12 until collection.
- Bagged soft plastic would be stored as shown in Figure 5-14 until baling as a batch (if desired). If baled, the palletised bale would be stored with cardboard bales until collection.
- Mixed Recycling, General Waste, and Organics skips will be collected directly from the storage location.

5.5.5 Collection

- All collection services would be provided by private contractors
- All collection vehicles would enter the loading area with forward entry from George Street.
- Collection of Compacted Cardboard bin (once every 3 weeks) would be by hooklift truck. The truck would reverse into the loading dock, using the Residential/Retail/Commercial Collection area for turning. Sufficient overhead clearance (more than 5,400mm) is provided in the area where the bin will be lifted. Each collection event would last 10-15 minutes. Following collection, truck would exit in a forward direction to George Street. After emptying (around 2 hours), the bin would be returned and replaced. A further 10-15 minutes required for this operation.
- Collection of the 3,000L General Waste and Packaged Organics skips would be with Front Lift truck. The truck drive forwards into the loading dock, stopping just short of the skip storage location. The driver would exit the truck and pull the skip out from the storage location. Overhead clearance (4,700mm) at this location will be insufficient to empty the skip into the truck, as indicated in Figure 5-14. Overhead clearance of approximately 5,800mm is required. Therefore, the driver would return to the truck, drive forward to lift the skip slightly off the ground, then reverse until the truck and skip are clear of overhead structures. The skip would then be tipped into the truck. Once empty, the skip would be lowered to just above ground level, and the truck will drive forward to the bin storage location. The driver would then exit the truck and push the empty skip back into the storage location. Cleanaway (Coles's current contractor) has confirmed this arrangement would be acceptable. Collection would be six to seven times per week for General Waste and three times per week for packaged organics, with each collection lasting 5 to 10 minutes.
- Collection of Mixed Recycling would be by Rear Lift Truck. The truck would reverse into the supermarket loading dock as indicated in Figure 5-14. The contractor would provide a pull in / pull out service, collecting the skips from the waste storage area. Collection would be six to seven times per week. Each collection event would last 5-10 minutes.

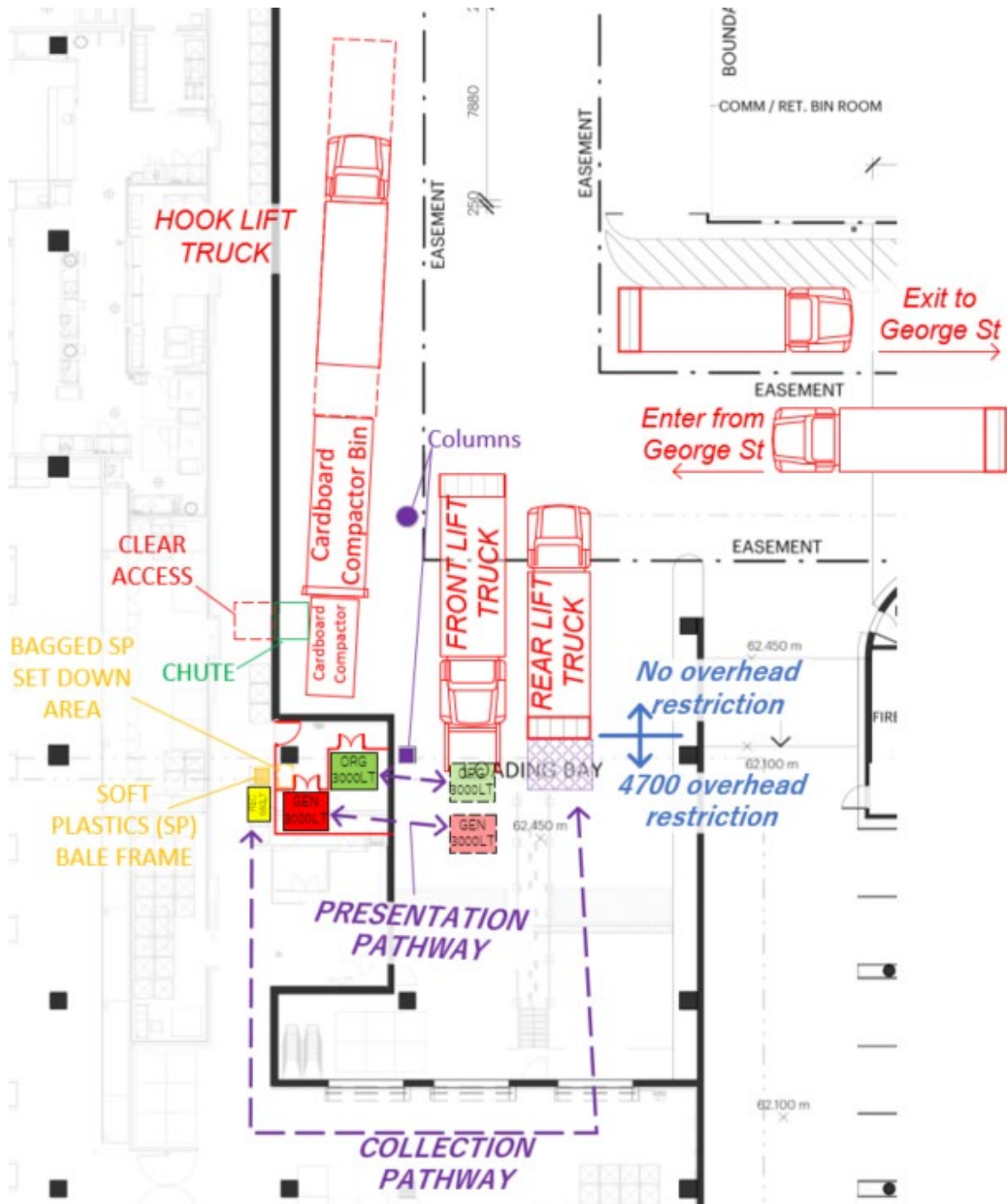


Figure 5-14 Coles Waste Management GEN = General Waste, ORG = Organic, REC = Recycling, SP = Soft Plastics

5.6 Maintenance Services

Waste would be generated by some maintenance services or activities in the building and commercial tenancies at the site (e.g. lighting, repair work, cleaning of commercial toilets, etc.). These maintenance-generated waste materials would be handled and disposed of by the contractor undertaking these services.

[Dedicated on-site storage for these waste materials is therefore not needed.]

5.7 External

Residents and commercial tenants would be able to dispose of smaller waste items, such as printer cartridges, batteries and lighting, to publicly available external drop off points (e.g. supermarkets, Office works, telco retail stores, etc.), which accept these materials.

The Building User Manual(s) for residents and commercial tenants at the Development will include advice on external drop-off points for these waste items, which may include reference to Council advice available at their Web site.

5.8 Bin cleaning (& On-site Bin Wash Area)

A dedicated on-site bin cleaning area would be provided inside the Waste Presentation Room – see Figure 5-8 on page 22

- This bin wash area would require grading to a sewer drain with basket screen to remove gross solids, tiles or epoxy coating to water-proof adjacent walls and flooring, standard cold-water supply faucet and commercial-grade electrical power supply (if pressure washer system is to be used), plus bunds and screens for use during bin wash events.
- Bin washing activity for residential bins and access by commercial tenants would be managed by the Building/Facilities Manager.
- Bin washing would be timed to occur immediately after bins are emptied.
- Bin washing could be facilitated with a mechanical lifting device such as that shown in Figure 5-15



Figure 5-15 Mechanical bin washer Source: <https://emoveit.com.au/product/bin-blaster-mobile-wheelie-bin-washer>

Alternatively, bin cleaning at the Development could be outsourced to an external contractor (e.g. <http://binforce.com.au/>).

- These external contractors generally have self-contained bin washing systems on back of ute or truck that enable them to clean bins on site – e.g. Figure 5-16 below.
- Some service providers will remove bins from site, replacing them with an empty spare, clean the bins, then return them to site.



Figure 5-16 On-site bin wash system for rear-lift trucks on back of ute. Source: <http://binforce.com.au/>

5.9 Transfer pathways

There are range of transfer pathways for the waste systems at the Development, which were described in earlier in Section 5. The following is provided as a guide for sizing and designing these transfer pathways.

- *Transfer pathways –*
 - *User disposal – prefer less than 50m each way and free of steps, no grades greater than 1:15, and cater for mobility impaired users.*
 - *Local disposal points to central storage – enough width to accommodate relevant bins or waste loads being transferred, free of steps, no grades greater than 1:12*
 - *Collection – less than 30m with no steps or grades greater than 1:10*
- *Corridor widths –*
 - *240L MGBs or smaller bins / loads – min. 1,000 mm (1,200mm preferred)*
 - *660L skip bins – min. 1,200mm (1,400mm preferred)*
 - *1,100L skip skips and/or other waste loads – min. 1,500mm (1,600mm preferred)*
- *Doors –*
 - *Local disposal access – 800mm*
 - *Transfer pathways– Appropriate to the size of bin to be transported, e.g.*
 - *240L MGB (or smaller) – min. 800mm*
 - *660L skip – min. 1,200mm*
 - *1,100L skip – min 1,400mm*
- *Floors – Hard surfaces where bins and skips are to be carted*
- *Lifts – All lifts should be sized to a minimum of 1400mm to allow transfer of 1100L skip bins.*

Based on current plans, these requirements for transfer pathways in the Development appear to be generally satisfied. All relevant transfer pathways should be reviewed and confirmed at detailed design stage to ensure they are appropriate, including with Council for their residential collection services.

5.10 Collection & Traffic Issues

5.10.1 Collection Point & Events

The waste collection point for the Development introduced above is reiterated below.

- Most collections (excluding for George Street apartments) are made by parking in the loading bay at the rear of the building per Figure 5-7 on page 21 and Figure 5-14 on page 32. Access into the Waste Presentation Rooms is through roller doors with key or fob or secure access code.
- Overhead clearance of minimum 3.8m (from floor to soffit) is required for rear lift trucks for access and operation of the bin lifting equipment.
- Overhead clearance of minimum 5.8m (from floor to soffit) is required for front lift trucks for access and operation of the bin lifting equipment
- Overhead clearance of minimum 5.4m (from floor to soffit) is required for hook lift trucks for access and operation of the bin lifting equipment
- Collection will be completed within 10 minutes per service.
- Collections should be timed to minimise noise disruptions and to minimise restriction to delivery vehicle access to the supermarket loading dock.
- George Street apartments collections are made by forward entry to site from Edward St and forward exit to George Street. There are no overhead restrictions in the collection zone. Each collection will take 2 to 3 minutes.

5.10.2 Traffic Issues

Access to the Loading Bay is from George Street (forward entry and forward exit). Swept path analysis has been carried out by the traffic engineer to ensure safe reversing access into the loading bay.

Refer to the Traffic Report by Traffic Engineer for additional discussion of collection truck access to the Development.

5.11 Management & Communication

5.11.1 Responsibilities

Table 5-2 summarises the responsibilities of different parties / stakeholders for proposed waste management and operational activities at the Development. In summary:

- **George Street Apartments** - The Building / Facilities Manager would be responsible for managing the waste system, but residents would play an important role in managing their local disposal activities and accessing the Council hard waste service, and Council (at its discretion) may support the

Building / Facilities Manager with resident engagement and education to help drive good waste management outcomes.

- **Podium Residential (Apartments / Townhouses)** – The Building / Facilities Manager would be responsible for managing the waste system, but residents would play an important role in managing their local disposal activities and accessing the Council hard waste service, and Council (at its discretion) may support the Building / Facilities Manager with resident engagement and education to help drive good waste management outcomes; and
- **Commercial tenancies** – The Building / Facilities Manager would manage the waste system, including ensuring that good waste management outcomes by tenants were achieved.

Table 5-2 Management & operational responsibilities for the waste systems at the Development

Waste System	Activity	Responsible party
Residential	<i>Local Disposal & External Disposal</i>	Residents
	<i>Waste Storage Areas, Hygiene, Odour Management & Cleaning</i>	Building Manager & their property management staff
	<i>Collection services – Standard Waste & Recycling</i>	Council Contractor (EastWaste)
	<i>Collection services – Hard Waste by private contractor</i>	Building Manager booking it with private contractor on tenants' behalf
	<i>Management</i>	Building Manager
	<i>Education, Training & Engagement (Residents)</i>	Building Manager
Commercial/Retail tenancies	<i>Local Disposal, Hard Waste & External Disposal</i>	Tenants
	<i>Waste Storage Areas, Hygiene, Odour Management & Cleaning</i>	Tenants, Building Manager
	<i>Collection services – Waste & Recycling</i>	Commercial / Private Contractor(s)
	<i>Management</i>	Building Manager
	<i>Education, Training & Engagement (tenants)</i>	Building Manager
Supermarket	<i>Local Disposal, Hard Waste & External Disposal</i>	Staff
	<i>Waste Storage Areas, Hygiene, Odour Management & Cleaning</i>	Staff, Store Manager
	<i>Collection services – Waste & Recycling</i>	Commercial / Private Contractor(s)
	<i>Management</i>	Store Manager
	<i>Education, Training & Engagement (tenants)</i>	Store Manager

5.11.2 Implementation & Communication

5.11.2.1 Apartment Building residential

To successfully implement this WMP, the following may need to be considered or should be put in place.

- **Mandated responsibilities for apartment residents** – Obligations for residents to properly access, operate and use the waste systems provided should be written into any tenancy residency agreement and/or incorporated into the Community/Strata plan lodged with the Lands Titles Office.
- **Resident Induction** – Should include first-day guidance on how to correctly use the waste systems.
- **Building User Manual** – Advice and instructions on waste management and using the waste systems should be included in the Building User Manual(s) developed for residents, including contact information for further information, questions and issues.
 - *This may include advice to residents on how to properly dispose of other waste / recycling items including lighting, batteries and hazardous household waste*
- **Emergency Response &/or Property Management Plan(s)** – Should include response measures (or contingencies) for:
 - *Collection services suspended or not available;*
 - *Incorrect use by residents of the waste systems; and*
 - *Illegal dumping on-site.*

5.11.2.2 Commercial/Retail tenants

Like the Apartment residential system above, the following should be put in place

- **Community/Strata title arrangements for commercial property owners** – Obligations for the commercial tenants and/or property owners to properly access, operate and use the waste systems would be written into any tenancy agreement and the Community/Strata plan lodged with the Lands Titles Office.
- **Site Management System / Manual** – Advice and instructions on waste management and using the waste systems should be provided for tenants, including contact information for further information, questions and issues.
- **Tenant Induction** – Should include guidance on how to correctly use waste /recycling bins as well as the site approach to waste and recycling.
- **Emergency Response or Site Management Plan(s)** – Should include response measures (or contingencies) for:
 - *Waste collection services suspended or not available;*
 - *Incorrect use by tenants of the waste systems;*
 - *Illegal dumping on-site; and*
 - *Poor waste management outcomes (including cleanliness, odour and/or low diversion).*

5.11.2.3 Supermarket / Liquor store

- **Site Management System / Manual** – Advice and instructions on waste management and using the waste systems should be provided for staff, including contact information for further information, questions and issues.
- **Staff Induction and training** – Should include guidance on how to correctly use waste /recycling bins as well as the site approach to waste and recycling. Training should be provided on use of the cardboard compactor.
- **Emergency Response or Site Management Plan(s)** – Should include response measures (or contingencies) for:
 - *Waste collection services suspended or not available;*
 - *Incorrect use by staff of the waste systems;*
 - *Illegal dumping on-site; and*
 - *Poor waste management outcomes (including cleanliness, odour and/or low diversion).*

5.12 Other Waste System Design or Management Issues

The following would be considered and/or implemented for waste systems at the Development. More details for some of these items can be resolved at detailed design stage with the waste contractor and/or Council.

- 1) **Bins** – These would comply with Australian Standard for Mobile Waste Containers (AS 4213). Residential bins would be supplied by Council.
- 2) **Signage** –
 - Appropriate signage in all Local Disposal and Waste Storage Areas should be used to ensure correct disposal of waste and recycling.
 - This signage should conform to the signage requirements of Council and/or the State Guideline (Zero Waste SA, 2014).
- 3) **Vermin, hygiene & odour management (inc. ventilation)**
 - **Inspection & Cleaning** –
 - An inspection and cleaning regime would be developed and implemented by the Building / Facilities Manager for waste systems at the Development, including ensuring that surfaces and floors around disposal areas, transfer pathways and waste storage areas are kept clean and hygienic and free of loose waste and recycling materials.
 - *Where putrescible general waste or food waste is being stored, Local Disposal and Waste Storage areas should be graded to a sewer drain with tiling or epoxy coating to floors and adjacent walls to waterproof the area and for cleaning.*
 - **Odour Control** –
 - All Waste Storage Areas –
 - *Where putrescible general waste or food waste is being stored, these areas would be mechanically ventilated for control of odours.*

- *The ventilation would extract to atmosphere, to prevent odour build up.*
- *The extraction vent discharge location would be selected to avoid impact on residents, tenants and/or neighbours.*
- *It should be a requirement for food waste bins in Waste Storage areas that lids are closed after use.*

4) Access & security –

- All Waste Storage Areas (residential and commercial) in the Building should be secure and only accessible by key or fob or access code.
 - *This key or fob or access codes would be provided to residents, tenants, property management staff and/or waste contractor(s) collecting from these areas.*
 - *CCTV is recommended to monitor waste disposal practices in all Waste Storage Areas.*

6 REFERENCES

John Townsend, C. (2019, Mar 27). Movement of 3000L skips with truck. (J. Phillips, Interviewer)

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Pawa, R. (2019, October 11). EastWaste services to Norwood Payneham & St Peters. (J. Phillips, Interviewer)

Zero Waste SA. (2014). South Australian Better Practice Guide – Waste Management in Residential or Mixed Use Developments.



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COLES NORWOOD MIXED DEVELOPMENT – HERITAGE IMPACT STATEMENT

Introduction

The following report has been prepared by Andrew Stevens B. Arch., RAlA at the request of Studio Nine Architects on behalf of 166 The Parade Pty. Ltd.

The purpose of the report is to provide an assessment of the heritage impact of the proposed mixed use development at 166 The Parade, Norwood.

In order to prepare the report I have reviewed relevant documentation and resources including the following:

1. Studio Nine Architects drawings:
 - 0906-184-PA01 Site Plan
 - 0906-184-PA02 Ground Floor Plan
 - 0906-184-PA03 George St Townhouse/First Level Plan
 - 0906-184-PA04 Second Level Plan
 - 0906-184-PA05 Third Level Podium Plan
 - 0906-184-PA06 Apartments Level 1 & 2
 - 0906-184-PA07 Apartments Level 3 & Penthouse Level
 - 0906-184-PA08 Apartment Roof Plan
 - 0906-184-PA09 External Elevations
 - Three dimensional drawings
2. Norwood Payneham and St Peters (City) Development Plan, consolidated 21 March 2019.
3. Kensington & Norwood Heritage Review, Mark Butcher Architects, 1995.
4. Kensington & Norwood Heritage Survey – Stage 2, John Dallwitz and Susan Marsden, 1985.
5. SA Heritage Places Database.

Proposed development

The proposed development at 166 The Parade, Norwood involves the demolition of existing buildings on the site, including an existing supermarket and various retail outlets, amenity and storage buildings, along with associated carparking and landscaping. The new works involve construction of a mixed development comprising a new supermarket, specialty shops and retail and medical tenancies, carparking, townhouses, apartments and associated landscaping. The new works also include upgrading the pedestrian mall that

connects the supermarket and retail tenancies with the shopping strip of The Parade and a new canopy over the mall.

The layout of the proposed development is similar to the existing conditions at ground floor level with the supermarket centrally located on the site, new retail tenancies close by and carparking to the west.

A three-storey apartment building faces George Street with associated carparking below ground level.

Above the supermarket, at first floor level, there are commercial tenancies and carparking, with a further level of carparking at second floor level. The built form of the supermarket, commercial tenancies and carparks forms a podium, 13.7 metres high.

Rising from the podium level are two apartment buildings and four clusters of townhouses arranged around a landscaped open space. The townhouses are a further two storeys high and the apartments a further five stories high above the podium level. The townhouses are therefore five storeys above ground level and the apartments eight storeys above ground level.

Heritage places

There is one State heritage place near the subject site. It is the Norwood Town Hall at 175 The Parade.

There are several local heritage places in proximity to the subject site. They are as follows:

140-144 The Parade, Two-storey Shop, (cnr. Edward Street).

160 The Parade, Shop.

162 The Parade, Shop.

164 The Parade, Shop.

166 The Parade, Shop.

168-178 The Parade, Row of Shops.

186 The Parade, Shops.

188 The Parade, Dwelling & Bank.

55 George Street, Salvation Army Citadel.

65 Edward Street, Villa.

80 Edward Street, Villa.

84 Edward Street, Villa.

86 Edward Street, Villa.

Design approach and methodology

The proposed development has been designed with the potential for heritage impact in mind. The nearby heritage places mentioned above were identified very early in the design process and the heritage assessment sheet for each place sourced from heritage surveys in order to properly understand where their heritage value lay. Relevant development plan policy was then reviewed so that design development could be undertaken in a way that responded appropriately to relevant policy concerning heritage impact and with consideration of how the proposed development might impact on the heritage value of individual places.

Amongst other things, it was noted that relevant development plan policy appropriately sought new development that maintains the heritage value of places and maintains the streetscape prominence and integrity of individual places. Design development of the proposed development proceeded accordingly with reviews during the process to ensure consistency with relevant policy and compatibility with the heritage value of places.

The outcome is a refined, well-modulated built form that responds positively to the contextual conditions of the locality.

The separation of apartments and townhouses breaks down apparent bulk and scale and maintains a sense of space around built form. The larger building elements are well set-back from and some distance from heritage places. Building elements in close proximity to heritage places have regard for their heritage value and relate positively to the context. The heritage impact of the proposed development is discussed in more detail below.

Relevant development plan policy

The subject site is located within Area C of the Retail Core Policy Area of the District Centre (Norwood) Zone of the Norwood Payneham and St Peters (City) development plan. The subject site is adjacent or near a number of heritage places.

I have considered the heritage impact of the proposed development at 166 The Parade, Norwood against relevant provisions of the Norwood Payneham St Peters (City) Development Plan consolidated 21 March 2019 and in respect of the heritage value of the State heritage place, (Town Hall), and local heritage places nearby.

In my opinion, development plan provisions of most relevance to assessment of the heritage impact of the proposed development are as follows:

- City Wide
 - Design and Appearance of Land and Buildings
 - Objective 21
 - PDC 32
- Heritage
 - Objectives 108, 109, 111 and 112
 - PDC's 346, 347, 359 and 361
- District Centre (Norwood) Zone
 - Objectives 1 and 3
 - Desired Character
 - PDC's 4, 5, 7, 8, 10 and 18
- Retail Core Policy Area
 - Objectives 1 and 2
 - Desired Character
 - PDC's 1, 2, 3 and 4

The subject site

The subject site is located at 166 The Parade, Norwood. It is on the southern side of The Parade and within the main retail precinct of Norwood. The site is connected with The Parade by a pedestrian walkway which is approximately half-way between George Street and Edward Street. In other respects it does not abut the Parade, being located behind a row of single-storey and two-storey shops, a number of which are local heritage places. The remainder of the site is bounded by George Street to the east, Edward Street to the west and Coke Park and existing dwellings to the south.

The sites slopes from the east down towards the west.

The nature of the proposed development

The proposed development is eight storeys high with a supermarket, shops and open carpark at ground floor level, offices and carparking at first floor level, carparking at second floor level, townhouses, apartments and landscaping at third floor level and apartments at the fourth to seventh floor levels inclusive. There is also a three-storey apartment building fronting George Street. The pedestrian mall connecting the development site with the Parade is to be upgraded and a new canopy installed.

Architectural approach in the context – Main Building

The main building of the proposed development is centrally located on the site and some distance from heritage places in the locality.

The design of the main building responds positively to the context, breaking down apparent bulk and scale, adopting complementary proportions and materials and finishes that are compatible with existing development including historic buildings nearby.

The built form of the main building exhibits strong rectilinear forms and massing with a high degree of modulation and articulation that helps break down overall bulk and scale.

The density of the proposed development decreases with height and a sense of space is maintained between the built forms of the townhouses and apartments and substantial landscaping on upper levels softens the appearance of the proposed development.

As a consequence, despite being up to eight storeys high, the proposed development is neither imposing nor dominant.

The three-storey podium element is well setback within the site and sufficiently consistent in scale with development nearby to relate positively to the context. Townhouses above are setback from the perimeter of the podium, reducing apparent bulk and scale and emphasising the podium element.

The design composition achieves a layered effect using traditional horizontal banding to delineate floor levels while applying fins and slatted shutters that provide vertical emphasis, fine grain detail and pleasing rhythm to the main building façade.

The selection of materials, textures and finishes complements the architectural composition and responds positively to the context. Textured concrete with a grit-blasted exposed aggregate finish at low level provides solidity in the base of the building, a layer of vertical aluminium fins in bronze helps to define the podium and a combination of terracotta cladding in sand, operable slatted shutters in bronze and grey, simple steel balustrading and glazing achieve a finer grain of detailing and visual “lightness”.

The earthy colours combined with variation in textures and finishes relates positively with the primarily stone, soft brick and rendered finishes of historic buildings nearby while exhibiting an appropriate degree of differentiation.

Impact on State Heritage place

The Norwood Town Hall is located at 175 The Parade, Norwood, diagonally opposite the subject site. The Town Hall was opened in 1883. In 1884, the tower was added. The building is an impressive example of civic architecture, a place that has played an important role in the local community over a considerable period of time and a prominent and well-known landmark on The Parade.

This prominence and landmark status is recognised in relevant development plan policy; Design and Appearance Objective 21 and District Centre Zone Desired Character.

The subject site is some distance from the Norwood Town Hall and on the opposite side of The Parade. The proposed development does not therefore adversely impact on the principal heritage value of the Town Hall which lies in its historic form and fabric and street corner location on The Parade.

Despite exceeding the anticipated building height denoted in Fig DCe/4 by one storey, the proposed development is sufficiently distant from the Town Hall and behind a row of one and two-storey buildings fronting The Parade such that the landmark status of the Town Hall is maintained.

Impact on local heritage place at 55 George Street

The Salvation Army Citadel building at 55 George Street, Norwood was opened in 1897. The hall on the northern side of the Citadel was opened in 1925. The Citadel building is significant not only for its association with the Salvation Army, their early establishment and their contribution within the community but also for its striking and unusual architecture. It is a two-storey building with elaborate detailing, castellated towers and parapets string coursing and pointed arches to windows and doors. The Victorian Gothic design was presumably intended to relate to the use of the building and its association with the Salvation Army. It is a relatively prominent landmark in the George Street streetscape.

The proposed development site is adjacent to the south of and behind, (to the west of), the Salvation Army Citadel building. There is however a 1970/80s addition on the southern side of the Citadel which separates the historic part of the building from the site of the proposed development. Furthermore, the eastern driveway into the subject site is located between the Salvation Army complex and the three-storey apartment building that is part of the proposed development. There is therefore a good degree of separation between the historic building and the apartments.

The apartment building is simple in form and appearance with rectilinear plans and elevational treatments. Strong articulation in the building façade visually separates building elements and breaks down apparent bulk and scale. Horizontal banding and considered integration of façade balustrading, shading and privacy elements add a fine grain of detail further breaking down apparent bulk and scale and adding visual interest. Good modulation is achieved through the incorporation of deep balconies, shading elements and interplay of light and shade on the building facades. Tiered planting softens the street façade of the apartments.

Although three storeys in height, the townhouses are compatible in scale with the Citadel. Strong emphasis of the two-storey elements and recessive upper storeys strengthen the degree of compatibility. Furthermore, the townhouses are setback from the George Street boundary whereas the Citadel building is more prominently located, on the George Street boundary.

Pergola elements at the northern and southern end of the row of apartments are setback from the building front facades. Simple in form and appearance and covered in vines, they provide a soft transition between the apartment building existing built form.

The design composition achieves reasonable compatibility with the Salvation Army Citadel, successfully breaking down bulk and scale, achieving a comparable degree of detail and a simplicity in appearance that defers to the visual complexity of the Citadel's appearance. As a consequence, the streetscape prominence of the Citadel is also maintained.

A material and finishes palette comprising exposed aggregate concrete, terracotta infill panels and steel balustrading relates to the main building beyond and achieves reasonable consistency with streetscape character while exhibiting an appropriate degree of differentiation and integrity.

The upper storey townhouses and apartments of the main building of the proposed development are sufficiently distant from the Citadel such that their impact on the context and setting of the place is acceptable. Viewed as a background element, their visual impact is relatively minor in the immediate locality of the Citadel.

For the abovementioned reasons the proposed development is reasonably consistent with relevant development plan provisions that relate to heritage impact concerning the local heritage listed Salvation Army Citadel and compatible with the heritage value of the Citadel.

Impact on local heritage places on The Parade

The proposed development interfaces with the local heritage places at 166 The Parade and 168 The Parade adjacent the pedestrian walkway. In other respects, the proposed development is a backdrop to historic buildings along The Parade.

The local heritage places between 160 and 188 The Parade are historic shops dating from the late Victorian period, c1880 to 1900. The heritage value of the buildings lies in their surviving historic form and fabric. It is evident however that the integrity of the shopfronts varies. Only one or two shops retain historic fabric in the shopfronts, and most, if not all, of the verandahs have been altered. Some heritage significance remains in the building silhouettes, the building forms, detailing and parapets.

The pedestrian mall that connects the supermarket and retail tenancies with the shopping strip of The Parade is to be upgraded. Work includes removal of the existing canopy and construction of a new canopy. The proposed canopy has been designed not to adversely impact on the local heritage places at 166 and 168 The Parade.

Supported on steel posts, the canopy has been designed as a free-standing structure to avoid physical impact on adjacent historic buildings. It is set in from the sides of the adjacent historic buildings, projects upwards towards The Parade and is largely transparent, enabling interpretation of the three-dimensional qualities of the adjacent historic buildings.

The appearance of the canopy frame is fine and delicate and the structure appears to float between the historic facades. The layering of glazing and shading elements provides the structure with the appearance of lightness, subtlety and transparency that has an integrity of its own and does not visually compete with the historic buildings. As a consequence, it is not too prominent and strikes a good visual balance in the row of historic shopfronts.

When viewed in close proximity to the shopfronts, most of the main building of the proposed development will not be visible. It does not therefore adversely impact on the immediate context and setting of the heritage places. From more distant vantage points the proposed development forms an acceptable backdrop to the local heritage listed shops on The Parade.

Impact on local heritage place at 80 Edward Street

The local heritage place at 80 Edward Street, Norwood is an historic bluestone villa dating from the late 1880s.

The proposed development does not contemplate any change to its context and setting, intending to improve the open carpark area. An existing mature gum tree nearby is to be retained and supplemented by new landscaping, thereby maintaining the existing context.

Impact on local heritage places on the western side of Edward Street and further south in Edward Street
The local heritage places on the western side of Edward Street are separated from the subject site by Edward Street and screened by established street trees supplemented by proposed landscaping and sufficiently distant from the subject site such that their heritage value will not be adversely impacted.

The heritage value of local heritage places further south in Edward Street is not materially impacted by the proposed development.

Impact on the historic drinking fountain

There is an historic cast iron drinking fountain in the pedestrian walkway between 166 and 168 The Parade.

According to the inscription on the fountain, it was “presented to the citizens of Adelaide by E.T. Smith M.P.” and is dated 1877. Edwin T. Smith was a former businessman, a mayor of Norwood, later a Mayor of Adelaide and a Member of State Parliament.

The fountain is not heritage listed.

The proposed development includes reinstatement of the drinking fountain in, or very close to, its existing location.

Summary

In my opinion, for the abovementioned reasons, the proposed development is reasonably consistent with relevant development plan policy relating to heritage matters and will not adversely impact on the heritage value of adjacent or nearby heritage places.

The proposed development is therefore supportable in relation to heritage impact.

A handwritten signature in black ink, appearing to read 'Andrew Stevens', with a long horizontal flourish extending to the right.

Stevens Architects Pty Ltd
Andrew Stevens RAIA (Director)

11 October 2019



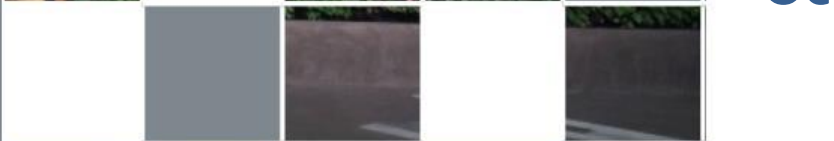
COLES NORWOOD MIXED-USE DEVELOPMENT

Project No: LCE16532

Sustainability Management Plan



October 2019



1 INTRODUCTION

1.1 OBJECTIVES

This report provides a list of the Ecologically Sustainable Design (ESD) initiatives that are proposed for the development, and details each of the primary ESD features.

The intent of each initiative is to add value to the project by improving the environmental performance of the development. Collectively, these initiatives will: -

- Reduce energy and water consumption;
- Reduce the ecological footprint of the building and its occupants;
- Improve thermal comfort and air quality within the building; and
- Improve occupant well-being.

1.2 PROJECT OVERVIEW

The proposed mixed-use development – at 166 The Parade, Norwood is a Class 6, Class 5 and Class 2 building under the National Construction Code which comprises:

Ground Floor	4x Speciality Tenancies, Coles Supermarket, Staff Carparking, Bicycle Storage and 3x Apartments
Level 1	Office Tenancy, Medical Tenancy, Bicycle Storage, Public Carparking and 3x Apartments
Level 2	Public Carparking, Secured Residential Carparking, Secured Bicycle Storage and 3x Apartments
Level 3 (Podium)	16x 2 Bedroom Townhouses, 8x 3 Bedroom Townhouses, 8x 2 Bedrooms Apartments and 2x 1 Bedroom Apartments
Level 4	10x 2 Bedrooms Apartments
Level 5	10x 2 Bedrooms Apartments
Level 6	10x 2 Bedrooms Apartments
Level 7	4x 3 Bedroom Penthouse Apartments









The following figure shows the site's location.

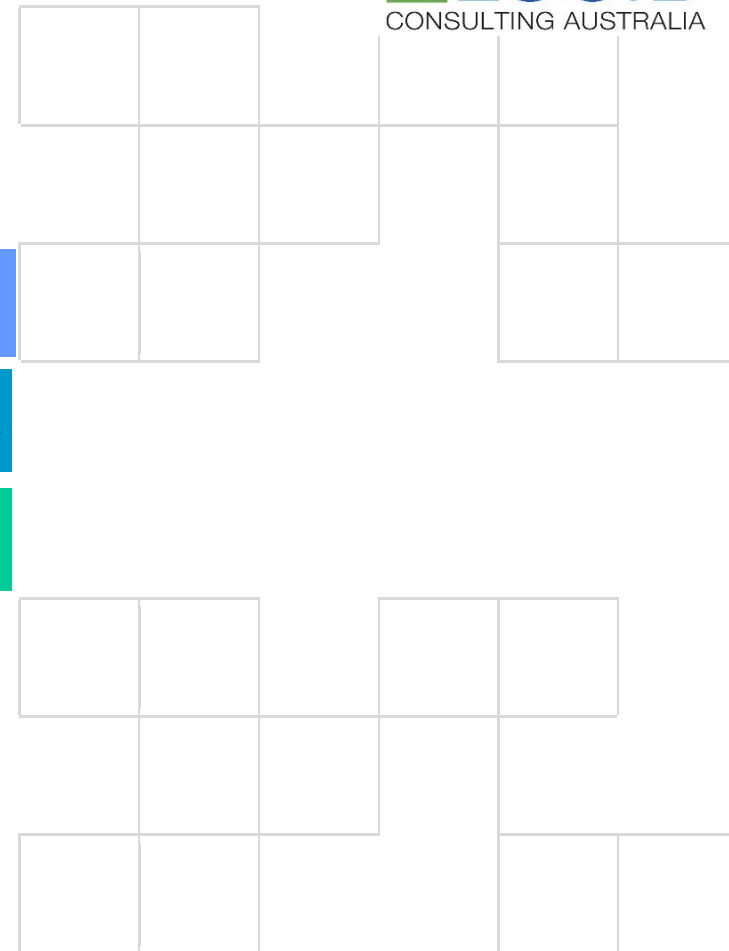


Figure 1: Satellite image showing location of proposed building (Source: Google Maps)

ECOLOGICALLY SUSTAINABLE DESIGN (ESD) STRATEGY

22.07.19

 Building Design	Highly Insulated Envelope	Thermal Mass	High Performance Glazing	High Performance Glazing	Fixed / Adaptable Shading	Energy Efficient Massing
 Systems + Energy	Sub-Metering	Monitor Energy + Water	Solar PV	Highly Efficient HVAC	LED Lighting	Motion + Daylight Sensors for Lighting
 IEQ	High Daylight Levels	Natural Ventilation	Non-Toxic Materials	Acoustic Comfort	Zero VOC Paint	Glare Control
 Water + Ecology	WELS Fixtures	Fire Test Water Capture	Increased Green Space	Green Wall / Roof	Drought Tolerant Planting	
 Transport	Bike Storage	EOT Facilities	Electric Vehicle Charging Stations			
 Waste	Dedicated Waste Storage	Waste Stream Separation	Recycling	Organics Composting		
 Wellbeing	External Views	Communal Breakout Spaces	Biophilic Elements	Ergonomic + Active Furnishings		
 Materials	Reflective Roof	Locally Sourced				



The following initiatives have been adopted and incorporated into the design of the building to satisfy the above objectives:

- High performance building envelope; wall, floor and roof insulation R-values to meet best practice guidelines
- High performance glazing selected with consideration of building-specific features and climatic conditions
- Thermal mass provided through heavyweight construction material
- Highly efficient mechanical system and domestic hot water plant
- LED lighting to be used throughout achieving best practice general illuminance
- Natural Ventilation and daylight provided to all dwellings
- Water efficient fixtures and fittings (refer to Section 2.7 for proposed WELS ratings)
- Increased communal greenspace and landscaping
- Access to high quality views from tenancies and residential dwellings, strengthening connection to nature
- Light coloured roofing to reduce urban heat island impact

The following initiatives have been recommended to be incorporated into the design and considered during the detailed design phase to complement the above inclusions;

- Submetering and monitoring strategy for the building to track operational energy and water consumption
- Motion and daylight sensors for energy effect lighting control
- Window blinds to office tenancies / residential to control glare onto the work and living spaces
- Low VOC and formaldehyde interior finishes, including paints, to reduce effects of off gassing on the indoor air quality
- Increase absorptive interior finishes and quiet equipment to manage reverberation and noise levels
- Rainwater capture and reuse for WC flushing and landscape irrigation
- Provision of separated recycling streams and composting to reduce operational waste
- The feasibility of providing onsite renewable energy through Solar PV installations for the residential dwellings will be assessed
- Provision of dedicated electric vehicle parking spaces with charging stations
- Secure bike storage with end of trip facilities

2 SUSTAINABILITY INITIATIVES



Building Design

2.1 EFFICIENT BUILDING THERMAL ENVELOPE

High performance insulation

An efficient building envelope is a highly robust feature as its benefits will remain constant throughout the life of the building and are also largely independent of the behaviour of the occupants. For this development, the performance of wall, floor and ceiling/roof insulation is to meet best practice guidelines. Building fabric in compliance with NCC 2016 Section J will be achieved and detailed further during design development.

High performance glazing

Specification of glazing units will consider the thermal requirements of each space, the orientation of the glazing itself, and the Adelaide climate. As a result, the building will benefit from free heating provided by the sun during winter while minimising solar heat gains during summer. Refer to the attached LCE16532-007b Preliminary NatHERS report for residential glazing requirements. Commercial glazing requirements will be determined during design development.

Energy efficient massing

The massing has been optimised such that all floorplate boundaries of the apartment towers (Level 3 to Level 6) are identical, which minimises the area of exposed floors and ceilings within the apartments and throughout the building. Insulation will be applied to all dwellings and commercial tenancies where ceilings/floors are exposed to non-conditioned or external spaces above/below.

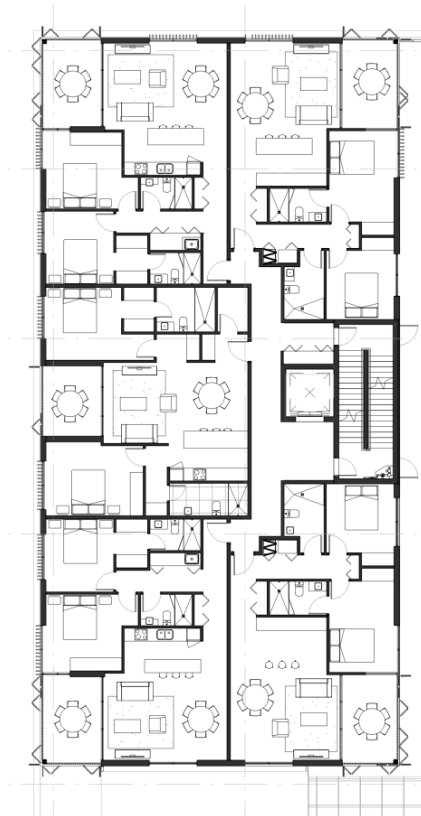


Figure 2: Apartment Tower Floor Plans (Level 3 to Level 6)

2.2 PROVISION OF SHADING

Significant building overhangs of the first floor provide shading to the ground floor façade areas along with feature shading consisting of vertical and horizontal shading elements. This shading strategy, coupled with high performance glazing, will reduce solar gains and cooling loads in summer and increase occupant comfort.

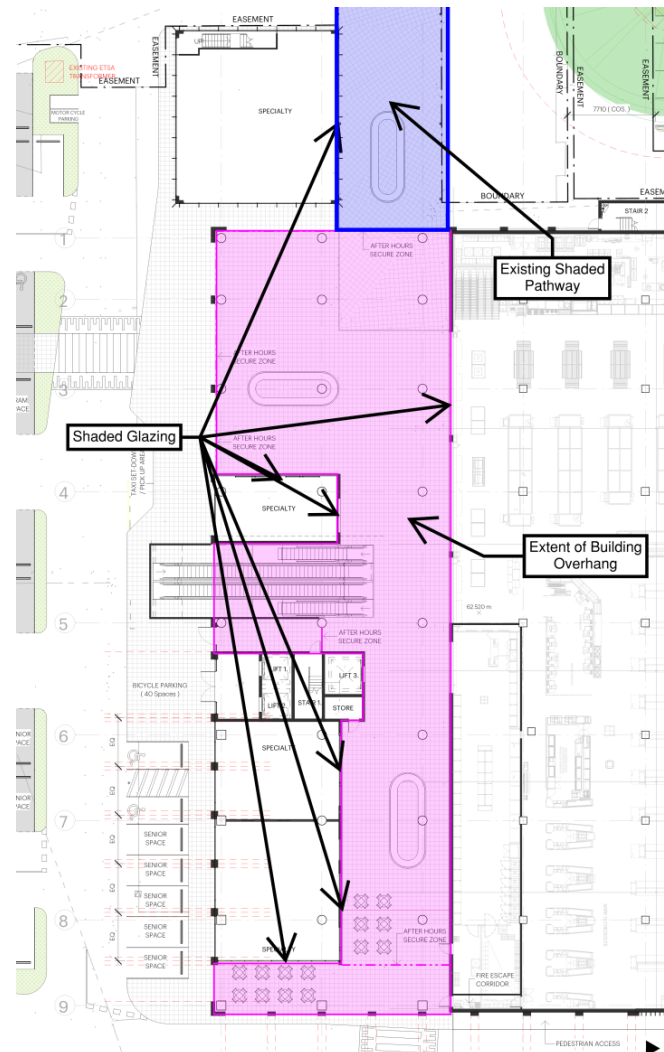


Figure 3: Shading due to Building Overhang – Ground Floor (Image courtesy of Studio Nine Architects)

2.3 THERMAL MASS

The facade for the ground and first floor commercial spaces has been designed to consist of a heavyweight construction material to complement the thermal mass of the floor slabs. As a result, the building has a high level of thermal mass, which assists in passively maintaining comfortable temperatures within the building for longer periods. This is achieved by:

1. In summer, delaying the peak temperature that occurs throughout the day (hence the space is more comfortable for a longer period during the morning), and reducing the overall peak temperature
2. In winter, absorbing heat throughout the day which reduces the requirement for heating



2.4 SUB METERING AND MONITORING

The feasibility of a metering and monitoring strategy for the development will be investigated during detailed design phase. Providing additional sub-metering for various spaces around the building allows the facilities management team to track operational energy and water consumption in order to identify sources of high consumption which can direct the implementation for further energy and water reduction strategies and initiatives. Real time feedback and demonstration will also be considered, for example providing a 'Digital Building Dashboard' in the entrance, where customers and employees can see the current energy and water demand, associated carbon emissions, along with contextual metrics (i.e. carbon equivalent to 'cars on the road')

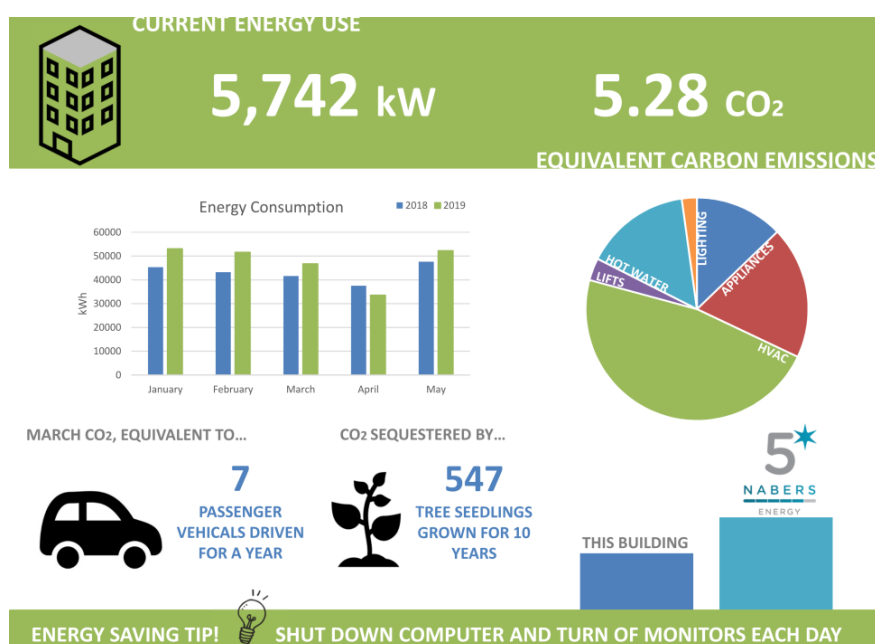


Figure 4: Example template for Energy and Carbon Tracking Dashboard

2.5 HIGHLY EFFICIENT BUILDING SERVICES

High efficiency building services including domestic hot water plant and mechanical design will be resolved during detailed design phase. The lighting design will include LED lighting with the feasibility of daylight sensors and motions sensor to be investigated to work with available daylighting to reduce energy consumption

2.6 SOLAR PV ELECTRICITY

It is proposed to harness renewable solar energy via installation of a solar PV system, with each apartment and townhouse given the optional extra of including a Solar PV array. The array converts solar radiation into electricity, which can then be consumed directly within the building, offsetting electricity that would otherwise be imported from the grid.

Electricity generated by the PV system that is not consumed immediately within the building would be exported to the grid. However, given the relatively high electrical demand of this development, it is anticipated that the quantity of exported electricity will be minimal.



2.7 NATURAL VENTILATION, DAYLIGHT AND GLARE

Natural ventilation will be supplied to residential dwellings through the provision of operable windows for access to outside air. It is proposed that compliance with AS 1668.4 is achieved, where practical, to improve indoor air quality. Windows in residential dwellings and commercial tenancies will also provide high levels of daylight to improve visual comfort and reduce energy usage for lighting. The building is set back from existing surrounding structures, facilitating daylight access through windows. Consideration will be given to glare on desks and workstations in tenancies and where feasible, blinds are recommended to be provided to assist with glare control and prevention.

2.8 NON-TOXIC MATERIALS AND PAINTS

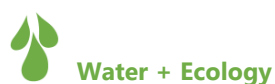
Volatile Organic Compounds (VOCs) are off-gassed from building materials and furniture, which pollute indoor air, resulting in reduced air quality and impacting occupant health. Where feasible preference will be given to selecting materials with low or no total VOC levels, refer to figure 7 for recommended total VOC levels. This is particularly relevant to carpets, adhesives, sealants and paints. In the case of paints, it is recommended that products with zero VOC content be selected where possible to improve air quality and reduce odour in newly painted spaces. In addition, consideration should be given to selecting engineered wood products with low formaldehyde levels.

Product Category	Max TVOC content recommended of ready to use product
General Purpose Adhesives and Sealants	50 g/L
Interior wall and ceiling paint, all sheen levels	Zero preferred (max 16g/L)
Trim, varnishes and wood stains	75 g/L
Primers, sealers and prep coats	65 g/L
One and two pack performance coating for floors	140 g/L
Acoustic, architectural and fire-retardant sealants and adhesives, and waterproofing membranes	250 g/L
Structural glazing adhesives, wood flooring and laminate adhesives and sealants	100 g/L
Carpet	0.5 mg/m² per hour (consider carpet products certified through Australian Institute of Carpets Environments Certification Scheme)

Figure 5: Maximum recommended TVOC content as per Green Star guidelines

2.9 ACOUSTIC COMFORT

Limiting acoustic distractions will improve occupant focus and productivity for the tenancies on Level 1 and sufficient acoustic separation for the residential dwellings will improve acoustic comfort for the residential occupants. Consideration will be given to selecting equipment and internal surfaces to reduce internal noise levels and reverberation. Equipment with low noise levels are preferred and the balance of hard surfaces with acoustic absorption materials should be optimised. It is recommended that reverberation times in the lower half of the ranges specified in Table 1 of AS/NZS 2107:2016 be considered.



2.10 WATER EFFICIENCY

Selection of fittings and fixtures is paramount for achieving a water efficient building. All fixtures and fittings shall be selected as low-flow where possible. The following WELS ratings are proposed:-

Taps with a WELS rating of not less than 5 Stars (6.0 L/min)

Shower heads with a WELS rating of not less than 3 Stars (9.0 L/min)

Water closets with a WELS rating of not less than 4 Stars (3.5 L/flush, dual flush)

The following table demonstrates the potential water savings expected to be achieved per person (approx. 45%) resulting from the use of these low-flow fittings.

Equipment	Average Building		Murray Bridge High School		
	Flow Rate	Daily Consumption	WELS	Flow Rate	Daily Consumption
Taps	9.0 L/min	9 L	5 Star	6.0 L/min	6 L
WC's	8.0 L/flush	16 L	4 Star	3.5 L/flush	7 L
Showers	15.0 L/min	15 L	3 Star	9.0 L/min	9 L
Total	-	40 L	-	-	22 L

Figure 6: Potential water savings with high WELS rating fixtures and fittings

2.11 GARDENS AND LANDSCAPING

Dedicated landscaped outdoor areas are provided central to the residential dwellings on the level 3 podium, increasing opportunities for biodiversity and wellness of building occupants through connection to nature.



Figure 7: Dedicated garden areas (Image courtesy of Studio Nine Architects)



2.12 BIKE STORAGE AND EOT FACILITIES

A secure bicycle storage area is to be provided to accommodate building occupants and employees and encourage the use of low/zero carbon forms of transportation and increase engagement in physical activity. Bicycle storage spaces are to be provided on the first floor for employee usage along with a further 36 secured spaces in the second-floor car park for residents. Additional public bicycle storage is available for customers, with 40 spaces located at the main entrance to the development. To further encourage bicycle use end of trip facilities (i.e. dedicated shower and change rooms) are recommended to be provided for employees.

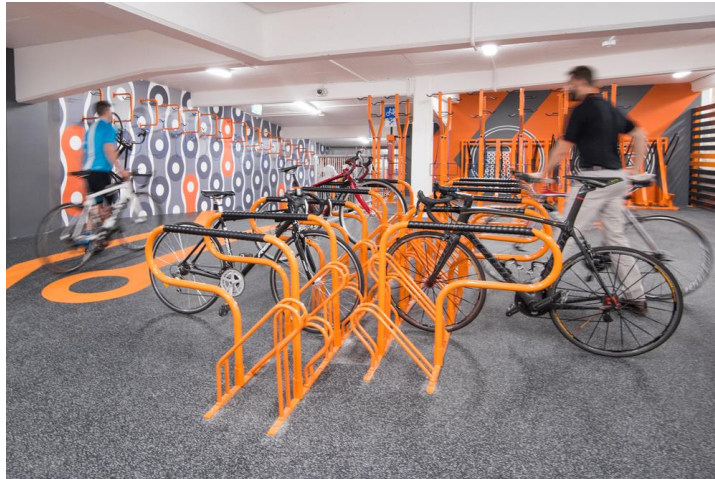


Figure 8: Bicycle Storage Facilities

2.13 ELECTRIC VEHICLE CHARGING STATIONS

It is proposed that the development include dedicated electric vehicle parking spaces with charging stations, located in the publicly accessible ground floor car park. By doing so, the development aims to encourage a transition towards sustainable transport modes and reduce emissions associated with travel to and from the development.



Figure 9: Electric Vehicle Charging Station



2.14 OPERATIONAL WASTE MANAGEMENT

Provision for multiple recycling streams and composting is essential to ensure a reduction of waste taken offsite. Conveniently placed bins separating paper, soft plastics, can and bottles and organics, along with a dedicated waste storage area for collection will facilitate better understanding of waste types and quantities generated, encouraging better practices and behaviour for waste reduction.



Figure 10: 'Waste Watcher' separated waste and recycling streams (image source: SUL Environmental Technology <http://www.sulo.com.au/products/office-recycling/waste-watcher/>)



2.15 COMMUNAL SPACES

A communal courtyard and garden are present on the third-floor podium level, which is accessible to all residential occupants. This space enables connection between building occupants, helping to foster a strong sense of community within the development.

2.16 BIOPHILIA AND BEAUTY

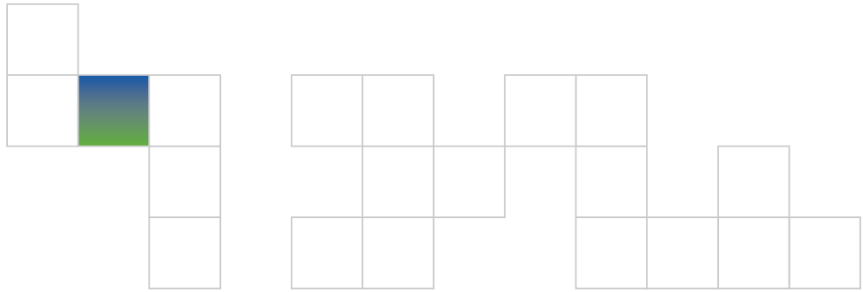
All dwellings have access to external views to positively impact mood and moral by strengthening the connection to nature within the interior spaces. Connection to nature is available for the podium level townhouses and apartments as they neighbour the central courtyard which is proposed to consist of trees and other garden elements. Similarly, the west facing tenancies look out the car park which has significant existing tree cover which is to be retained.



2.17 REFLECTIVE ROOFING

To reduce urban heat island effect and warming temperatures in the development, white or light-coloured roofing will be provided with a three-year Solar Reflective Index (SRI) of minimum 64.

ATTACHMENT A – LCE16532-007B PRELIMINARY NATHERS REPORT



9 October 2019

166 The Parade Pty Ltd
42 Nelson Street
STEPNEY SA 5069

REF: LCE16532-007b

ATTENTION: MR P ROCCA

Dear Pep,

**COLES NORWOOD MIXED DEVELOPMENT
PRELIMINARY NATHERS ASSESSMENT - RevB**

We provide the following preliminary Nationwide House Energy Rating Scheme (NatHERS) assessment for the proposed residential development at 166 The Parade, Norwood 5067.

The assessment is based on the architectural drawings – Preliminary Issue DDPA, dated 8 October 2019, provided by Studio Nine Architects. Energy ratings for the apartments have been calculated using FirstRate5 computer software - version V5.2.11 (3.13) - formally approved as a House Energy Rating Software under the *Nationwide House Energy Rating Scheme (NatHERS) - Software Accreditation Protocol, June 2012*.

The key input data used in the model are given in the following table:

Building Element	Construction Details
General	
Exhaust Fans/ Rangehood	<p>Sealed to outside air with self-closing damper in the following room types:-</p> <ul style="list-style-type: none"> ▪ Kitchen ▪ Bathroom/Ensuite ▪ Laundry cupboard/room <p>Exhaust ductwork to discharge via the facades on intermediate levels. No penetrations through insulation due to ductwork unless roof directly above.</p> <p>Ceiling penetrations on Townhouse upper floor and Level 04 (Apartments) with loss of ceiling insulation due to exhaust ductwork:- 300 x 300 penetration maximum</p>
Downlights	Insulation to ceiling/roof slabs to be installed above the downlights. Downlights to be IC-Rated (Insulation Contact) where required. No loss of insulation due to downlights.
Common Areas	Assumed all class 2 common area (foyers, stairwells) are non-conditioned spaces
External Shading	As per architectural drawings

Door Construction	
Apartment Entrance Doors	Weather stripped (as per part J3.4)
Glazing	
Windows and Glazed Doors	Weather-Stripped (as per part J3.4)
Typical	<p><i>Aluminium frame – Double-glazed – Clear</i></p> <p><i>Sliding doors, fixed & sliding windows (Group B)</i></p> <p><i>Total window system properties:</i></p> <ul style="list-style-type: none"> ▪ $U = 4.3 \text{ W/(m}^2\text{.K)}$ ▪ $SHGC = 0.53$
Penthouse	<p><i>uPVC frame – Double-glazed – Low-E</i></p> <p><i>Sliding doors, fixed & sliding windows (Group B)</i></p> <p><i>Total window system properties:</i></p> <ul style="list-style-type: none"> ▪ $U = 2.3 \text{ W/(m}^2\text{.K)}$ ▪ $SHGC = 0.32$
Floor	
Exposed below (ie. over carpark, balconies, unconditioned areas)	<p>200mm Suspended concrete slab with R2.0 rigid board soffit insulation fixed hard to underside of ceiling slab</p> <p>R2.0 Insulation to be applied to the sides and undersides of all the beams including beams in carpark.</p>
Intermediate Levels (ie. apartments above and below)	200mm Suspended concrete slab, no insulation requirement
Intermediate Levels (Townhouses)	Timber framed floor construction, no insulation requirement
Floor Coverings	<p>Assumed Floor Coverings</p> <ul style="list-style-type: none"> ▪ Floating Timber to kitchens, living rooms and corridors ▪ Tiles to bathrooms, ensuites and Laundries ▪ Carpet to bedrooms
Roof	
Level 04 (top Floor) and Townhouses	Framed metal deck roofing with R1.3 anticon roof blanket installed under sheeting. R4.0 bulk insulation batts laid on plasterboard ceiling lining.

Intermediate Apartment Levels, Exposed Above	200mm Suspended concrete slab with R2.0 rigid board soffit insulation fixed hard to underside of ceiling slab.
External Wall	
External walls (including apartment walls shared with common corridors, stairwells, ventilation risers, unconditioned rooms etc)	<p>▪ Note: Insulation is not to be compressed to fit within a cavity/space.</p> <p>Concrete External Wall 10mm Plasterboard Lining 90mm R2.5 Insulation Batts fixed within stud frame. 125mm Concrete Wall</p> <p>CFC Wall 10mm Plasterboard Lining R2.5 Insulation Batts fixed within 92mm stud frame 30mm Top Hat 25mm CFC Sheet</p> <p>Hebel External Wall 10mm Plasterboard R2.5 Insulation Batts fixed within 92mm stud frame Cavity 50mm Hebel Panel</p>
Party Walls	<p>▪ Note: Insulation is not to be compressed to fit within a cavity/space.</p> <p>Double Stud Partition Wall 10mm Plasterboard Lining 50mm R1.2 Acoustic Insulation fixed within Stud Frame Cavity 25mm Shaft Liner Cavity 50mm R1.2 Acoustic Insulation fixed within Stud Frame 10mm Plasterboard Lining</p> <p>Corridor Wall 10mm Plasterboard Lining 75mm R2.0 Insulation Batts fixed within stud frame 10mm Plasterboard Lining</p> <p>Stair / Lift Wall 10mm Plasterboard Lining 90mm R2.0 Insulation Batts fixed within stud frame 150mm Concrete Wall</p> <p>Hebel Party Wall 10mm Plasterboard Lining 75mm R2.0 Acoustic Insulation fixed within Stud Frame Cavity 50mm Hebel Panel Cavity 75mm R2.0 Acoustic Insulation fixed within Stud Frame 10mm Plasterboard Lining</p>
Internal partitions within apartments	Insulation in accordance with acoustic requirements. No thermal requirements.

Based on the architectural documentation and input data indicated above, the preliminary ratings have been calculated and are presented in the following table. As the development is in the early stages of design, townhouse and apartment dwellings have not been named/numbered, please refer to Appendix A for a mark-up of assessed dwellings and corresponding names.

Level	Apt No.	Net Conditioned Floor Area	Heating Load (MJ/m2)	Cooling Load (MJ/m2)	Total Energy (MJ/m2)	Star Rating
Apartments						
Ground	APT A	69.9	46.7	45.5	92.2	6.1
Third	APT B	76.9	27.4	73	100.4	5.8
Third	APT C	78.4	11.7	54.4	66.1	7.2
Penthouse	APT D	181	38.7	72.8	111.5	5.4
Penthouse	APT E	181	46.6	65.6	112.2	5.4
George Street	APT GS	135.3	28.3	86.5	114.8	5.3
Townhouses						
Podium	TH1 - Type B	97	46.2	26.4	72.6	6.9
Podium	TH2 - Type B	97	48.4	43.2	91.6	6.2
Podium	TH3 - Type C	95.7	51.5	34.3	85.8	6.4
Podium	TH4 - Type C	97	50.4	45.4	95.8	6

The National Construction Code requires that the apartments individually achieve a rating of not less than 5.0 stars and collectively achieve an average rating of not less than 6.0 stars.

Based on the architectural drawings and the input data listed above, the assessment demonstrates that:

- Each apartment achieves a rating of not less than 5.0 stars.
- The building is on track to achieve an average rating of at least 6.0 stars, which meets the minimum requirement of 6.0 stars.

This preliminary NatHERS assessment demonstrates that the proposed development is on track to achieve compliance with NCC 2016 Volume One J0.2 (a) Deemed-to-satisfy provisions.

Regards,

LUCID CONSULTING AUSTRALIA



Matt Cuppleditch
Sustainability Engineer

APPENDIX A – ASSESSED DWELLING MARK-UP





PRELIMINARY
DATED 08/10/2019

ISSUE:	DCPA	DATE ISSUED:	08/10/2019	D.A. PLAN:
SHEET:	5 OF 7	DRAWN:	PM/NG	D.A. BUILD:
SCALE AT A/D	1 : 200	CHECKED:	NH	TENDER:
FIRST ISSUED:	08/10/2019			CONST:

[illegible]



ISSUE: DCPA	DATE ISSUED: 08/10/2019	D-A PLAN:
SHEET: 6 OF 7	DRAWN: PM/NG	D-A BUILD:
SCALE AT A0: 1:200	CHECKED: NH	TENDER:
FIRST ISSUED: 08/10/2019		CONST:

Rev	Date	Amendment
A	12/08/19	ISSUED FOR PLP No.2

PRELIMINARY
DATED 08/10/2019



	PROJECT	DRAWING TITLE
	COLES NORWOOD MIXED DEVELOPMENT 165 THE PARADE, NORWOOD, SA 5067 CLIENT AUSTRALASIAN PROPERTY DEVELOPMENTS 125B THE PARADE, NORWOOD, SA 5067	APARTMENTS LEVEL 3 & PENTHOUSE LEVEL DRAWING NUMBER 0906-184-PA07
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Coles Norwood Redevelopment

Planning Stage Acoustic Assessment

A190051RP2 Revision A

Thursday, 10 October 2019



Document Information

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0	18 September 2019	First issue	Carl Jungfer	Darren Jurevicius
A	10 October 2019	Revised	Carl Jungfer	Nick Henrys

Glossary

A-weighting	A spectrum adaption that is applied to measured noise levels to represent human hearing. A-weighted levels are used as human hearing does not respond equally at all frequencies.
Characteristic	Associated with a noise source, means a tonal, impulsive, low frequency or modulating characteristic of the noise that is determined in accordance with the Guidelines for the use of the Environment Protection (Noise) Policy (Noise EPP) to be fundamental to the nature and impact of the noise.
Continuous noise level	A-weighted noise level of a continuous steady sound that, for the period over which the measurement is taken using fast time weighting, has the same mean square sound pressure as the noise level which varies over time when measured in relation to a noise source and noise-affected premises in accordance with the Noise EPP
Day	Between 7 am and 10 pm as defined in the Noise EPP
dB	Decibel—a unit of measurement used to express sound level. It is based on a logarithmic scale which means a sound that is 3 dB higher has twice as much energy. We typically perceive a 10 dB increase in sound as a doubling of that sound level.
dB(A)	Units of the A-weighted sound level.
Frequency (Hz)	The number of times a vibrating object oscillates (moves back and forth) in one second. Fast movements produce high frequency sound (high pitch/tone), but slow movements mean the frequency (pitch/tone) is low. 1 Hz is equal to 1 cycle per second.
Indicative noise level	Indicative noise level determined under clause 5 of the Noise EPP.
L ₉₀	Noise level exceeded for 90 % of the measurement time. The L ₉₀ level is commonly referred to as the background noise level.
L _{eq}	Equivalent Noise Level—Energy averaged noise level over the measurement time.
L _{max}	The maximum instantaneous noise level.
Night	Between 10.00 p.m. on one day and 7.00 a.m. on the following day as defined in the Noise EPP
Noise source	Premises or a place at which an activity is undertaken, or a machine or device is operated, resulting in the emission of noise
Quiet locality	A locality is a quiet locality if the Development Plan provisions that make land use rules for the locality principally promote land uses that all fall within either or both of the following land use categories: (a) Residential; (b) Rural Living;

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1 Introduction

This report outlines the acoustic requirements for The proposed Norwood Coles redevelopment. It details the environmental noise assessment for the proposed carparking at the site and indicative recommended treatments for the development.

At this stage of the project there is indicative mechanical unit selections which have been assessed at the nearest neighbouring noise sensitive receivers.

The main acoustic issues addressed in this report are:

- Traffic noise from vehicle movements throughout the site and use of the carpark
- Mechanical plant noise within the occupied spaces.

The closest noise affected receptors are located immediately adjacent the site at the south, across George Street to the east and on Edward Street to the west.

The potential environmental noise emissions have been assessed against the requirements of the South Australian environmental noise policy and the Norwood, Payneham and St Peters Council Development Plan.

2 Proposed development

2.1 Location

The Site for the proposed development is the site of the existing Coles at Norwood, between Edward Street and George Street. The nearest sensitive receivers are located to the south of the proposed carpark. Figure 1 indicates the nearest noise sensitive receivers considered in the assessment.

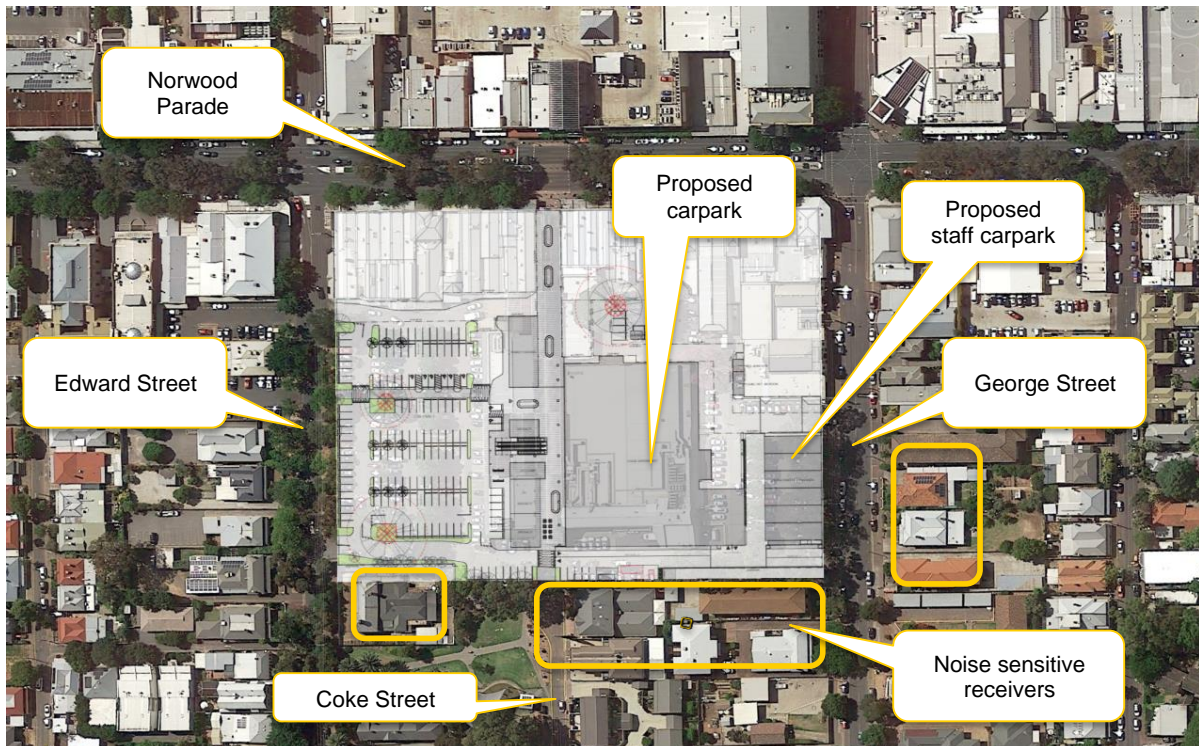


Figure 1 Location of the proposed carpark in relation to the nearest noise sensitive receivers

2.2 Operation

The main car park access will be via Edward Street, with access across the site is via the existing internal road at the southern boundary. This road will include ramps to traverse the change in elevation between Edward Street and George Street and to assist access to the first level of the carpark, which is above grade.

The proposed carpark layout considered in this assessment has been obtained from drawings 0906-184, dated 08/10/2019

3 Development Plan

The proposed development is located within the Norwood, Payneham and St Peters Council Area and as such must have regard to the Norwood, Payneham and St Peters Council Development Plan

Principles of Development Control

The proposed development is within the district Centre (Norwood) Policy Area with boundaries of the side against the Residential Character Policy Area. The council wide Objectives and Principles of Development Control relevant for noise emission impacts are outlined below:

Interface between Land Uses

Objectives:

- 1 Development located and designed to prevent adverse impact and conflict between land uses.
- 2 Protect community health and amenity from adverse impacts of development.
- 3 Protect desired land uses from the encroachment of incompatible development.

Principles of Development Control

80 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:

- (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants
- (b) noise
- (c) vibration
- (d) electrical interference
- (e) light spill
- (f) glare
- (g) hours of operation
- (h) traffic impacts.

84 Development that emits noise (other than music noise) should include noise attenuation measures that achieve the relevant Environment Protection (Noise) Policy criteria when assessed at the nearest existing noise sensitive premises.

Noise and Air Emissions Overlay

Objectives:

- 1 Protect community health and amenity from adverse impacts of noise and air emissions.

Principles of Development Control

80 Noise and air quality sensitive development located adjacent to high noise and/or air pollution sources should:

- (a) shield sensitive uses and areas through one or more of the following measures:
placing buildings containing less sensitive uses between the emission source and sensitive land uses and areas;
 - (ii) within individual buildings, place rooms more sensitive to air quality and noise impacts (e.g. bedrooms) further away from the emission source;
 - (iii) erecting noise attenuation barriers provided the requirements for safety, urban design and access can be met;



(b) use building design elements such as varying building heights, widths, articulation, setbacks and shapes to increase wind turbulence and the dispersion of air pollutants provided wind impacts on pedestrian amenity are acceptable; and

(c) locate ground level private open space, communal open space and outdoor play areas within educational establishments (including childcare centres) away from the emission source.

To demonstrate that the proposed development has been designed to minimise noise impacts on adjacent receptors and has considered the relevant provisions of the Development Plan outlined above, the potential environmental noise emissions are assessed in accordance with the *Environment Protection (Noise) Policy* 2007 (Noise EPP).

Application of Minister's Specification SA 78B *Construction Requirements for the Control of External Sound* will ensure that the objectives of the Noise and Air Emission Overlay are achieved.

4 Noise criteria

4.1 Environmental Protection (Noise) Policy

Part 4, Clause 18(1) of the *Environment Protection (Noise) Policy 2007* (Noise EPP) states that:

The general environmental duty under section 25 of the Act is satisfied in relation to noise from a noise source, insofar as the noise affects particular noise-affected premises, if the noise complies with the noise goals.

The noise goals in the Noise EPP are based on the zoning of the development and the closest noise affected premises in the relevant development plan. The land uses primarily promoted by the zones are used to determine the environmental noise criteria with the indicative noise factors shown in Table 1 and Table 2. Note that the indicative noise factors in Table 1 are used where the noise source and noise affected premises falls within the same land use category (being only General Industry and Special Industry). In all other cases the indicative noise factors in Table 2 are to be used.

Table 1 Excerpt from Noise EPP—Table 1(subclause(1)(a))

Land use category	Indicative noise factor dB(A)	
	Day (7 am to 10 pm)	Night (10 pm to 7 am)
General industry	65	65
Special industry	70	60

Table 2 Excerpt from Noise EPP—Table 2(subclause(1)(b))

Land use category	Indicative noise factor dB(A)	
	Day (7 am to 10 pm)	Night (10 pm to 7 am)
Rural living	47	40
Residential	52	45
Rural industry	57	50
Light industry	57	50
Commercial	62	55
General industry	65	55
Special industry	70	60

As noted in Section 3, the development and the most affected noise sensitive premises are located in the District Centre (Norwood) and Residential Character Policy Zones for which Commercial and Residential land uses are primarily promoted respectively.

In accordance with Part 5 of the Noise EPP, the relevant criteria for residential and commercial receivers from this development will be the relevant indicative noise factors less 5 dB(A).

The application of Part 5 results in the following environmental noise criteria at noise sensitive receivers in the adjacent Residential Character zone at the south, east and north:

- 52 dB(A) during the day, 7 am to 10 pm
- 45 dB(A) at night, 10 pm to 7 am.



The application of Part 5 results in the following environmental noise criteria at noise sensitive receivers in the District Centre (Norwood) zone to the north of the site.

- 57 dB(A) during the day, 7 am to 10 pm
- 50 dB(A) at night, 10 pm to 7 am.

In accordance with the Noise EPP, the above criteria apply at neighbouring sites, but not at noise sensitive premises within the site itself. However, these criteria may serve as guidance in relation to appropriate noise levels at residences within the site.

Penalties can also be applied to a noise source for a variety of characteristics, such as impulsive, low frequency, modulating or tonal characters. For a characteristic penalty to be applied to a noise source it must be fundamental to the impact of the noise and dominate the overall noise impact. Application of the characteristic penalty is discussed in the noise emission assessment.

We note that under Part 5, Clause 20(6) of the Noise EPP, exceedance of the recommended criterion does not necessarily mean action is required under the Noise EPP. Some of the following matters should be considered when considering action:

- the amount by which the criterion is exceeded (in dB(A))
- the frequency and duration for which the criterion is exceeded
- the ambient noise that has a noise level similar to the predicted noise level
- the times of occurrence of the noise source
- the number of persons likely to be adversely affected by the noise source and whether there is any special need for quiet.

5 Noise monitoring

5.1 Details

Noise monitoring at the south side of the existing Coles supermarket was undertaken from 23 August to 28 August 2019. Measurement in this position was to determine the current noise impact on residential receivers at the immediate south of the site.

5.2 Instrumentation

The noise measurements were taken with a calibrated Rion NL-32 sound level meter, which is a Type 2 instrument suitable for field use. The sound level meter was calibrated both before and after the measurements using a Type 1 Brüel & Kjær 4231 sound level calibrator, and the calibration was found to have not drifted. Both the sound level meter and calibrator carry current calibration certificates from a NATA accredited laboratory. Copies of the calibration certificates are available on request.

5.3 Procedure

Noise measurements were undertaken in accordance with the following:

- The microphone of the sound level meter was at a height of approximately 1.2 metres above the ground.
- The axis of maximum sensitivity of the microphone of the sound level meter was directed towards the noise source.
- A wind shield was used during all measurements, and the measurements were undertaken during rain free days.
- Care was taken to avoid any effect on the measurement of extraneous noise, acoustic vibration or electrical interference.

5.4 Results

The results of the continuous noise logging are shown in Figure 2 with the night time periods highlighted in grey. The adopted L_{eq} day and the L_{eq} and L_{max} night time noise levels used in the noise intrusion assessment are also shown in Figure 2.

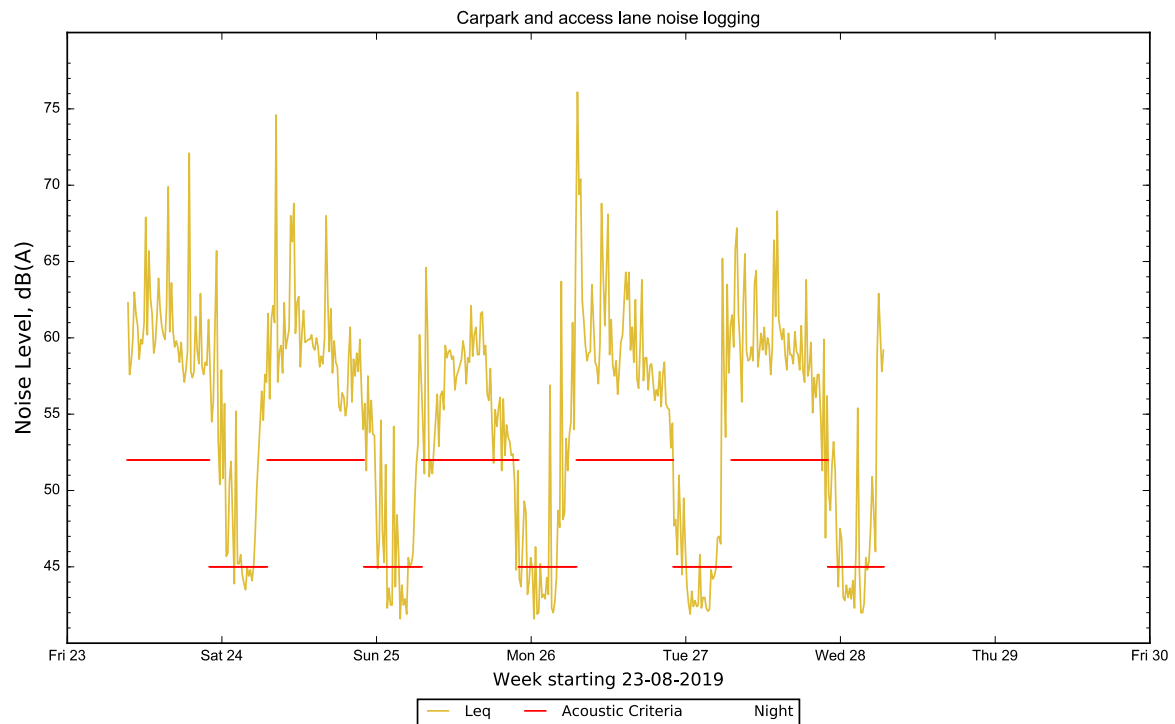


Figure 2 Continuous noise logging results (night time periods highlighted in grey)

Note that the day time ambient noise level, Leq, is generally well above the relevant Noise EPP criteria for residential receivers. Based on the measurements the average ambient noise levels during the day are 61 $L_{eq\ 15hr}$, dB(A). Due to the position of the noise logger this is considered to be primarily as a result of traffic noise.

6 Environmental noise assessment

Noise sources within the site are assessed with regard to both internal and external receivers. The noise at external receivers should comply with the requirements of the Noise EPP, detailed in Section 4.1.

6.1 Noise modelling

Noise emissions from site have been modelled in SoundPLAN Environmental Software v7.4 program, using the general prediction method. The model has taken into consideration:

- noise source(s)
- noise sensitive receiver locations
- attenuation of noise source due to distance
- barrier effects from buildings, topography and the like
- air absorption
- ground effects
- neutral meteorological conditions (zero wind and temperature gradients).

The proposed carpark layout considered in this assessment has been obtained from drawings 0906-184, dated 08/10/2019

Input data to the computer noise model are listed within mechanical services documents provided by Lucid consulting, dated 1 July 2019. These documents indicate the location of external mechanical plant and their respective noise output.

In addition to the Mechanical plant noise, carpark and vehicle noise has been assessed. Table 3 shows estimated traffic movement data which has been provided by Cirqa, 19 July 2019. The existing approximately 1.8m high corrugated iron fence to the south of the site has also been included in the noise model.

Table 3 Peak flow in and out of the carpark

Time	Situation	Total peak	Movements at southern lane	Movements within carpark
Day - AM	1 hour peak flow	350	260	170
Day - PM	1 hour peak flow	605	445	295
Night	9 hours	120	90	60

6.2 Characteristic noise penalties

Penalties to the source level should be applied in accordance with the Noise EPP to recognise annoyance associated with noise that is dominated by tonal, modulating, low frequency, or impulsive characteristics. A 5 dB(A) penalty is applied for one characteristic, an 8 dB(A) penalty is applied for two characteristics, and a 10 dB(A) penalty is applied for three or more characteristics.

Application of a characteristic penalty will depend on the received noise levels compared with the background noise levels to determine whether or not the character(s) are fundamental to the impact of the noise and dominate the overall noise impact.

In this case the modulating character of the noise emissions from the carpark may attract a penalty of 5 dB as a result of a modulating characteristic. This is included in the predicted noise levels shown in Table 4.

6.3 Predicted noise levels

6.3.1 Mechanical plant noise

It is expected that noise emissions from external mechanical plant can meet the relevant criteria in Section 4.1 with standard mitigation measures, for example location of significant plant items away from noise sensitive receivers where practicable, the use of low-noise plant, and/or acoustic screens.

6.3.2 Carpark and vehicle noise

A summary of the predicted noise levels at nearest receivers is presented in Table 4, which represents the peak day and night carpark and vehicle access use of the carpark and worst-case noise emission.

Table 4 Predicted noise levels—day

Prediction location	Time period	Predicted daytime peak noise level, L_{eq} 15min dB(A)		Noise criteria, dB(A)
		Ground floor	First floor	
18/20 Coke St	Daytime 7am–10pm	51	57	52
70 George St		46	46	
73 George St		51	57	
75A George St		47	50	
		Ground floor	First floor	
18/20 Coke St	Night 10pm–7am	42	47	45
70 George St		36	36	
73 George St		43	47	
75A George St		38	41	

Prediction of noise levels from parking activities within the Carpark have been determined using the method adopted by the Bayerisches Landesamt für umwelt (Bavarian State Office for the Environment) which has been validated for use in Australian conditions.

The results indicate that the noise levels during the day at the nearest noise sensitive receivers are up to 5 dB above the compliance levels under the Noise EPP. Note that the peak period is expected to occur during only one hour of the day with other periods generally a minimum of 3 dB lower than the peak.

Based on the investigation of existing noise levels at the site, existing ambient noise from traffic movements is generally higher than the Daytime indicative noise criteria. The predicted peak daytime noise level due to traffic is less than the measured existing average ambient noise level, and the noise is likely to be of a similar character to the existing traffic. On this basis the predicted noise due to traffic within the site is not considered to be unreasonable.

During the night time periods the noise levels are up to 2 dB above the criterion, but are the same or less than existing ambient noise levels between 10pm and midnight. The exceedance in this case is not sufficient to be easily discerned by the human ear and is considered negligible.

6.4 Site acoustic amenity assessment

It has been identified that mechanical plant and equipment as well as traffic may affect the residences included within the proposed development. These sources have been assessed to determine indicative construction requirements to provide amenity to the residential tenancies. The location of noise sources and the onsite receivers are identified within Figure 3. While the Noise EPP Criteria are not strictly applicable to the proposed onsite receivers, these criteria are used here as an guideline against which to assess onsite noise.

The relevant criteria are 57 dB(A) L_{eq} day, 50 dB(A) L_{eq} night within the District Centre (Norwood) zone.



Figure 3 location of onsite noise sources are receivers with respect to the site.

6.4.1 Mechanical plant noise

Mechanical plant servicing the Coles tenancy is located at the north east corner of the podium at level 1 of the building. Resonate understands that there are two condensers on platform the which have the potential to affect the residential tenancies on top of the top of the podium. Based on available information about the condensers, the predicted noise level at the east-facing balconies of the east tower are 59 dB(A) L_{eq} during day operation. This level is above the indicative criteria and suggests that mitigation treatments to the plant platform will be necessary. The recommended treatment to reduce noise affecting residences could include:

- During night operation we recommend that a low power or night mode be used to reduce noise output.
- Acoustic louvre roof over the plant deck to mitigate external noise emissions to the nearest residences
- Acoustic treatment to the facade of affected residences to ensure that appropriate internal noise levels within bedrooms and living rooms are achieved. Note that the treatment required in accordance with Minister's Specification SA 78B as described in Section 7 is expected to be sufficient.

The noise mitigation treatment will be progressed throughout design development to ensure noise from mechanical plant does not adversely impact on noise sensitive receivers within the site.

6.4.2 Carpark and vehicle noise

Noise from vehicle movements has the potential to adversely impact on noise sensitive receivers within the site, particularly given the proximity of car park ramps to podium townhouses.

Resonate has modelled noise emissions from the car park to the nearest receivers. A minimum 1.2m high noise barrier to townhouse outdoor living spaces is recommended to ensure noise levels within outdoor spaces are acceptable. Facade treatments described in Section 7 will ensure that internal noise levels are acceptable within internal habitable spaces.

Noise from Coles loading dock vehicles is also predicted to result in acceptable internal noise levels within all residences within the site, given facade treatment as required by SA 78B.

7 Minister's Specification SA 78B

The conditions within the Minister's Specification SA 78B are concerned with the distance from identified noise source and whether any part of the development is located within a 'Designated Area', as defined within the Development Plan. As the whole of the site is located within a Designated Area, the development of the site must comply with the resulting requirements within SA 78B. The minimum (Sound Exposure Category) SEC for the facade of a building within a 'Designated Area' is SEC 1.

We note that distance of the proposed development from the nearest designated road (The Parade) is not within the separation distance threshold where a higher level of SEC is applied. SEC 1 therefore applies uniformly across the site.

The appropriate sound insulation ratings for SEC 1 is based on the *Deemed to Satisfy Provisions* of SA 78B. This is outlined in Table 5.

Table 5 Minimum acoustic requirements for habitable rooms

SEC	Building element	Location	Acoustic rating
1	External walls	All habitable rooms	$R_w + C_{tr} \geq 45$
	Windows & external glass doors	Refer to Table 6	

The sound insulation ratings for windows and external glass doors are outlined in Table 6 based on the area of the window/glass door divided by floor area of the room.

Table 6 Minimum acoustic requirements for windows and external glass doors ($R_w + C_{tr}$)

Room	Area of window and external glass doors as a percentage of the floor area of the room	SEC 1 - $R_w + C_{tr}$
Bedroom and attached non-habitable rooms	Not more than 20%	25
	More than 20% but not more than 40%	28
	More than 40% but not more than 60%	31
	More than 60% but not more than 80%	34
	More than 80%	37
Habitable rooms (other than bedrooms and enclosed kitchens) and attached non-habitable rooms	Not more than 20%	22
	More than 20% but not more than 40%	25
	More than 40% but not more than 60%	28
	More than 60% but not more than 80%	31
	More than 80%	34

7.1 Construction requirements

7.1.1 External walls

The external cladding material has not been finalised at this stage. Based on the Deemed-to-Satisfy provisions of SA 78B, the following constructions are appropriate:

- The construction techniques that are suitable for use in external applications specified in **Table 2** of **Specification F5.2** of the NCC; or

R_w + C_{tr} 45 (SEC 1)

- One row of 90mm studs at 600mm centres with –
 - resilient steel channels fixed to the outside of the studs; and
 - 9.5mm hardboard or 9mm fibre cement sheeting or 11mm fibre cement weatherboards fixed to the outside of the channels; and
 - 75mm thick glass or mineral wool insulation with a density of 11kg/m³ or 75mm thick polyester insulation with a density of 14 kg/m³, positioned between the studs; and
 - two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs.
- One row of 90mm studs at 600mm centres with –
 - resilient steel channels fixed to the outside of the studs; and
 - one layer of 19mm board cladding fixed to the outside of the channels and 6mm fibre cement sheets fixed to the inside of the channels; and
 - 75mm thick glass or mineral wool insulation with a density of 11kg/m³ or 75mm thick polyester insulation with a density of 14 kg/m³, positioned between the studs; and
 - two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs.

The above constructions are intended as examples of suitable systems. Alternative walls systems may be used where it can be demonstrated that the system meets the required rating.

7.1.2 External windows and doors

Indicative external window and door constructions are shown below in Table 7. Finalised constructions will be determined based on the window and floor areas of each habitable room. Note that acoustically equivalent constructions (such as thermal double glazing) can be adopted; however, the constructions are provided as a guide as to the types of constructions required.

Table 7 Indicative window and door constructions

Window or door construction	R _w + C _{tr}
Window construction	
3mm thick monolithic or laminated glass with sliding or double hung type opening	22
3mm thick monolithic or laminated glass with awning type opening	25
6mm thick monolithic or laminated glass with sliding or double hung type opening	28
6mm thick monolithic or laminated glass with awning type opening	31
10mm thick monolithic or laminated glass with awning type opening	34
Door construction	
5mm or 6mm thick monolithic or laminated glass sliding door	28

5mm or 6mm thick monolithic or laminated glass side-hung door	31
10mm thick monolithic or laminated glass sliding door	31
10mm thick monolithic or laminated glass side-hung door	34
40mm thick solid core door, side hinged	30

All openable windows and doors should have the following or acoustically equivalent seals:

- sliding doors are to have:
 - Schlegel Q-Lon T-Slot seals on the lock and mullion
 - Schlegel Fin-Seal on the rails
- windows awning style with rubber compression seals around the perimeter such as Schlegel Q-Lon T-Slot seals, or sliding with seals as indicated for the sliding doors
- hinged doors are to have:
 - high quality rubber contact seals for the head and the jambs acoustically equivalent to Kilargo IS1212/1515 or Raven RP120/150
 - dropdown seal at the bottom acoustically equivalent to Kilgaro IS8090si or Raven RP38.

7.1.3 Ventilation

Natural ventilation

Natural ventilation must be provided in accordance with the NCC. To meet this requirement for SEC 1, fresh air ventilation can be provided with operable windows.

8 Conclusion

An environmental noise impact assessment has been undertaken for the proposed Coles Norwood redevelopment.

Review of indicative mechanical plant data indicates that compliance with the environmental noise criteria will be achievable with appropriate mitigation.

Noise from vehicle movements along the southern laneway are expected to exceed the relevant daytime Noise EPP criteria at the nearest neighbouring receivers to the south of the site. However, predicted noise levels are similar or less than existing ambient noise levels, which are also due to vehicle movements. Resonate consider that noise generation from proposed uses of the site are compliant with the intent of the Noise EPP.

Whilst not a specific requirement of the Development Plan or Noise EPP, we have assessed noise from vehicle movements and mechanical plant received at proposed noise sensitive uses within the site. With appropriate mitigation, noise levels are expected to be within acceptable level in both internal and external living and other habitable spaces.

Based on the implementation of the construction recommendations related to Ministers Specification SA 78B the development will be able to comply with the relevant legislative requirements for control of external sound.



Arboricultural Impact Assessment and Development Impact Report

Site: Coles Norwood, The Parade, Norwood

Date: Monday, 14 October 2019
ATS5395-TheParDIR

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Appendix E Tree Protection Zone Guidelines

Report Reference Number: ATS5395-TheParDIR

Report prepared for

Nigel Howden (Senior Architect)
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Executive Summary

Arborman Tree Solutions was engaged by Studio Nine Architects to undertake an Arboricultural Impact Assessment and provide a Development Impact Report for Coles Norwood, The Parade, Norwood.

The purpose of the assessment and report is to identify potential impacts the proposed development may have on the twelve Regulated and Significant Trees within or adjacent to the site.

Of the eleven Regulated Trees identified within the site, eight (Trees 3, 4, 6 – 10 and 12) have been recommended for removal to accommodate the proposal. Tree 5 is a council asset and located just outside the site on the southern boundary, this tree requires retention and protection.

Three Regulated Trees (Trees 1, 2 and 11) within the site have been identified as worthy of retention and protection in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009) and as per the *Development Act 1993*.

Trees 1, 2, 5 and 11 can be retained and protected throughout the redevelopment phase, these trees will not be negatively impacted by the proposal if the recommendations within this document and AS4970-2009 are followed.

Brief

The proposed development includes the demolition of the existing shopping centre complex and the construction of a new shopping centre complex and associated infrastructure. This assessment will determine the potential impacts the proposal may have on the trees within and adjacent the site and to recommend impact mitigation strategies in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009) for trees to be retained.

In accordance with section 2.2 of AS4970-2009 the following information has been provided:

- Assessment of the general health and structure of the twelve identified trees.
- Identification of the legislative status of the trees on site as defined in the *Development Act 1993*.
- Identify and define the Tree Protection Zone for each tree.
- Identify potential impacts the redevelopment may have on tree health and/or stability.
- Recommend impact mitigation strategies in accordance with AS4970-2009 for trees to be retained.
- Provide information in relation to the management of trees.

Documents and Information Provided

The following information was provided for the preparation of this assessment

- Design Drawings: Drawing Number; 0906-184-PA02. Dated: 18/04/2019

Site Location

Figure 1: Survey site location - Coles Norwood, The Parade, Norwood



Methodology

The potential impact of the proposed works on tree condition is considered in accordance with the guidelines in AS4970-2009 *Protection of trees on development sites* (AS4970-2009). When determining potential impacts of an encroachment into a Tree Protection Zone (TPZ), the following should be considered as outlined in section 3.3.4 of AS4970-2009;

- a) Location of roots and root development.
- b) The potential loss of root mass from the encroachment.
- c) Tree species and tolerance to root disturbance.
- d) Age, vigour and size of the tree.
- e) Lean and stability of the tree.
- f) Soil characteristics and volume, topography and drainage.
- g) The presence of existing or past structures or obstacles affecting root growth.
- h) Design factors.

Impacts are classified into the following categories: -

- No Impact - no encroachment into the TPZ has been identified.
- Low <10% - the identified encroachment is less than 10% of the TPZ area.
- Low >10% - the identified encroachment is greater than 10% of the TPZ area however there are factors that indicate the proposed development will not negatively impact tree viability.
- High >10% - the identified encroachment is greater than 10% of the TPZ area but does not impact the Structural Root Zone (SRZ) or the trunk.
- Substantial - the identified encroachment is greater than 20% of the TPZ area but does not impact the SRZ or the trunk.
- Conflicted - the identified encroachment impacts the SRZ and/or the trunk.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'Low' have features or considerations identified in clauses in AS4970-2009 3.3.4 which indicate these trees should be sustainable.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'High' do not have any features or considerations identified in clauses in AS4970-2009 3.3.4 and therefore non-destructive excavation and/or tree sensitive construction is required to minimise potential impacts.

Trees with an Impact identified as 'Substantial' have calculated encroachments greater than 20% and therefore alternative design solutions, additional root investigations and/or tree sensitive construction measures are required, in some instances tree removal may be required to accommodate the development.

Trees with an Impact identified as 'Conflicted' directly impact upon the SRZ or the trunk of the tree, additional root investigations or tree sensitive construction measures are not available, and the only option is alternative designs or tree removal.

Regulatory Status, Tree Protection Zones and Development Impacts are shown in Appendix B.

Discussion

Arborman Tree Solutions has undertaken an assessment of the potential impacts to the twelve identified trees located within and adjacent the Coles Shopping Centre, Norwood; which may occur from a proposed redevelopment. The proposal involves the demolition of the existing shopping centre and associated, carparking and infrastructure. Substantial redesigns have been undertaken to reduce the potential impacts to the high value trees located within the site. This assessment provides recommendations in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009) to ensure the trees recommended for retention remain viable.

Of the twelve trees assessed, eight (3, 4, 6 – 10 and 12) have been recommended for removal as they are in direct conflict with the proposal. Alternative designs were considered and undertaken however the retention of these eight trees was not feasible to achieve a reasonable redevelopment of the site. Additionally, four of the trees (Trees 3 and 7-9) display poor form, declining health and/or structure. One tree, Tree 5 is a council asset and located just outside the site on the southern boundary, this tree requires retention and protection.

Within AS4970-2009 relevant information is provided to assist with redeveloping within proximity to trees. Any tree that requires protection should be retained whilst remaining viable during and post development. Further guidance on how to suitably manage any proposed or encountered encroachments is identified in AS4970-2009. When assessing potential impacts, a Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) are the principle means of protecting a tree and are provided in accordance with AS4970-2009 section 1.4.5 and 3.2. This standard has been applied to ensure the trees identified for retention remain viable and the redevelopment is achievable.

The existing encroachment for Trees 2 and 11 is 81% and 98% respectively. The proposed encroachment for Trees 2 and 11 has been calculated at 76% and 98% respectively. Therefore, the encroachment for Tree 11 will be unchanged, while Tree 2 will have a reduced percentage of encroachment. Trees 2 and 11 are unlikely to be negatively impacted by this proposal as the percentage of encroachment is either unchanged or has been reduced. Additional tree protection measures can be undertaken on these trees to ensure they are protected and remain viable throughout the redevelopment phase.

Tree 5 is a council asset and is therefore required to be retained and protected in accordance with AS4970-2009. This tree is located just outside the boundary of the redevelopment and has a calculated encroachment of 2%. This is recognised as 'Minor' encroachment and therefore general tree protection measures should be suitable to maintain this tree in its present condition.

The existing encroachment for Tree 1 is 66% of the total Tree Protection Zone (TPZ) area and includes bitumen, curbing and paths. The proposed encroachment for Tree 1 has increased from 66% to 83% and therefore has an additional encroachment of 17%. This is classified as a 'Major Encroachment' as per AS4970-2009. AS4970-2009 also identifies relevant factors that indicate Tree 1 will not be impacted by the redevelopment as listed under 3.3.4 TPZ encroachment considerations. These considerations include;

- 3.3.4 (d), 'Age, vigour and size of the tree'.

The tree's overall good condition and viability indicate that the subject tree can tolerate the proposed level of encroachment without noticeable impacts. Healthy and vigorous trees can manage demolition of existing structures, moderate soil compaction and other root zone encroachments as they have adapted to their environment and conditions through appropriate physiological responses. Moreover, healthy trees are better able to adapt to the new site conditions once the development phase has been completed.

- 3.3.4 (h), *Design factors.*

Although it is unlikely that any roots will be encountered during the redevelopment phase, low impact methodologies and materials have been recommended to ensure Tree 1 is not impacted in any way by the proposal. Porous materials such as permeable paving can be used to help reduce the potential impacts caused by the redevelopment and have been recommended for the path area proposed for Tree 1.

Permeable paving is a material used in the construction of paths, driveways and roadways. It consists of a paver that allows water and oxygen filtration to penetrate beneath the paver and a substrate that consists of structural sand and an Ecocell system. This system can be installed at the existing grade with the purpose of restricting the potential compaction of the soil within a calculated Tree Protection Zone and to allow for nutrient, water and microbial exchange for the tree's root system. This will allow Tree 1 to be retained within the development and to remain viable for the foreseeable future. Permeable Paving is generally recommended for encroachments between 10% and up to 30%.

The balance between development and arboricultural management has been addressed and considered for the trees within the site and the proposed redevelopment. If the recommendations within this document and the guidelines of AS4970-2009 are closely adhered to, Trees 1, 2, 5 and 11 which have been recommended for retention and protection, will not be impacted by this proposal.

Development Plan Requirements

Arborman Tree Solutions undertook an Arboricultural Impact Assessment of the twelve Regulated (6), Exempt (1) and/or Significant (5) Trees within or adjacent the site located at Coles Norwood, The Parade, Norwood.

The twelve trees within or adjacent the site, included a variety of exotic and Australian native species.

Table 1 Tree Population

Tree Numbers	Botanic Name	Common Name	Number of Trees	Origin
2, 10 and 11	<i>Eucalyptus camaldulensis</i>	River Red Gum	3	Indigenous
1	<i>Quercus suber</i>	Cork Oak	1	Exotic
3	<i>Casuarina cunninghamiana</i>	River She-oak	1	Native
7, 8 and 9	<i>Eucalyptus cinerea</i>	Argyle Apple	3	Native
5 and 6	<i>Corymbia maculata</i>	Spotted Gum	2	Native
4	<i>Callistemon viminalis</i>	Weeping Bottle Brush	1	Native
12	<i>Jacaranda mimosifolia</i>	Jacaranda	1	Exotic

Findings on individual tree health and structure are presented within Appendix B - Tree Assessment Findings.

Of the trees assessed, five are Significant Trees and six are Regulated Trees as defined under the *Development Act 1993*. One tree, Tree 6, is Exempt from legislation due to its proximity to an adjacent dwelling. Significant and Regulated Trees should be protected if they meet the criteria under the local development plan. The trees have been assessed against the relevant Objective and Principles of Development Control as they apply to Regulated or Significant Trees as defined in the City of Norwood Payneham and St Peters Development Plan.

Regulated Trees: Objectives

The Regulated Trees (Trees 1, 3-5, 7 and 10) have been assessed against the following Objectives and Principles of Development Control (PDC) as contained within the City of Norwood Payneham and St Peters Development Plan. None of the trees achieved criteria that indicate they are important to the character or environment of the local area and as such their protection at the expense of an otherwise reasonable and expected development is not warranted.

Objective: *Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:*

None of the trees demonstrate any of these attributes as discussed below.

- (a) *significantly contributes to the character or visual amenity of the locality*
None of the trees significantly contributes to the character or visual amenity of the area. Tree 1 has some emotional value based on its history with the area.
- (b) *indigenous to the locality*
Tree 10 is indigenous to the locality however; is a planted specimen. The remaining species identified at site are not indigenous.
- (c) *a rare or endangered species*
None of the species are identified as rare or endangered species.
- (d) *an important habitat for native fauna.*
The trees in this site are all introduced species and have limited habitat value and therefore are not considered to provide important habitat for native fauna.

PDC: *Development should have minimum adverse effects on regulated trees.*

The proposed development seeks to retain two regulated trees, Trees 1 and 5, whilst also removing four regulated trees, Trees 3, 4, 7 and 10. The trees to be retained are not expected to be adversely affected by the development.

PDC: *A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:*

- (a) *the tree is diseased and its life expectancy is short*
Not a consideration in relation to these trees.
- (b) *the tree represents a material risk to public or private safety*
Not a consideration in relation to these trees.
- (c) *the tree is causing damage to a building*
Not a consideration in relation to these trees.
- (d) *development that is reasonable and expected would not otherwise be possible*
The proposed development requires the removal of Trees 3, 4, 6 and 10, and cannot be achieved if these trees are retained.
- (e) *the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree.*
Not a consideration in relation to these trees.

PDC: *Tree damaging activity other than removal should seek to maintain the health, aesthetic appearance and structural integrity of the tree.*

Trees 1 and 5 are identified for retention and protection and as such their health, aesthetic appearance and structural integrity are expected to be maintained.

Significant Trees: Objectives and Principles of Development Control (PDC)

The Significant Trees (Trees 2, 8, 9, 11 and 12) have been assessed against the following Objectives and Principles of Development Control (PDC) as contained within the City of Norwood Payneham and St Peters Development Plan. Trees 2 and 11 are to be retained while the remaining trees, Trees 8, 9 and 12, do not provide important aesthetic or environmental benefit to the local area and as such the use of alternative design and construction methodologies to protect these trees is not warranted.

Objective: *The conservation of significant trees, in Metropolitan Adelaide, that provide important aesthetic and environmental benefit.*

Trees 2 and 11 are to be retained. Trees 8, 9 and 12 do not provide important aesthetic and environmental benefit.

Objective: *The conservation of significant trees in balance with achieving appropriate development.*

The proposal seeks to retain and protect two Significant Trees, Trees 2 and 11, and remove three Significant Trees, Trees 8, 9 and 12.

PDC: *Development should preserve the following attributes where a significant tree demonstrates at least one of the following attributes:*

None of the trees demonstrate any of these attributes as discussed below.

- (a) *makes an important contribution to the character or amenity of the local area; or*
None of the trees make an important contribution to the character or amenity of the local area. While Trees 2 and 11 are tall large and mature specimens, these trees do not provide character above and beyond that which is expected of a specimen of this age and location.
- (b) *is indigenous to the local area and its species is listed under the National Parks and Wildlife Act 1972 as a rare or endangered native species*
None of the species are indigenous to the local area nor are they species that are listed under the *National Parks and Wildlife Act 1972* as a rare or endangered native species.
- (c) *represents an important habitat for native fauna*
The trees in this site are all likely introduced and have limited habitat value, therefore are not considered to provide important habitat for native fauna
- (d) *is part of a wildlife corridor of a remnant area of native vegetation*
These trees are not part of a wildlife corridor of a remnant area of native vegetation, it is unlikely there is any remnant vegetation in the local area.
- (e) *is important to the maintenance of biodiversity in the local environment*

None of the trees on this site are considered to be important to the maintenance of biodiversity in the local environment.

(f) *forms a notable visual element to the landscape of the local area.*

Trees 2 and 11 are tall and mature trees that provide amenity to the area, these trees are likely visible from adjacent streets and neighbouring properties. Trees 8, 9 and 12 do not form a notable visual element to the landscape of the local area, the condition, size and location of the trees is such that they cannot be considered to be notable.

PDC: *Development should be undertaken so that it has a minimum adverse effect on the health of a significant tree.*

The proposal seeks to retain and protect two Significant Trees, Trees 2 and 11, and remove three Significant Trees, Trees 8, 9 and 12.

PDC: *Significant Trees should be preserved, and tree-damaging activity should not be undertaken, unless:*

(a) *in the case of tree removal:*

(i) *the tree is diseased, and its life expectancy is short;*

Tree 9 has poor structure with a short life expectancy. Not a consideration in relation to Trees 8 and 12.

(ii) *the tree represents an unacceptable risk to public or private safety; or*

Not a consideration in relation to these trees.

(iii) *the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area; or*

Not a consideration in relation to these trees.

(iv) *the tree is shown to be causing or threatening to cause substantial damage to a substantial building or structure of value; and*

Not a consideration in relation to these trees.

(v) *all other reasonable remedial treatments and measures have been determined to be ineffective; and*

The location of Trees 8 and 12 relative to the proposed development are such that remedial treatments and protection measures are not available. Trees 2 and 11 are to be protected and retained.

(vi) *it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.*

The proposed development has been designed in accordance with the relevant guidelines for this type of development. Additionally, the design wherever possible has sought to retain existing vegetation. Due to site constraints and the type of development the retention of Trees 8, 9 and 12 cannot be achieved. Trees 2 and 11 can be protected through appropriate design and protection measures.

(b) *in any other case:*

the following applies to Tree 2 and 11.

(i) *the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree; or*

Not a consideration in relation to these trees.

(ii) *the work is required due to unacceptable risk to public or private safety; or*

Not a consideration in relation to these trees.

(iii) *the tree is shown to be causing or threatening to cause damage to a substantial building or structure of value; or*

Not a consideration in relation to these trees.

(iv) *the aesthetic appearance and structural integrity of the tree is maintained;*

Trees 2 and 11 are not expected to be impacted by the development and as such the aesthetic appearance and structural integrity of the trees will be maintained.

- (v) *it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.* The design has considered Trees 2 and 11 and incorporated elements that will prevent substantial tree-damaging activity occurring.

PDC: *Development involving groundwork activities such as excavation, filling, and sealing of surrounding surfaces (whether such work takes place on the site of a Significant Tree or otherwise) should only be undertaken where the aesthetic appearance, health and integrity of a Significant Tree, including its root system, will not be adversely affected.*

The design has considered Trees 2 and 11 to ensure the aesthetic appearance, health and integrity of the trees, including their root system, will not be adversely affected. Trees 8, 9 and 12 cannot be incorporated into the development and as such the application includes their removal.

PDC: *Land should not be divided or developed where the division or development would be likely to result in a substantial tree-damaging activity occurring to a significant tree.*

The proposal seeks the removal of three Significant Trees (Trees 8, 9 and 12) whilst retaining two trees (Trees 2 and 11).

Recommendation

The following recommendations are presented based on the Arboricultural Impact Assessment and have been provided to appropriately manage the twelve identified trees:

Pre- Development

1. Appoint a Project Arborist to be consulted on all matters relating to the care and maintenance of the trees and each Tree Protection Zone (TPZ) for Trees 1, 2, 5 and 11.
2. A Tree Protection Plan (TPP) is required to provide guidance and clarification of the demolition and construction phase within the TPZ of Trees 1, 2, 5 and 11.
3. Trees 3, 4, 6 - 10 and 12 are in direct conflict with the proposal. Alternative designs have been considered however, would restrict the reasonable redevelopment of the site.
4. Written approval from the City of Norwood Payneham and St Peters is required prior to removing Trees 3, 4, 7 -10 and 12 as these trees are 'regulated' under the *Development Act 1993*. Tree 6 is Exempt and no approval to remove this tree is required.
5. Erect a protective fence to protect as much of each TPZ as practical of each tree to prevent unauthorised entry, ensure the area is clearly signed TREE PROTECTION ZONE - NO ACCESS. The fence must be constructed with sturdy temporary fencing, 1.8 metres high. An example of this is shown in Appendix E Tree Protection Zone Guidelines. This sign and fence can be removed once the development has concluded. The fences are to be installed prior to the removal of any of the hardstand and concrete surfaces.
6. Permeable Paving at the existing grade has been recommended within the TPZ area for the proposed footpath of Tree 1.

Thank you for the opportunity to provide this report. Should you have any questions or require further information, please contact me and I will be happy to be of assist.

Yours sincerely,



JASON WILLIAMS

Consulting Arboriculturist

Graduate Certificate in Arboriculture

Diploma of Arboriculture

Australian Arborist Tier 1 License AL-2703

Arboriculture Australia - Registered Consulting Arborist

International Society of Arboriculture – Tree Risk Assessment (TRAQ)

Quantified Tree Risk Assessment (QTRA) Licensee – 5775

VALID Tree Risk Assessment (VALID) – 2018



Glossary

Size:	approximate height and width of tree in metres.
Age:	identification of the maturity of the subject tree.
Useful Life Expectancy:	expected number of the years that the subject specimen will remain alive and sound in its current location and/or continues to achieve the relevant Principles of Development Control.
Health:	visual assessment of tree health.
Structure:	visual assessment of tree structure.
Circumference:	trunk circumference measured at one metre above ground level. This measurement is used to determine the status of the tree in relation to the <i>Development Act 1993</i> .
Diameter at Breast Height (DBH):	trunk diameter measured at 1.4 metres above ground level used to determine the Tree Protection Zone as described in Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> .
Diameter at Root Buttress (DRB):	trunk diameter measured just above the root buttress as described in Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> and is used to determine the Structural Root Zone.
Tree Damaging Activity	Tree damaging activity includes those activities described within the <i>Development Act 1993</i> such as removal, killing, lopping, ringbarking or topping or any other substantial damage such as mechanical or chemical damage, filling or cutting of soil within the TPZ. Can also include forms of pruning above and below the ground.
Tree Protection Zone:	area of root zone that should be protected to prevent substantial damage to the tree's health.
Structural Root Zone:	calculated area within the tree's root zone that is considered essential to maintain tree stability.
Project Arborist	A person with the responsibility for carrying out a tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The Project Arborist must be competent in arboriculture, having acquired through training, minimum Australian Qualification Framework (AQTF) Level 5, Diploma of Horticulture (Arboriculture) and/or equivalent experience, the knowledge and skills enabling that person to perform the tasks required by this standard.

References

Australian Standard AS4970–2009 ***Protection of trees on development sites***: Standards Australia.

Matheny N. Clark J. 1998: ***Trees and Development a Technical Guide to Preservation of Trees During Land Development***. International Society of Arboriculture, Champaign, Illinois, USA.

Appendix A - Tree Assessment Methodology

Tree Assessment Form (TAF©)

Record	Description
Tree	A perennial woody plant with a mature height of greater than 5 metres and life expectancy of more than 10 years.
Genus and Species	Trees are identified using normal field plant taxonomy techniques. Due to hybridisation and plant conditions available on the day of observation it may not always be possible to identify the tree to species level; where species cannot be ascertained sp. is used.
Height	Tree height is observed and recorded in the following ranges; <5m, 5-10m, 10-15m and >20m.
Spread	Crown width (projection) diameter is recorded by the following fields <5m, 5-10m, 10-15m, 15-20m, >20m.
Tree Health	Tree health was assessed using the Arborman Tree Solutions - Tree Health Assessment Method that is based on international best practice.
Tree Structure	Tree structure was assessed using Arborman Tree Solutions - Tree Structure Assessment Method that is based on international best practice.
Tree Risk Assessment	Trees were assessed using the International Society of Arboriculture Level 1 Tree Assessment method. The person conducting the assessment has acquired the International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ).
Legislative Status	Legislation status was identified through the interpretation of the <i>Development Act 1993</i> , and the <i>Natural Resource Management Act 2004</i> as well as other relevant legislation, therefore determining regulatory status of the subject tree.
Mitigation	Measures to reduce tree risk may be recommended in the form of pruning and this listed in the Tree Assessment Findings (Appendix C). Tree pruning is recommended in accordance with AS4373-2007 <i>Pruning amenity trees</i> where practicable. Where measures to mitigate risk is not possible and the risk is unacceptable, then tree removal or further investigation is recommended.

Useful Life Expectancy (ULE)

ULE Rating	Definition
Surpassed	The tree has surpassed its Useful Life Expectancy.
<10 years	The tree displays either or both Poor Health and/or Structure and is considered to have a short Useful Life Expectancy of less than ten years.
>10 years	The tree displays Fair Health or Structure and Good Health and Structure and is considered to have a Useful Life Expectancy of more than ten years.
>20 years	The tree displays Good Health and Structure and is considered to have an extended Useful Life Expectancy of more than twenty years.

Maturity (Age)

Age Class	Definition
Senescent	The tree has surpassed its optimum growing period and is declining and/or reducing in size. May be considered as a veteran in relation to its ongoing management. Tree will have generally reached greater than 80% of its expected life expectancy.
Mature	A tree which has reached full maturity in terms of its predicted life expectancy and size, the tree is still active and experiencing cell division. Tree will have generally reached 20-80% of its expected life expectancy.
Semi Mature	A tree which has established, but has not yet reached maturity. Normally tree establishment practices such as watering will have ceased. Tree will generally not have reached 20% of its expected life expectancy.
Juvenile	A newly planted tree or one which is not yet established in the landscape. Tree establishment practices such as regular watering will still be in place. Tree will generally be a newly planted specimen up to five years old; this may be species dependant.

Tree Health Indication (THI©)

Category	Description
Good	Tree displays high vigour, uniform leaf colour, no or little dieback (<5%), crown density (>85%) and or healthy axillary buds and typical internode length. The tree has little to no pest and/or disease infestation.
Fair	Tree displays low vigour, dull leaf colour, little dieback (<15%), crown density (>70%) and/or reduced axillary buds and internode length. Minor pest and/or disease infestation potentially impacting on tree health.
Poor	Tree displays no vigour, chlorotic or dull leaf colour, moderate to high crown dieback (>15%), low crown density (<70%) and/or few or small axillary buds and shortened internode length. Pest and or disease infestation is evident and/or widespread.
Dead	The tree has died and has no opportunity for recovery.

Tree Structural Assessment (TSA©)

Category	Description
Good	Little to no branch failure observed within the crown, well-formed unions, no included bark, good branch and trunk taper present, root buttressing and root plate are typical.
Fair	History of minor branch failure observed in crown, well-formed unions, no included bark, acceptable branch and trunk taper present, root buttressing and root plate are typical.
Poor	History of significant branch failure observed in crown, poorly formed unions, included bark present, branch and trunk taper absent, root buttressing and root plate are atypical.
Failed	The structure of the tree has or is in the process of collapsing.

Tree Retention Rating (TRR)

The Tree Retention Rating is based on a number of factors that are identified as part of the standard tree assessment criteria including Condition, Size, Environmental, Amenity and Special Values. These factors are combined in a number of matrices to provide a Preliminary Tree Retention Rating and a Tree Retention Rating Modifier which combine to provide a Tree Retention Rating that is measurable, consistent and repeatable

Preliminary Tree Retention Rating

The Preliminary Tree Retention Rating is conducted assessing Tree Health and Structure to give an overall Condition Rating and Height and Spread to give an overall Size Rating. The following matrices identify how these are derived.

Condition Matrix				
Structure	Health			
	Good	Fair	Poor	Dead
Good	C1	C1	C3	C4
Fair	C1	C2	C3	C4
Poor	C3	C3	C4	C4
Failed	C4	C4	C4	C4

Size Matrix					
Spread	Height				
	>20	15-20	10-15	5-10	<5
>20	S1	S1	S1	S2	S3
15-20	S1	S1	S2	S3	S3
10-15	S1	S2	S2	S3	S4
5-10	S2	S3	S3	S4	S5
<5	S3	S3	S4	S5	S5

The results from the Condition and Size Matrices are then placed in the Preliminary Tree Retention Rating Matrix.

Preliminary Tree Retention Rating				
Size	Condition			
	C1	C2	C3	C4
S1	High	High	Low	Low
S2	High	Moderate	Low	Low
S3	Moderate	Moderate	Low	Low
S4	Moderate	Moderate	Low	Low
S5	Low	Low	Low	Low

The Preliminary Tree Retention Rating gives a base rating for all trees regardless of other environmental and/or amenity factors and any Special Value considerations. The Preliminary Tree Retention Rating can only be modified if these factors are considered to be of high or low enough importance to warrant increasing or, in a few cases, lowering the original rating.

Tree Retention Rating Modifier

The Preliminary Tree Retention Rating is then qualified against the recognised Environmental and Amenity benefits that trees present to the community thereby providing a quantitative measure to determine the overall Tree Retention Rating. Data is collected in relation to Environmental and Amenity attributes which are compared through a set of matrices to produce a Tree Retention Rating Modifier.

Environmental Matrix				
Origin	Habitat			
	Active	Inactive	Potential	No Habitat
Indigenous	E1	E1	E2	E3
Native	E1	E2	E3	E3
Exotic	E2	E3	E3	E4
Weed	E3	E3	E4	E4

Amenity Matrix				
Character	Aesthetics			
	High	Moderate	Low	None
Important	P1	P1	P2	P3
Moderate	P1	P2	P3	P3
Low	P2	P3	P3	P4
None	P3	P3	P4	P4

Tree Retention Rating Modifier				
Amenity	Environment			
	E1	E2	E3	E4
P1	High	High	Moderate	Moderate
P2	High	Moderate	Moderate	Moderate
P3	Moderate	Moderate	Moderate	Moderate
P4	Moderate	Moderate	Moderate	Low

Tree Retention Rating

The results of the Preliminary Tree Retention Rating and the Tree Retention Rating Modifier matrices are combined in a final matrix to give the actual Tree Retention Rating.

Tree Retention Rating Matrix			
Tree Retention Rating Modifier	Preliminary Tree Retention Rating		
	High	Moderate	Low
High	Important	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Low

Special Value Trees

There are potentially trees that have Special Value for reasons outside of normal Arboricultural assessment protocols and therefore would not have been considered in the assessment to this point; to allow for this a Special Value characteristic that can override the Tree Retention Rating can be selected. Special Value characteristics that could override the Tree Retention Rating would include factors such as the following:

Cultural Values

Memorial Trees, Avenue of Honour Trees, Aboriginal Heritage Trees, Trees planted by Dignitaries and various other potential categories.

Environmental Values

Rare or Endangered species, Remnant Vegetation, Important Habitat for rare or endangered wildlife, substantial habitat value in an important biodiversity area and various other potential categories.

Where a tree achieves one or more Special Value characteristics the Tree Retention Rating will automatically be overridden and assigned the value of Important.

Tree Retention Rating Definitions

- | | |
|------------------|--|
| Important | These trees are considered to be important and will in almost all instances be required to be retained within any future development/redevelopment. It is highly unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Protection of these trees should as a minimum be consistent with Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> however given the level of importance additional considerations may be required. |
| High | These trees are considered to be important and will in most instances be required to be retained within any future development/redevelopment. It is unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Protection of these trees should be consistent with Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> . |
| Moderate | These trees are considered to be suitable for retention however they achieve less positive attributes than the trees rated as Important or High and as such their removal or other tree damaging activity is more likely to be considered to be acceptable in an otherwise reasonable and expected development. The design process should where possible look to retain trees with a Moderate Retention Rating. Protection of these trees, where they are identified to be retained, should be consistent with Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> . |
| Low | These trees are not considered to be suitable for retention in any future development/redevelopment; trees in this category do not warrant special works or design modifications to allow for their retention. Trees in this category are likely to be approved for removal and/or other tree damaging activity in an otherwise reasonable and expected development. Protection of these trees, where they are identified to be retained, should be consistent with Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> . |

Appendix B - Tree Assessment Findings

Quercus suber

Tree No: 1

Cork Oak

Inspected: Tuesday, 5 March 2019

Height: >10 metres

Spread: >10 metres

Health: Good

Structure: Good

Trunk Circumference: >2 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 9.96 metres

Structural Root Zone (SRZ): 3.09 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment is greater than 10% of the TPZ area however the proposed development incorporates features that minimise the impact on the tree.

Observations

Recommendation

This tree should be protected in accordance with AS4970-2009.



GPS Coords (MGA Zone 54)	283942 E, 6133054 N
Legislative Status	Regulated
Development Impact	Low
Recommendation	Apply Tree Protection

Eucalyptus camaldulensis

Tree No: 2

River Red Gum

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >20 metres

Health: Good

Structure: Good

Trunk Circumference: >3 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 15.00 metres

Structural Root Zone (SRZ): 3.71 metres

Legislative Status

This tree is identified as a Significant Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than three metres and is not subject to any exemption from regulation.

Development Impact

The calculated encroachment is low however, additional tree protection measures are required.

Observations

Recommendation

This tree should be protected in accordance with AS4970-2009.



GPS Coords (MGA Zone 54)	283947 E, 6133003 N
Legislative Status	Significant
Development Impact	Low
Recommendation	Apply Tree Protection

River She Oak

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >10 metres

Health: Good

Structure: Fair

Trunk Circumference: >2 metres

Useful Life Expectancy: >10 years

Tree Protection Zone (TPZ): 7.92 metres

Structural Root Zone (SRZ): 2.83 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

There is a poorly formed union in the upper crown.

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	283924 E, 6133078 N
Legislative Status	Regulated
Development Impact	Conflicted
Recommendation	Remove

Callistemon viminalis

Tree No: 4

Weeping Bottle Brush

Inspected: Tuesday, 5 March 2019

Height: >5 metres

Spread: >5 metres

Health: Good

Structure: Fair

Trunk Circumference: >2 metres

Useful Life Expectancy: >10 years

Tree Protection Zone (TPZ): 5.02 metres

Structural Root Zone (SRZ): 1.50 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	283963 E, 6132995 N
Legislative Status	Regulated
Development Impact	Conflicted
Recommendation	Remove

Corymbia maculata

Tree No: 5

Spotted Gum

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >20 metres

Health: Good

Structure: Good

Trunk Circumference: >2 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 8.40 metres

Structural Root Zone (SRZ): 2.92 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment is less than 10% of the TPZ area and the proposed development is not expected to have a noticeable impact on the viability of the tree.

Observations

This tree is a council asset and requires protection.

Recommendation

This tree should be protected in accordance with AS4970-2009.



GPS Coords (MGA Zone 54)	283998 E, 6132987 N
Legislative Status	Regulated
Development Impact	Low
Recommendation	Apply Tree Protection

Corymbia maculata

Tree No: 6

Spotted Gum

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >15 metres

Health: Good

Structure: Good

Trunk Circumference: >2 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 7.80 metres

Structural Root Zone (SRZ): 2.81 metres

Legislative Status

This tree is exempt from control under the Development Act 1993. This tree is within 10 metres of a dwelling and is therefore exempt from control under the Development Act 1993.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284061 E, 6133000 N
Legislative Status	Exempt
Development Impact	Conflicted
Recommendation	Remove

Argyle Apple

Inspected: Tuesday, 5 March 2019

Height: >10 metres

Spread: >10 metres

Health: Good

Structure: Good

Trunk Circumference: >2 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 7.80 metres

Structural Root Zone (SRZ): 2.83 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

This tree displays phototropic growth response and has poor form.

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284084 E, 6133013 N
Legislative Status	Regulated
Development Impact	Conflicted
Recommendation	Remove

Argyle Apple

Inspected: Tuesday, 5 March 2019

Height: >10 metres

Spread: >15 metres

Health: Good

Structure: Fair

Trunk Circumference: >3 metres

Useful Life Expectancy: >10 years

Tree Protection Zone (TPZ): 7.57 metres

Structural Root Zone (SRZ): 2.98 metres

Legislative Status

This tree is identified as a Significant Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than three metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

There is a poorly formed union in the lower crown.

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284104 E, 6133025 N
Legislative Status	Significant
Development Impact	Conflicted
Recommendation	Remove

Argyle Apple

Inspected: Tuesday, 5 March 2019

Height: >15 metres

Spread: >15 metres

Health: Good

Structure: Poor

Trunk Circumference: >3 metres

Useful Life Expectancy: <10 years

Tree Protection Zone (TPZ): 9.50 metres

Structural Root Zone (SRZ): 3.09 metres

Legislative Status

This tree is identified as a Significant Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than three metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

This tree has included bark unions in the primary and secondary structure.

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284100 E, 6133048 N
Legislative Status	Significant
Development Impact	Conflicted
Recommendation	Remove

Eucalyptus camaldulensis

Tree No: 10

River Red Gum

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >15 metres

Health: Good

Structure: Good

Trunk Circumference: >2 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 10.32 metres

Structural Root Zone (SRZ): 3.21 metres

Legislative Status

This tree is identified as a Regulated Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284102 E, 6133054 N
Legislative Status	Regulated
Development Impact	Conflicted
Recommendation	Remove

River Red Gum

Inspected: Tuesday, 5 March 2019

Height: >20 metres

Spread: >20 metres

Health: Good

Structure: Good

Trunk Circumference: >3 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 15.00 metres

Structural Root Zone (SRZ): 3.87 metres

Legislative Status

This tree is identified as a Significant Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than three metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment is less than 10% of the TPZ area and the proposed development is not expected to have a noticeable impact on the viability of the tree.

Observations

Recommendation

This tree should be protected in accordance with AS4970-2009.



GPS Coords (MGA Zone 54)	284025 E, 6133098 N
Legislative Status	Significant
Development Impact	Low
Recommendation	Apply Tree Protection

Jacaranda

Inspected: Tuesday, 5 March 2019

Height: >10 metres

Spread: >15 metres

Health: Good

Structure: Good

Trunk Circumference: >3 metres

Useful Life Expectancy: >20 years

Tree Protection Zone (TPZ): 7.21 metres

Structural Root Zone (SRZ): 2.63 metres

Legislative Status

This tree is identified as a Significant Tree as defined in the Development Act 1993. This tree has a trunk circumference greater than three metres and is not subject to any exemption from regulation.

Development Impact

The identified encroachment impacts the SRZ or the trunk.

Observations

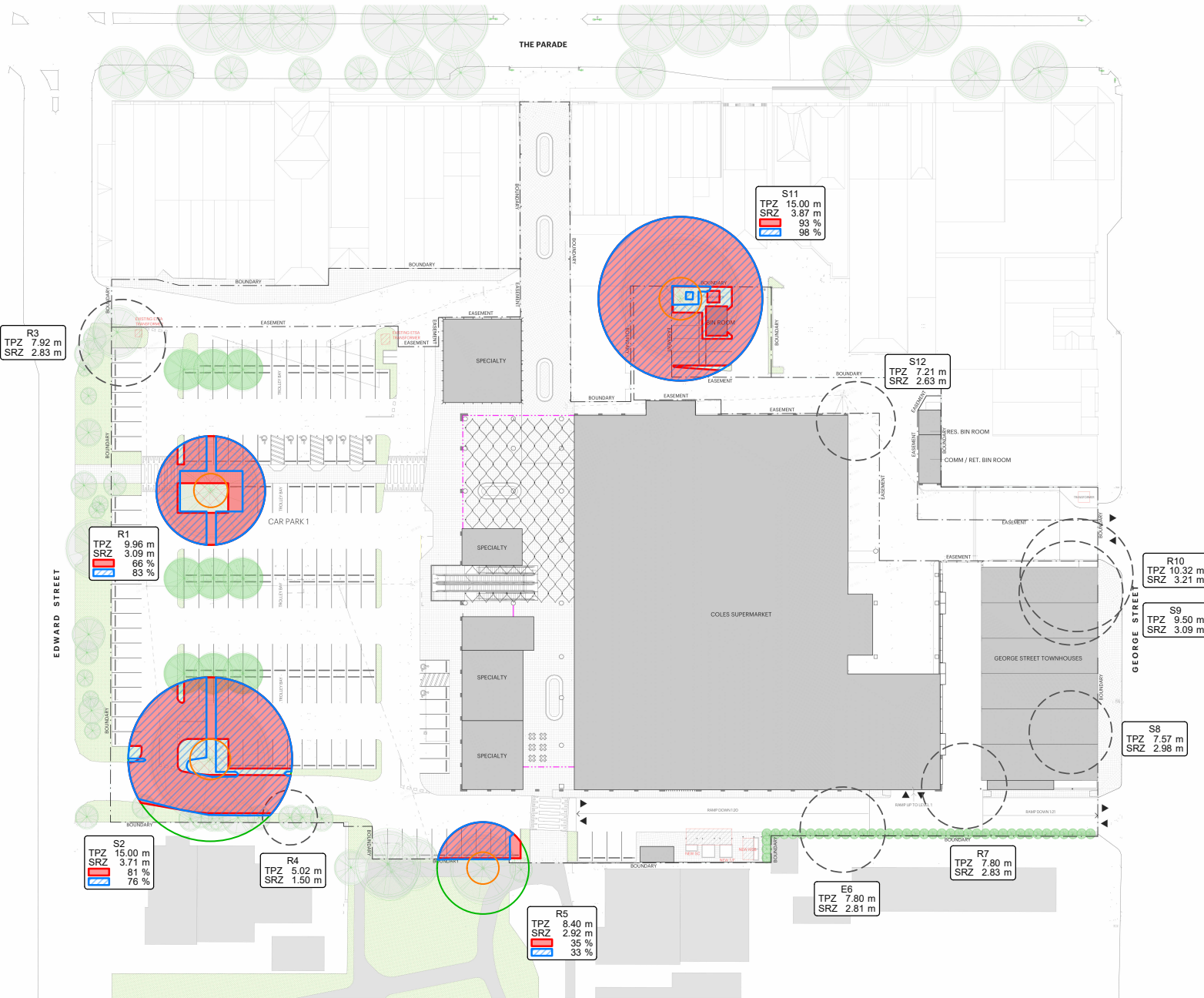
Recommendation

Tree removal is required to support the proposed development.



GPS Coords (MGA Zone 54)	284060 E, 6133077 N
Legislative Status	Significant
Development Impact	Conflicted
Recommendation	Remove

Appendix C - Mapping



Legend

TPZ - Remain

TPZ - Remove

SRZ

Additional Encroachment

Existing Encroachment

SITE PLAN - FFL 62.52



FOR INFORMATION
DATE: 10/05/19

DATE	DESCRIPTION	DATE	DESCRIPTION
10/05/19	ISSUED FOR RFP No.2		

DATE	DESCRIPTION
10/05/19	ISSUED FOR RFP No.2

Appendix D - Tree Assessment Summary

Tree Assessment Summary

Tree No.	Botanic Name	Legislative Status	Development Impact	TPZ Radius	Observations	Recommendations
1	<i>Quercus suber</i>	Regulated	Low	9.96 metres		Apply Tree Protection
2	<i>Eucalyptus camaldulensis</i>	Significant	Low	15.00 metres		Apply Tree Protection
3	<i>Casuarina cunninghamiana</i>	Regulated	Conflicted	7.92 metres	There is a poorly formed union in the upper crown.	Remove
4	<i>Callistemon viminalis</i>	Regulated	Conflicted	5.02 metres		Remove
5	<i>Corymbia maculata</i>	Regulated	Low	8.40 metres	This tree is a council asset and requires protection.	Apply Tree Protection
6	<i>Corymbia maculata</i>	Exempt	Conflicted	7.80 metres		Remove
7	<i>Eucalyptus cinerea</i>	Regulated	Conflicted	7.80 metres	This tree displays phototropic growth response and has poor form.	Remove
8	<i>Eucalyptus cinerea</i>	Significant	Conflicted	7.57 metres	There is a poorly formed union in the lower crown.	Remove
9	<i>Eucalyptus cinerea</i>	Significant	Conflicted	9.50 metres	This tree has included bark unions in the primary and secondary structure.	Remove
10	<i>Eucalyptus camaldulensis</i>	Regulated	Conflicted	10.32 metres		Remove
11	<i>Eucalyptus camaldulensis</i>	Significant	Low	15.00 metres		Apply Tree Protection
12	<i>Jacaranda mimosifolia</i>	Significant	Conflicted	7.21 metres		Remove

Appendix E - Tree Protection Zone Guidelines

Tree Protection Zone General Specifications and Guidelines

The Tree Protection Zone(s) is identified on the site plan. The TPZ is an area where construction activities are regulated for the purposes of protecting tree viability. The TPZ should be established so that it clearly identifies and precludes development/construction activities including personnel.

If development activities are required within the TPZ then these activities must be reviewed and approved by the Project Arborist. Prior to approval, the Project Arborist must be certain that the tree(s) will remain viable as a result of this activity.

Work Activities Excluded from the Tree Protection Zone:

- a) Machine excavation including trenching;
- b) Excavation for silt fencing;
- c) Cultivation;
- d) Storage;
- e) Preparation of chemicals, including preparation of cement products;
- f) Parking of vehicles and plant;
- g) Refuelling;
- h) Dumping of waste;
- i) Wash down and cleaning of equipment;
- j) Placement of fill;
- k) Lighting of fires;
- l) Soil level changes;
- m) Temporary or permanent installation of utilities and signs, and
- n) Physical damage to the tree.

Protective Fencing

Protective fencing must be installed around the identified Tree Protection Zone (See Figure1). The fencing should be chain wire panels and compliant with AS4687 - 2007 *Temporary fencing and hoardings*. Shade cloth or similar material should be attached around the fence to reduce dust, other particulates and liquids entering the protected area.

Temporary fencing on 28kg bases are recommended for use as this eliminates any excavation requirements to install fencing. Excavation increase the likelihood of root damage therefore should be avoided where possible throughout the project.

Existing perimeter fencing and other structures may be utilised as part of the protective fencing.

Any permanent fencing should be post and rail with the set out determined in consultation with the Project Arborist.

Where the erection of the fence is not practical the Project Arborist is to approve alternative measures.

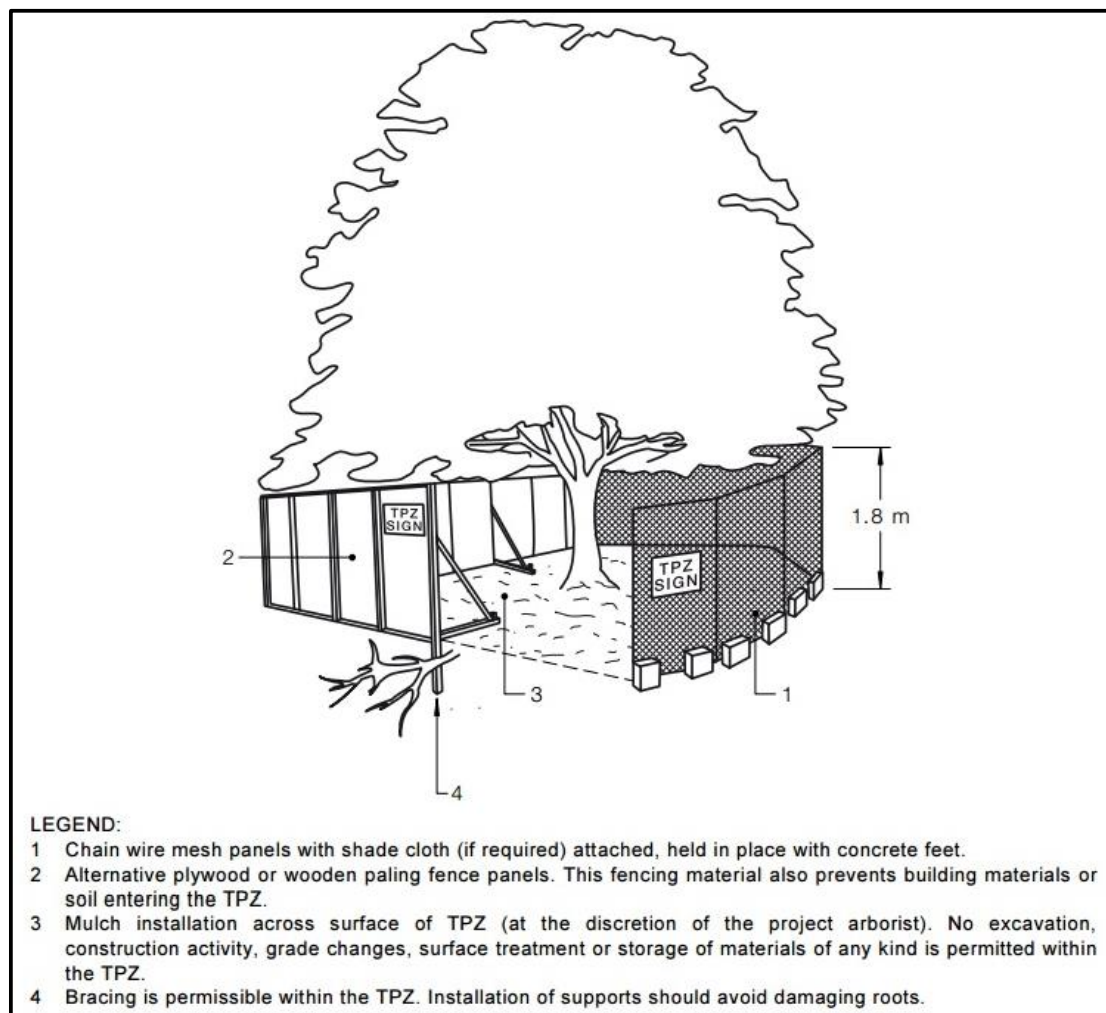


Figure 1 Showing example of protection fencing measures suitable.

Other Protection Measures

General

When a TPZ exclusion area cannot be established due to practical reasons or the area needs to be entered to undertake construction activities then additional tree protection measures may need to be adopted. Protection measures should be compliant with AS4970-2009 and approved by the Project Arborist

Installation of Scaffolding within Tree Protection Area.

Where scaffolding is required within the TPZ branch removal should be minimised. Any branch removal required should be approved by the Project Arborist and performed by a certified Arborist and performed in accordance with AS4373-2007. Approval to prune branches must be documented and maintained.

Ground below scaffold should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Figure below. The boarding should be left in place until scaffolding is removed.

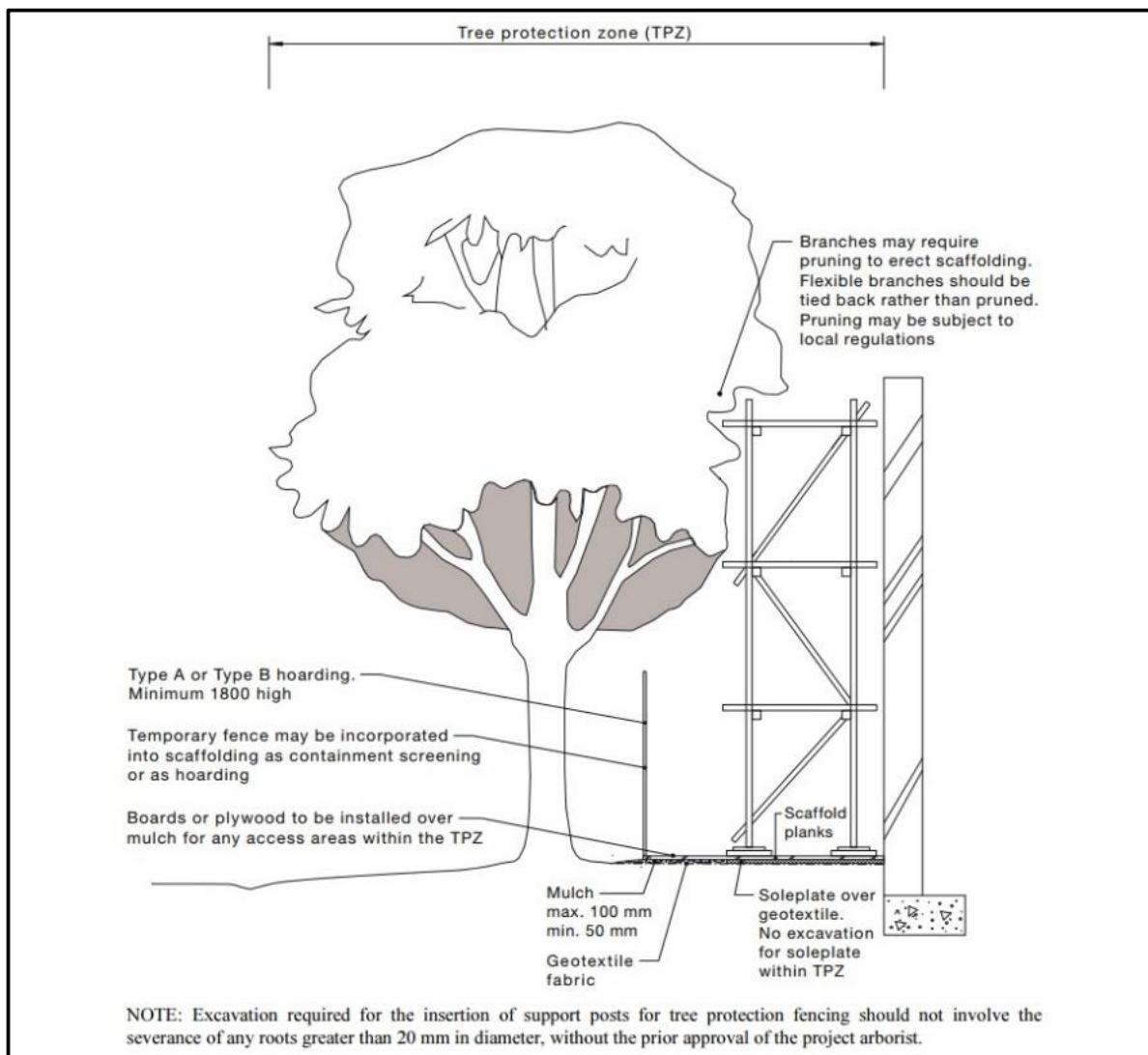


Figure 2 – Showing scaffold constructed within TPZ.

Ground Protection

Where access is required within the TPZ ground protection measures are required. Ground protection is to be designed to prevent both damage to the roots and soil compaction.

Ground protection methods include the placement of a permeable membrane beneath a layer of non-compactable material such as mulch or a no fines gravel which is in turn covered with rumble boards or steel plates.

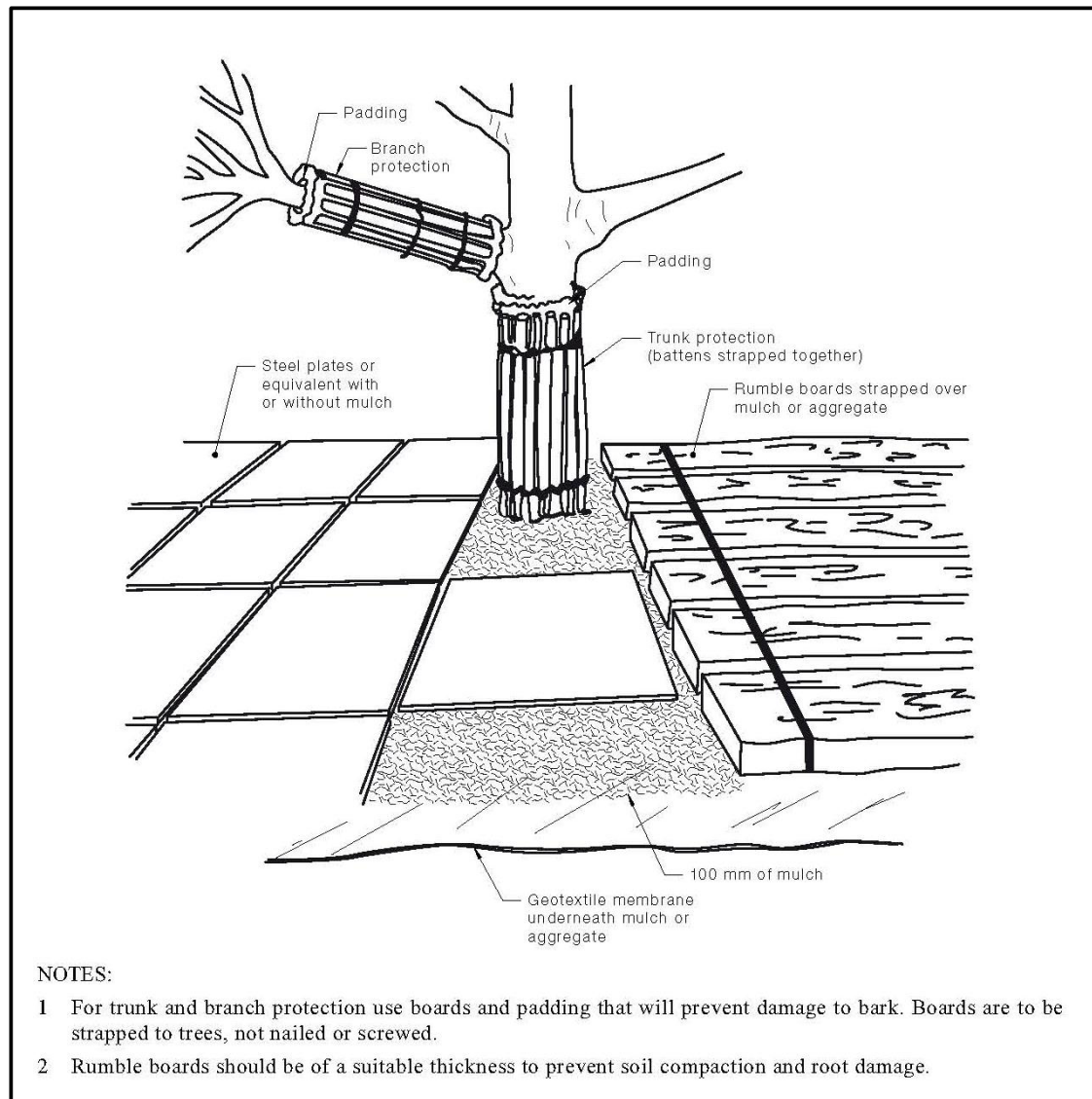


Figure 3 – Ground protection methods.

Document Source:

Diagrams in this document are sourced from AS4970-2009 Protection of trees on development sites. Further information and guidelines are available in within that document.

Paving Construction within a Tree Protection Zone

Paving within any Tree Protection Zone (TPZ) must be carried out above natural ground level unless it can be shown with non-destructive excavation (AirSpade® or similar) that no or insignificant root growth occupies the proposed construction area.

Due to the adverse effect filling over a Tree Protection Zone (TPZ) can have on tree health; alternative mediums other than soil must be used. Available alternative mediums include structural soils or the use of a cellular confinement system such as *Ecocell®*.

Ecocell®

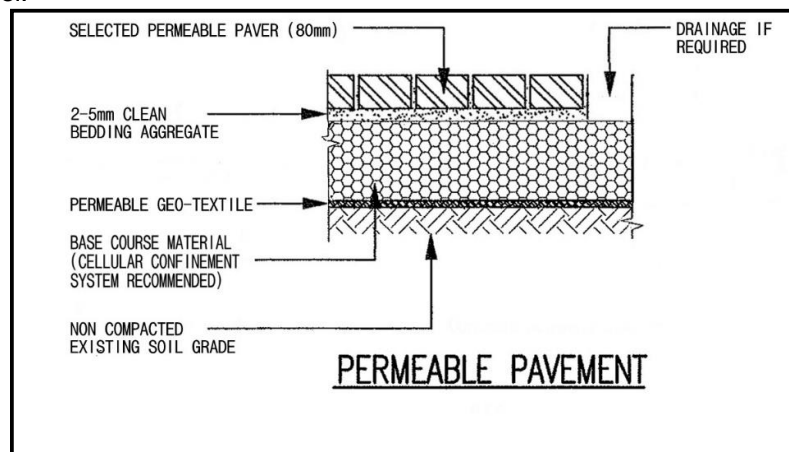
Ecocell® systems are a cellular confinement system that can be filled with large particle sized gravels as a sub-base for paving systems to reduce compaction to the existing grade.

Site preparation

- Clearly outline to all contracting staff entering the site the purpose of the TPZ's and the contractors' responsibilities. No fence is to be moved and no person or machinery is to access the TPZ's without consent from the City of Unley and/or the Project Arborist.
- Fence off the unaffected area of the TPZ with a temporary fence leaving a 1.5 metre gap between the work area and the fence; this will prevent machinery access to the remaining root zone.

Installation of Ecocell® and EcoTrihex Paving®

- Install a non-woven geotextile fabric for drainage and separation from sub base with a minimum of 600mm overlap on all fabric seams as required.
- Add Ecocell®, fill compartments with gravel and compact to desired compaction rate.
- If excessive groundwater is expected incorporate an appropriate drainage system within the bedding sand level.
- Add paving sand to required depth and compact to paving manufacturer's specifications.
- Lay EcoTrihex Paving® as per manufactures specifications and fill gaps between pavers with no fines gravel.
- Remove all debris, vegetation cover and unacceptable in-situ soils. No excavation or soil level change of the sub base is allowable for the installation of the paving.
- Where the finished soil level is uneven, gullies shall be filled with 20 millimetre coarse gravel to achieve the desired level.



This construction method if implemented correctly can significantly reduce and potentially eliminated the risk of tree decline and/or structural failure and effectively increase the size of the Tree Protection Zone to include the area of the paving.

Certificates of Control

Stage in development	Tree management process	
	Matters for consideration	Actions and certification
Development submission	Identify trees for retention through comprehensive arboricultural impact assessment of proposed construction. Determine tree protection measures Landscape design	Provide arboricultural impact assessment including tree protection plan (drawing) and specification
Development approval	Development controls Conditions of consent	Review consent conditions relating to trees
Pre-construction (Sections 4 and 5)		
Initial site preparation	State based OHS requirements for tree work Approved retention/removal Refer to AS 4373 for the requirements on the pruning of amenity trees Specifications for tree protection measures	Compliance with conditions of consent Tree removal/tree retention/transplanting Tree pruning Certification of tree removal and pruning Establish/delineate TPZ Install protective measures Certification of tree protection measures
Construction (Sections 4 and 5)		
Site establishment	Temporary infrastructure Demolition, bulk earthworks, hydrology	Locate temporary infrastructure to minimize impact on retained trees Maintain protective measures Certification of tree protection measures
Construction work	Liaison with site manager, compliance Deviation from approved plan	Maintain or amend protective measures Supervision and monitoring
Implement hard and soft landscape works	Installation of irrigation services Control of compaction work Installation of pavement and retaining walls	Remove selected protective measures as necessary Remedial tree works Supervision and monitoring
Practical completion	Tree vigour and structure	Remove all remaining tree protection measures Certification of tree protection
Post construction (Section 5)		
Defects liability/maintenance period	Tree vigour and structure	Maintenance and monitoring Final remedial tree works Final certification of tree condition

Document Source:

This table has been sourced from AS4970-2009 Protection of trees on development sites. Further information and guidelines are available in within that document.

Tree Protection Zone



NO ACCESS

Contact: Arborman Tree Solutions

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TMK CONSULTING ENGINEERS

1902045_PC

22 Oct 2019



PRELIMINARY WIND EFFECTS REPORT

COLES NORWOOD MIXED DEVELOPMENT
166 THE PARADE NORWOOD

prepared for

AUSTRALASIAN PROPERTY DEVELOPMENT



Civil - Structural - Environmental - Geotechnical - Mechanical - Electrical - Fire - Hydraulics - Lifts - Green ESD
Level 6, 100 Pirie Street, Adelaide SA 5000 Telephone (08) 8238 4100 Facsimile (08) 8410 1405
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WIND EFFECTS REPORT

ABSTRACT

This report discusses the likely wind effects on pedestrian comfort at ground level and amenity/residence comfort at the open landscape plaza at third level from the proposed development at 166 The Parade, Norwood. The wind effects are considered to the north, south, east and west of the site. Any effects are then related to the amount of pedestrian use to determine an overall wind impact. In determining this impact consideration is also given to threshold wind speeds, which relate to comfort levels based on the use of the outside space surrounding the development.

PROPOSED DEVELOPMENT AND AREA CHARACTERISTICS

From the plans provided the development consists of the demolition of existing single storey building and construction of a new 8 level building. The proposed building structure consists of following (refer also to figure 3 and sheet SD1);

- Three storey building structure (Coles supermarket, medical/childcare, offices and car parks)
- Two storey town-houses are located around and above the perimeter at third floor level with approximate 1500m² of open space (landscape) central plaza.
- Five storey apartments over third floor to the North-East and North-West of the Coles domain.

The building foot print is approximately 80 metres x 70 metres and covers approximately 50 % of the entire site.

The building site extends between George Street (to the east) and Edward Street (to the west) with a setback of approximately 55 m from the 'The Parade' (to the north).

Single & two storey commercial buildings bound the site along its Northern and Northeastern edges.

The western edge is bounded by Edward Street and single / double storey buildings with open car parking areas.

George Street bounds the site to East along with predominantly single storey residential buildings.

Single storey residential buildings also bound to the South along with some open park space (Coke Park).

Figure 3 and attached sheet SD1 shows a site plan with the immediately surrounding buildings and proposed scope of the development.

The proposed development site is well setback from the main retail & commercial areas with high pedestrian activity along 'The Parade' to the north. The southern site is considered to be an area of low pedestrian activity, whilst the adjacent George Street and Edward Street are areas of low to moderate pedestrian activity with the proposed building setback approximately 30m and 60m from George and Edward Street respectively.

RELEVANT WIND DATA

The wind is highly varied in its speed and direction at different times of the day. This variable is often measured by means of frequency analysis in the form of wind roses. Figures 1 and 2 illustrate the variation of wind speed with directions for Adelaide airport at 9am and 3pm from 1955 to 2016. It is clear that the critical wind directions are from north/northeast in the morning and southwest in the afternoon, as such only these directions are deemed necessary to be considered (wind from other directions account for much lower levels of wind gust activity and hence statistically have a much lower level of impact).

Figure 1

Rose of Wind direction versus Wind speed in km/h (16 Feb 1955 to 05 Apr 2016)
Custom times selected, refer to attached note for details.
ADELAIDE AIRPORT
Site No: 022034 • Opened Feb 1955 • Still Open • Latitude: -34.9524° • Longitude: 138.5204° • Elevation 2m
An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.

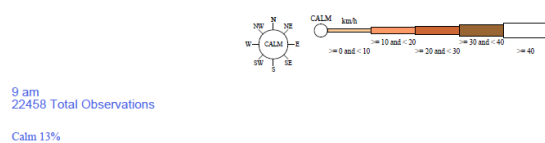
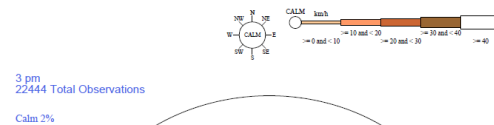


Figure 2

Rose of Wind direction versus Wind speed in km/h (16 Feb 1955 to 05 Apr 2016)
Custom times selected, refer to attached note for details.
ADELAIDE AIRPORT
Site No: 022034 • Opened Feb 1955 • Still Open • Latitude: -34.9524° • Longitude: 138.5204° • Elevation 2m
An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



Figures 1 & 2 source: Bureau of Meteorology, 2016, <http://www.bom.gov.au/>

As wind approaches a building or a group of buildings, it gradually diverges. Two of its diverging flows associated to the context in this assessment are its downward flow which causes a ground vortex in front and at the base of its windward wall before leaking to the sides of the building and the diverging flow around and then possibly through gaps between adjacent buildings.

Table 1 below specifies gust wind speed limits related to public amenity to various degrees of experience. The areas surrounding the site are considered to have the following pedestrian activity, which are in turn referenced to activities in table 1;

- North – high pedestrian activity – sitting, strolling – outdoor restaurants, shops.
- East & West – moderate pedestrian activity – walking, walking rapidly – entrance areas, footpaths.
- South – low pedestrian activity - walking



Table 1

PEDESTRIAN AREA WIND LIMITS –Km/hour					
Activity	Application	Wind Speed (Average) Experience			
		Pleasant	Unpleasant	Annoying	Dangerous
Sitting	Outdoor restaurants	6	12	20	65
Strolling & Sitting	Plaza area, shops	9	16	25	65
Walking	Entrance areas	16	25	35	65
Walking Rapidly	Footpaths	25	35	50	65

The above table demonstrates that the wind effects are less critical for this development to the East, West and South with a limit for unpleasant activity of 16/25 km/h generally. However it is critical to the North with a limit for unpleasant activity of 25/35 km/h.

WIND EFFECTS – SITE SPECIFIC ASSESSMENT

Morning wind from North and Northeast.

The lower portion of the proposed building is well shielded by the 1 – 2 storey buildings along The Parade. Wind striking the exposed upper windward portion of the building will be channeled around the building with a portion of these winds deflecting downward to adjoining building roof and / or ground level.

The side channeled winds are not considered to be of significant effect as there are no similar height buildings. Wind tunneling may have some minor affect within the development itself with wind channeled between the gaps between apartment and townhouses. Due to limited pedestrian activity at third floor level landscape area this effect also considered to have minor effect.

Downward deflected winds are also not considered significant in this case because there is limited pedestrian activity directly adjoining the site ('The Parade' is well setback and will not be affected by these downward deflected winds) and building massing (proximity of other buildings) means that some of this wind will be not reach ground level but be diverted at the adjacent buildings roof level.

It is considered that, wind from the North and Northeast will have negligible impact on the pedestrian areas external to the site and a minor impact to any proposed pedestrian activity within the landscaped plaza area at level 3.

Afternoon wind from the Southwest.

The proposed building is generally fully exposed to wind from this direction, there is however some partial shielding provided to the lower level by one to two storey buildings / trees. As above wind striking the exposed windward face will be diverted around the building with a portion of these winds deflecting downward.

Downward deflected winds are not considered significant to the pedestrian street activity (again streets are well setback from main building bulk). Again side channeled winds may have some minor wind tunneling affect within the development itself with wind channeled in narrow gaps between townhouses, but no affect external to the site.



It is considered that, wind from the Southwest will have negligible impact on the pedestrian areas along The Parade, George and Edward Streets, whilst it will have a minor/moderate impact on any proposed pedestrian activity within and around third floor landscaped plaza area.

SUMMARY

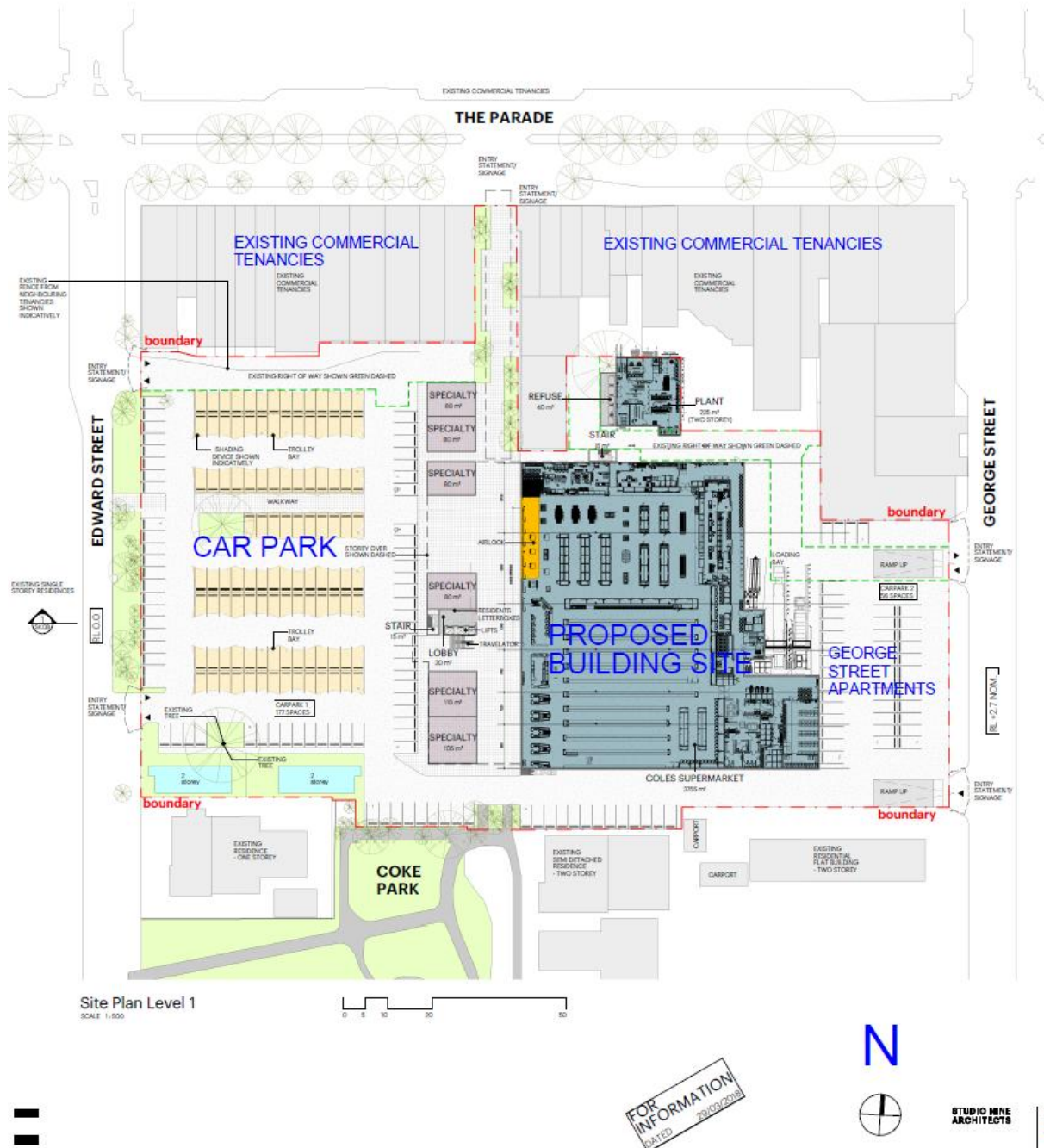
The proposed development site is well setback from the core pedestrian area to North with the main pedestrian activity considered to be people sitting & strolling along 'The Parade'. The development is also well setback from the moderate pedestrian activity areas along George and Edward Streets.

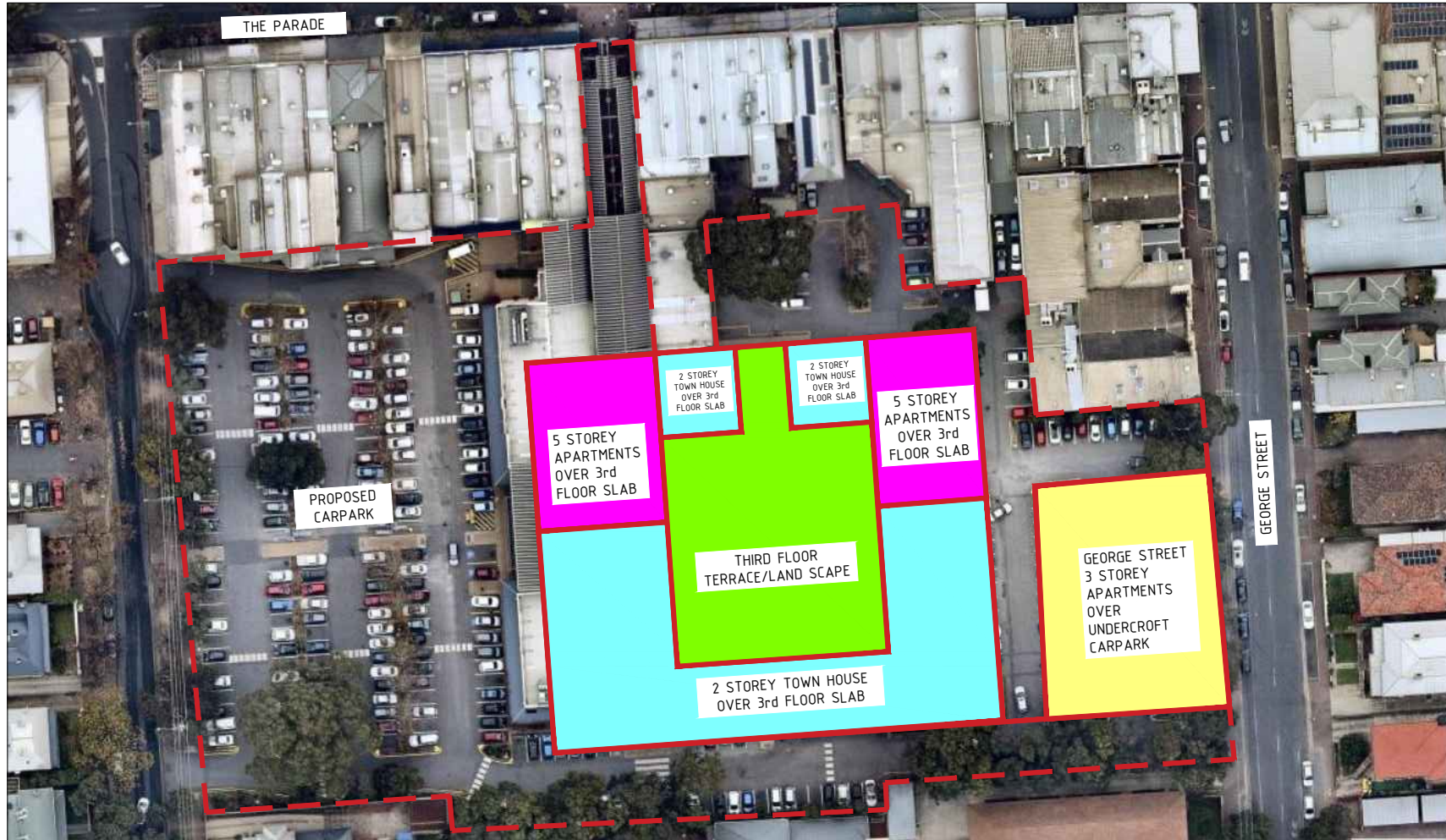
The proposed building form is varied in height and generally steps up from the external edges of the site (building height maximums are within the center area of the site with lower building heights around the edges), which limits the potential for down drafts around the site edges and wind tunneling between any buildings external to the site

Wind impact from the proposed building is assessed as negligible to pedestrian traffic on all three streets: The Parade, George and Edward Streets, with potentially only some a minor/moderate impact on proposed pedestrian traffic activity around the third floor landscaped plaza area within the development itself.

Given the above the development is assessed as having an overall negligible/minor impact on pedestrian activity around the site. Depending on the proposed pedestrian activity at the level plaza area consideration may wish to be given in the future to the type of landscaping and covering areas with canopy structures to improve amenity.

Figure 3





SITE PLAN
NTS

PRELIMINARY

No.	REVISION	DRAWN	CHECKED	DATE

SITE

PROPOSED COLES MIXED DEVELOPMENT
AT: 166 THE PARADE
NORWOOD, SA 5067
FOR: AUSTRALIAN PROPERTY DEVELOPEMMENTS

Civil - Structural
Environmental - Geotechnical
Mechanical - Electrical
Fire - Hydraulics
Lifts - Green ESD

Level 6, 100 Pirie Street
Adelaide SA 5000
Telephone 08 8238 4100
Facsimile 08 8410 1405
Berri Office: 25 Vaughan Terrace,
Berri SA 5343



TITLE
SITE PLAN

SCALES	NTS
DRAWN	RPA
DATE	JULY '19
ENGINEER	RR

JOB No.
1902045

DWG. No.
SD1/PC



DDA RAMPS TO BE
CONSTRUCTED SIMILAR TO
EXISTING



EXISTING TREES + VERGE
PLANTING TO REMAIN



NEW TREES IN RAISED
KERB SURROUND WITH
PERMEABLE PAVER COVER
TO STRUCTURAL SOIL TREE
PIT - 1200MM SQ MIN.

NEW AMENITY PLANTING -
TO BAY SEPARATIONS +
BOUNDARY PLANTING

COVERED AT GRADE
PEDESTRIAN LINK TO THE
PARADE PAC FROM COKE PARK



ENLARGED GARDEN BED TO
RETAINED MATURE TREES
PROMOTING HEALTHY
GROWTH
INDICATIVE CAR PARK
LAYOUT ONLY

TRAFFICABLE PAVING TO
LOCAL PEDESTRIAN ACCESS
ROUTE WITH GREEN
SCREENING TO BUILDING
FACADE + SEATING

REFER TO PODIUM
LANDSCAPE PLAN ON
LANDSCAPE CONCEPTS :
SHEET 2

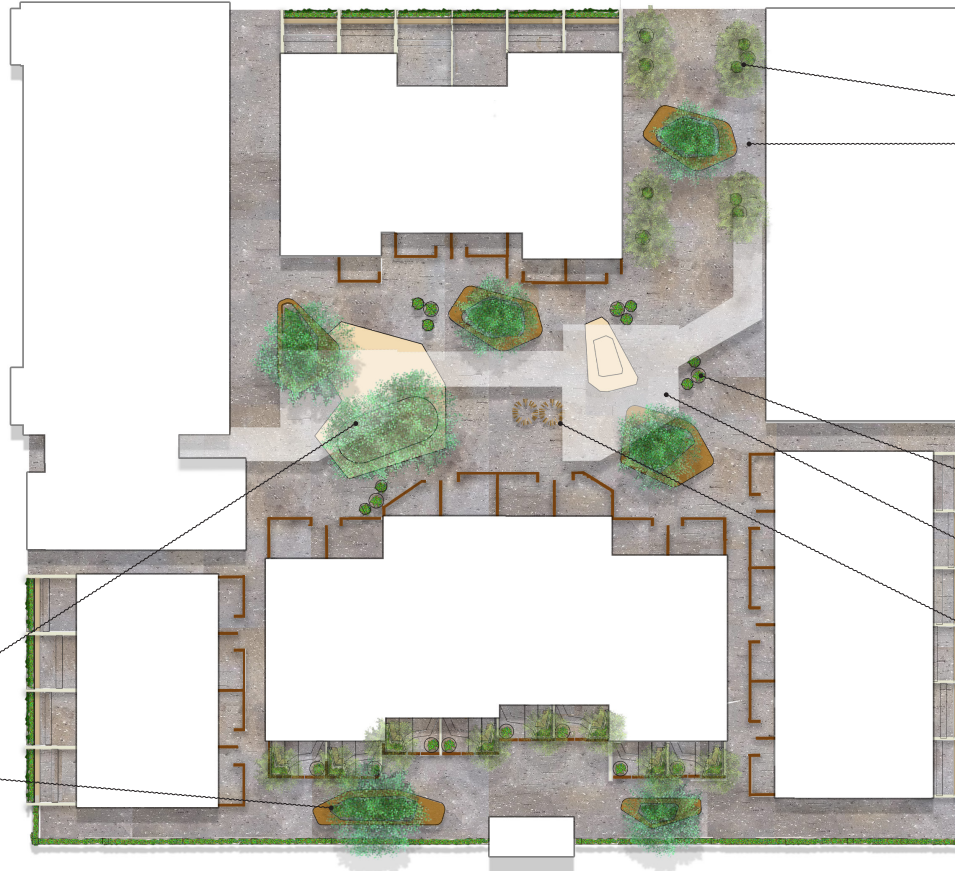


BESPOKE CONCRETE
PLANTERS ARRANGED IN
LINE WITH TOWNHOUSE
BOUNDARIES WITH TENSION
CABLING STRUCTURE TO
ALLOW CLIMBING PLANTS
TO GREEN BUILDING
FACADE + DRIVE PERGOLA

NEW STREET PLANTING TO VERGE



OVERALL LANDSCAPE PLAN N
NTS



AVENUE OF FRUIT TREE PLANTING
IN LARGE POTS

FEATURE UNIT PAVING PATTERN



GROUPED POTS WITH
A VARIETY OF HEIGHT,
COLOUR + TEXTURAL
PLANTING INSTALLED
FOR VERTICAL ACCENT +
INCREASED GREENING

PERGOLA COVERED
WALKWAY - STRUCTURE
TO MIMIC LOWER LEVELS
(BY STUDIO 9)

FEATURE TIMBER
FACADE TO REFLECT
PERGOLA STRUCTURE
FORM CREATING A
SCREEN TO BUILDING
EXHAUST VENTS (BY
STUDIO 9)

RAISED TIMBER EDGE
PLANTER WITH STEEL
FRAMES AT 5M SPACING
FOR CLIMBING PLANTS
'SOFT EDGE' CREATED BY
TRAILING PLANTS

SUGGESTED SPECIES LIST (ENTIRE SITE)

GROUND LEVEL TREES
Gleditsia tricanthos
Tristanopsis laurina
E. leucosylon 'Rosea'
Lagerstroemia indica
Malus sp. (suggested: 'Gorgeous' if available)

**SCREENING, COURTYARD, POTTED +
PODIUM TREES**
Magnolia grandiflora
Acer palmatum dissectum atropurpureum
Syzygium australe 'Straight and Narrow'
Ficus benjamina
Citrus limon
Citrus japonica
Pittosporum tenuifolium
*Prunus cerasifera 'Oakville Crimson Spire' +
'Nigra'*

CLIMBERS
Wisteria chinensis
Parthenocissus tricuspidata
Pandora pandorana

AMENITY PLANTS
Anigozanthus Amber Velvet
Bracteantha bracteata
Erigeron karvinskianus
Limonium Perezzi 'Blue'
Lomandra longifolia 'Nyalia'
Argyranthemum frutescens
Dianella 'Little Jess'
Westringia hybrid 'Naringa'
Correa alba
Hardenbergia violacea 'Meema'
Callistemon viminalis 'Green John'
Scaevola humilis 'Purple Fusion'
Myoporum parvifolium 'Yareena'
Rhagodia spinescens 'Aussie Flat Bush'
Pennisetum alopecuroides 'Nafra'
Rosmarinus officinalis
Lavandula pedunculata 'Winter Lace'
Lavender 'Avonview'
Salvia leucantha 'Santa Barbara'
Zamioculcus zamiifolia



PODIUM LANDSCAPE PLAN
NTS



AVENUE EFFECT CREATED BY STREET TREE
PLANTING AND TOWNHOUSE COURTYARD
VEGETATION

NEW STREET TREE PLANTING TO GEORGE STREET
(BY COUNCIL)

LAYERED PLANTING EFFECT CREATED BY
CASCADING + UPRIGHT SHRUBS AND LARGE
POTTED TREES AT 3M HEIGHTS. THIS WILL
COMPLIMENT FINE GRAIN FACADE TREATMENTS
AND FRAME THESE PRIVATE OPEN SPACES
WHILST LENDING LANDSCAPE TO THE ADJACENT
STREETSCAPE ENVIRONMENT

FOOTPATH LINK TO PARADE + WILLIAM STREET



GEORGE STREET LANDSCAPE SECTION
NTS

NATURE PLAY AREA WITH
BALANCING ELEMENTS TO BE
SELECTED DURING DETAILED DESIGN

BESPOKE RAISED TIMBER + STEEL
PLANTERS WITH INTEGRATED
SEATING + BACKRESTS WITH 800MM
SOIL DEPTH FOR TREE + AMENITY
PLANTING

GROUPED POTS WITH A VARIETY
OF HEIGHT, COLOUR + TEXTUREAL
PLANTING



PORTIONALLY UNCOVER
SCULPTURAL PLAYSACE WITH
TREE PLANTING IN MOUNDING.
PLAYSPACE ELEMENTS TO BE
CONFIRMED IN DETAILED DESIGN.

PODIUM LANDSCAPE SECTION
NTS

File No:
2019/11508/01

2 December 2019

Ref No:
14778695

Will Gormly
Senior Planning Officer – City & Inner Metro Development Assessment
Planning and Land Use Services
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
Adelaide SA 5000

will.gormly@sa.gov.au

For the attention of the State Commission Assessment Panel

Coles Norwood Mixed Use Development

Further to the referral 155/M011/19 received 23 October 2019 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 following comments informed by the Design Review process for your consideration.

The proposal was presented to the Design Review panel on two occasions, over which period the design response progressed. A pre-lodgement agreement was not reached in advance of lodgement.

In principle, I strongly support the redevelopment of this key site in the retail and high street precinct of Norwood. I also strongly support the project ambition to deliver a successful retail destination supported by a high quality public realm outcome. The project site presents a rare opportunity due to its location and size. As such, I am of the opinion that any redevelopment of this site has a responsibility to deliver a high benchmark for design. I also note that the integration of a large format retail proposal with residential and other uses is yet to be tested in South Australia. I acknowledge and support a number of changes made to the scheme in response to the issues raised during the Design Review process. However, I am of the view that the project brief falls short of optimising opportunities to deliver significantly improved user experience beyond what is offered by the existing development.

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The subject site is on the southern side of The Parade, at the centre of the main retail precinct. The site spans between Edward Street to the west and George Street to the east. The site abuts a row of single and double storey retail tenancies fronting The Parade. The western half of the site is currently utilised as an at-grade public car parking area. The eastern half of the site includes the Coles supermarket, separate specialty shops and the associated at-grade car parking fronting George Street. At the centre of the site, an open mall provides a pedestrian connection and links the site to The Parade to the north and to Coke Street to the south. Along the southern boundary of the site, an internal driveway connects Edward and George Streets. Mature trees exist along the southern boundary to soften the interface condition with the adjoining residential properties to the south. The project site also



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abuts Coke Park (a public park with a playground). The topography of the site includes an approximately two metre fall from the highest point at the southeast corner to the northwest corner. The fall is most significant along the eastern boundary.

The proposal maintains the western half of the site as publicly accessible at-grade car parking. The new built form includes the main building at the centre of the site, with a large supermarket tenancy and a number of specialty tenancy buildings on the ground floor. A separate two storey commercial tenancy is proposed to the north of the main building. A three storey apartment building is located on George Street. Between the supermarket tenancy and the specialty shop tenancies, an enclosed pedestrian mall is proposed to replace the existing mall and maintains the through site north-south pedestrian link between The Parade and Coke Street. The main supermarket building includes commercial tenancies on the first floor and two levels of car parking spaces above the ground floor supermarket tenancy, forming a three storey podium. At the top of the podium, two apartment buildings and five clusters of townhouses are proposed around a central communal open space.

I strongly support the proposed mix of uses, including the incorporation of residential use. In my opinion, the increased population will positively contribute to the activation of the high street and the retail precinct. While I am encouraged by the opportunities offered by the mix of uses, I acknowledge the added complexity it presents. I acknowledge and support a number of changes made during the Design Review process to improve the connectivity and linkage through the overall site. I strongly encourage the project team to continue to explore opportunities for the delivery of high quality user experience for the public and residents, as the design of the public realm areas is further developed during the next stages of the project delivery.

With the exception of the new residential use, it is noted that the proposed site configuration at the ground level is generally consistent with the existing conditions, with the central mall providing the main through-site pedestrian connection. Above the ground floor, the floor plates of the new main building extend westward over the speciality shops, fully enclosing the southern half of the pedestrian mall. The northern most speciality shop tenancy has been reconfigured from single storey to double storey to reduce the building footprint and created more generous public plaza, which I support. The new feature canopy with a large woven pattern extends the length of the pedestrian mall. A glazed roof is proposed above the feature canopy for the northern half of the mall to provide weather protection. The mall is open at the north and south ends. In principle, I support the intent of the canopy design to maintain visual permeability. I also acknowledge and support the use of the woven pattern as an integrated wayfinding element and its potential to contribute to the unique development identity. I support the increased height of the canopy at its northern end, lifting it above the adjoining buildings fronting The Parade. In my opinion, the elevated canopy improves the sense of entry to the new retail and commercial offerings at the main street interface. I am also of the view that revealing the entire corners of The Parade shopfronts improves the prominence of the Local heritage listed buildings. I recommend consideration of extending the canopy over The Parade footpath to provide continuous weather protection for pedestrians. Regarding the pedestrian mall and plaza area, I recommend further development of the ground treatment during the next phase of design development, with the view to delivering a simple and refined outcome with a clearer hierarchy and emphasising the retail tenancies and the feature canopy

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element. I support the rationalisation of the retail tenancy layouts to prioritise the activated shop frontages.

Along the north and south of the main building, less formal pedestrian paths are proposed to provide east-west linkages to George Street. The northern path is proposed along the main building podium and travels under the pedestrian walkway bridges connecting the lift and egress stair core and the main building. The southern link is a narrow footpath to a dual lane driveway. I remain of the view that the general strategy for pedestrian linkages warrants further review. In particular, I am concerned by the four storey tall service core located within the area to the north of the main building, and strongly recommend the exploration of opportunities to develop this area as a high quality public plaza that maximises the amenity afforded by the established tree, in lieu of the car parking and back of house uses currently proposed. In my opinion, high quality publicly accessible open spaces and through-site connections, informed by the established fine grain character of The Parade, will significantly contribute towards the success of the overall development and the wider retail precinct of Norwood.

I acknowledge the provision of the alfresco area to the south of the speciality shop tenancy with the intent to improve activation towards Coke Park. However in my opinion, the separation of the alfresco area from the park by a dual driveway and car parking spaces does not provide an optimum outcome in terms of pedestrian safety and user amenity. I recommend further exploration of opportunities to redistribute the car parking spaces along the southern boundary and locate a tenancy directly adjacent Coke Park, with the view to capitalising on the unique park setting. In addition, I recommend the design development of the double fronted speciality shop layouts, informed by back of house and operational requirements, with the view to maximise genuinely active frontages.

The main building includes an approximately 14 metre tall podium form, set back from all boundaries. Above the podium, two five-storey apartment buildings are proposed on the northeast and northwest corners, resulting in the overall building height of approximately 32 metres (eight storeys) in parts. Two storey townhouses are proposed at the perimeter of the podium around the central landscaped communal space. In principle, I support the overall height and massing approach. While I acknowledge that the proposed height in parts exceeds the maximum building height of seven storeys envisaged by the Development Plan, I am of the view that the concentration of the large scale building elements to the north of the site successfully mitigates the impact of over height elements to the adjoining residential properties to the south.

To the north of the main building podium, a separate four storey built form contains the lift and egress stair core, connected to the podium by three walkway bridges. This element was previously attached to the main podium form, protruding into the east-west pedestrian path along the north of the podium. I acknowledge that the relocation improves the pedestrian amenity and safety. I also acknowledge that the service core in the previous location had closed off the northern aspect of the communal open space at the top of the podium. However, I am concerned by the provision of this substantial and solid built form within the public realm. In my opinion, the services core should be accommodated within the main podium form to minimise its impact on the public realm.

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Along the eastern site boundary, a three storey apartment building with nine dwellings is proposed to front George Street. The ground floor level of the George Street apartment building is elevated approximately one metre above the street level to accommodate basement car parking below. The rear of the apartment building on levels one and two is separated from the main building podium by approximately eight metres. On the ground floor the rear building setback is increased to accommodate the at-grade car parking. I support the provision of a three storey built form along the George Street boundary, however I am yet to be convinced that the proposed built form composition convincingly reflects the apartment typology. I am also concerned by the treatment of the basement protrusion at the south east corner. While I strongly support the inclusion of an accessible apartment option, I recommend review of the George Street interface treatment, including integration of the access ramp, informed by the established residential built form pattern and fine grain character of the locality. In addition, I am concerned by the open driveway to the north of the apartment building, including a freestanding transformer on the George Street frontage. In my opinion, the visual and amenity impact of the service and loading requirements needs to be strategically managed to mitigate detrimental outcomes for the residents and the public. To that end, I recommend screening of the northern driveway on George Street to optimise presentation to the public realm and provide a consistent streetscape composition.

I support the proposed internal layouts of the George Street apartments on the first and second floors, which in my opinion provide a rational and efficient outcome. However I am yet to be convinced by the internal layout of the ground floor apartments, in particular the southern accessible apartment. While I strongly support the provision of an accessible residential offering, the floor area size constraints and the limited aspect have resulted in compromised residential amenity. I recommend holistic review of the ground floor arrangement, including the number of at-grade car parking spaces, to ensure the envisaged high level residential amenity for all dwellings.

40 apartments, four penthouses and 24 townhouses are proposed on top of the main building podium, forming a new residential community. I support the mix of residential accommodation types offered. Acknowledging the challenges presented by the height of the podium and the insertion of the above ground car parking levels separating the residents from the street level, I support the configuration and expression of the residential entrance on the ground floor that provides a sense of address and arrival. I recommend continued exploration of opportunities to further improve the connection with the ground level and the surrounding community during the next phases of the design development.

A large communal open space is proposed on top of the main building podium to provide an outdoor amenity space for residents. The surrounding residential buildings are configured with the intent to ensure solar access to the open space and provide an open vista to the north, which I support. The proposed landscape elements include a pergola covered walkway linking the two apartment buildings, a soft play area, raised planters, seating and feature pattern paving. I recognise the potential for an integrated communal open space, however I note potential Crime Prevention through Environmental Design (CPTED) issues, particularly around the narrow sections between and behind buildings. To that end, I support the provision of living areas of select townhouses presenting to the central open space with the view to improving passive surveillance. I strongly support the introduction of the

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soft landscaping and play areas, and recommend further development of the communal open space to ensure delivery of the envisaged outcome that is consistent with the precedent images provided. The design details should include planting selection, material palette and confirmation of design elements for the play area, with the view to prioritising user amenity and strengthening a bold and coherent spatial composition. In my view, a fencing strategy should also be considered to achieve an optimum balance between visual permeability and an appropriate sense of enclosure for townhouse residents. The maintenance strategy should also be demonstrated to optimise the long term success of the landscape elements. I also request the provision of a sample board of the selected materials and finishes for the communal open space.

Within the main podium form, single level office and medical centre tenancies are proposed along the western elevation to sleeve the above ground car parking. I acknowledge a high number of on-site car parking requirements, and support the provision of active use spaces to sleeve the car parking on the most visually prominent elevation. I also acknowledge that the depths of the commercial tenancies have been significantly reduced to increase the car parking numbers, aligned with the existing encumbrance for the site. I defer my comments regarding the car parking numbers to the relevant authorities and specialist consultants.

I support the proposed use of high quality fine grain materials for the George Street apartment building. I also acknowledge the intent for the architectural expression to reflect the established residential context of George Street. However I am yet to be convinced by the treatment of the front courtyards and the interface between the raised ground floor and the footpath. I recommend review of the front courtyards and the access ramp arrangement to improve the integration of the raised plinth with the view to minimising the physical and visual barrier from the public realm.

For the main building, I support the general approach to provide highly articulated lightweight structures for the residential elements above the podium. I acknowledge the intent to express the separate uses within the podium form through the use of different facade treatments, and provide the visual breakdown of bulk and scale of the base element. I also acknowledge the colour change of the screening to the car parking levels to reduce visual prominence. In my opinion, further opportunities exist to simplify the podium expression, with the view to emphasising the podium as a singular element, while maintaining the fine grain character at the ground level. I support the design intent to provide a high level of articulation for the apartment buildings above the podium. I also support the revised material tone of the townhouse buildings to achieve a coherent material palette for the overall development. In my view, an opportunity exists to reduce the number and variety of architectural elements of the apartment buildings to further refine the facade composition and achieve greater contrast with the podium element. I request the provision of a sample board of the selected materials and finishes of the external elements that clearly indicates the design intent.

The proposal includes new shade structures to the main at-grade car parking area to the western half of the site. I support the integrated approach for the bespoke shelters. I encourage continuing design development of the shelters during the next phases of the project delivery to resolve structural and technical requirements ensuring the envisaged visual outcome for slender structure.

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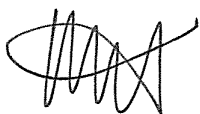
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To ensure the most successful design outcome is achieved the State Commission Assessment Panel may like to consider particular aspects of the project, which would benefit from protection as part of the planning permission, such as:

- Extension of the canopy over The Parade footpath to provide continuous weather protection for pedestrians.
- Review of the area north of the main building, with the view to develop this area as a high quality public plaza, including the relocation of the service core to be integrated within the main podium form.
- Development of the double fronted speciality shop layouts, informed by back of house and operational requirements.
- Review of the interface treatment along George Street to better integrate the one metre basement protrusion.
- Screening of the northern driveway on George Street to optimise presentation to the public realm and provide a consistent streetscape composition.
- Review of the ground floor arrangement of the George Street apartment building, including the number of at-grade car parking spaces, to improve residential amenity.
- Resolution of further design details of the communal open space at the top of the main building podium, including planting selection, material palette, design elements for the play area and the fencing strategy.
- Development of the maintenance strategy to ensure the long term success of the landscape elements.
- A high quality of external materials for building and outdoor spaces, supported by the provision of a materials and finishes samples board.

Yours sincerely



Kirsteen Mackay
South Australian Government Architect

Level 1
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cc Aya Shirai-Doull ODASA aya.shirai-doull@sa.gov.au

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Government
of South Australia



City of
Norwood
Payneham
& St Peters

27 November 2019

Will Gormly
A/Team Leader – City & Inner Metro Development Assessment
Planning and Land Use Services
Department of Planning, Transport and Infrastructure
GPO Box 1815, Adelaide SA 5001

by email: will.gormly@sa.gov.au

Dear Will,

I refer to Development Application Number 155/M011/19, which has been referred to the Council for comment, pursuant to clause 2.1 of the Heads of Agreement between the Department of Planning, Transport & Infrastructure and the Council, dated February 2014.

Consistent with Clause 2.3 of the Heads of Agreement, the following Council response:

"will not include a full planning assessment of the application, but may include comments on any local strategic issue, policies or plans. This may include comments on proposed policy amendments, planned public realm improvements, traffic management, waste services, encroachments, local heritage issues or the like for consideration by DAC. Council may also make brief written observations in relation to planning assessment matters from a local perspective, to highlight key issues that may require further analysis / assessment by DAC officers."

Traffic Management

The report by Cirqa states:

"With regard to the George Street and Edward Street roundabouts south of the site (both intersecting with William Street), the additional number of vehicle movements anticipated to use the respective intersection is forecast to be low during both the Thursday pm and Saturday peak hour periods. Taking this into account (and the increased capacity of roundabout in comparison to a regular priority-controlled four-way intersection), it is considered that the additional movements would be readily accommodated with minimal impact on the performance of the two roundabouts."

When the Council assessed a development application to redevelop the site in 2014, Frank Siow, Traffic Engineer, reviewed the application on behalf of Council and advised that conditions should be imposed to restrict the size of delivery and service vehicles leaving in a south direction, due to turning constraints at the intersections of George Street and William Street (roundabout) and Edward Street and William Street (roundabout). Ultimately, a condition was imposed by the Council, requiring a "No Right Turn" sign to be installed at the exit of the supermarket loading dock, adjacent to George Street, to prevent Semi-trailers from turning right out of the loading dock to George Street.

It does not appear that Cirqa have considered the turning constraints of the George Street/William Street and Edward Street/William Street roundabouts. The Council requests that SCAP ensures that this issue is adequately investigated and appropriate conditions imposed to prevent vehicles from using the roundabouts if the turning movements are problematic.

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Stormwater

There is Council owned drainage running through the mall from Coke Park to The Parade and another in the western carpark that runs to Edward Street. Discussions were held between Coles and the Council when the previous redevelopment was proposed in 2014, including negotiations over a public easement to reposition the existing Coke Street drainage system through the proposed site.

The Council has not yet been approached by the applicant regarding stormwater management for the proposed development. Whilst the Council does not anticipate there being any insurmountable problems with stormwater management, it would be good to understand the requirements and expectations early, particularly given the Council owns infrastructure through the site. In this respect, the Council requests that SCAP not make a determination on the application until such time as an in principal agreement with respect to stormwater management has been reached.

The 2014 development application was reviewed by the Council's Manager, Assets & Special Projects, who advised that the surface levels at the rear car park behind Uncle Alberts Cafe would cause overland flooding in a large rainfall event, affecting properties fronting The Parade in this vicinity. He recommended that a condition be imposed on any consent granted to ensure that the car parking areas at the rear of Uncle Alberts Cafe is designed to accommodate a minimum 1 in 20 year Average Recurrence Interval (ARI) standard peak flow on the subject land. The Council requests that SCAP ensures that this issue is adequately investigated and appropriate conditions imposed to prevent flooding of properties fronting The Parade.

Encumbrance

An encumbrance is registered to the Certificates of Title for the subject land in favour of the Council, which requires that all future additions to the shopping centre maintain 268 publically accessible on-site car parking spaces. In addition, the encumbrance requires that any additions to the shopping centre shall provide on-site car parking at the rate of seven (7) spaces for every 100 square metres of additional floor space resulting from the development. The application of the car parking provision requirements contained in the Encumbrance would mean that the proposed development could not be implemented. In August 2019, the Applicant sought to have the car parking requirements of the Encumbrance relaxed, to enable the Application to proceed.

At its meeting held on 7 October 2019, the Council determined to endorse amendments to the relevant clause of the Encumbrance to read as follows:

"In the event that the Encumbrancer desires to redevelop the said Land the Encumbrancer shall be obliged to provide in respect of each additional square metre of gross leasable floor area comprised in such redevelopment over and above the gross leasable floor area comprising the development situated upon the Encumbrancer's Land as at the Settlement Date (which such area is hereby deemed to be 2717m² square metres) such additional number of car parking spaces over and above the number of car parking spaces situated upon the Additional Land as at the Settlement Date (being 268) in accordance with a ratio of three (3) car parking spaces per 100 square metres of such additional gross leasable floor area."

The proposal was subsequently amended prior to lodgement of Development Application Number 155/M011/19 and it now accords with the encumbrance.

That said, the car parking layout has been reviewed by the Tonkin Engineers, who have observed the following:

1. The staff parking area on the south-eastern side of the site consists of one continuous blind aisle. Although this is not non-compliant, a person parking in this area would not be able to see if there is an available park until they have almost reached the end of the blind aisle. This is not ideal as it forces a vehicle to reverse out. There is a turning bay provided at the south-eastern extent of the parking area, however this should be line marked with chevrons to define it as a turning bay. No linemarking of this bay is shown on the drawings.
2. The resident parking is a long blind aisle. As with (1) this is not non-compliant, however it is not ideal. There isn't an official turning bay, however there is room provided by the geometry of the carpark to turn a vehicle. If these spaces are allocated to each dwelling,

then there would be less of an issue as the residents should know if their park is available. The four parking spaces on the southern side of the carpark would be difficult to get into and out of. As shown on the mark-up, a three-point turn would be needed to either enter or exit these parks. This is not an ideal arrangement and would make it difficult to park in these spaces.

3. Parks are shown to have a width of 2.5m. Based on AS2890: Off-Street Parking, a user class of 3A applies which is applicable to shopping centre carpark. This requires parking bays to be 2.6-2.7m wide depending on the aisle width. A width of 2.5m does not comply unless it is signed as a small car park
4. The width of the carpark on the eastern side are shown to be large than the parks on the western side. Based on the plans it appears that the parks on the western side are 2.5m wide. As with (3) this doesn't comply unless they are signed as small car parks.
5. This is a blind aisle in a public section of the carpark. As it is open to the public, the maximum length of a blind aisle is 6 parking bays. This blind aisle is 9 parking bays long and so it does not comply unless a turning bay is provided. One of the end carpark should be linemarked with chevrons to signify that it is a turning bay and not a parking bay.
6. Four blind aisles with lengths up to 12 parking bays. This is resident parking and so it is not non-compliant, however as mentioned it is not ideal. If the parks are assigned to each dwelling, then this is not as much of an issue as it is to each dwelling to manage their parking space
7. Tandem parking bays are not ideal given the front car cannot leave unless the rear space is vacant. This arrangement is not recommended.
8. Secure bike parking provided on the second level. It is assumed that lift 3 is large enough to allow for a person with a bike. It is assumed that this lift will be used and that cyclists are not required to ride up the carpark ramp, which would be difficult and could result in cyclists/vehicle conflict. This bike parking is likely to be used by residents who are required to travel to level 2 or higher, however they are not likely to be used by shoppers. Shoppers are unlikely to travel to level 2 to park their bike and then travel back down to level 1/ground floor. As such this location is not ideal for shopper bike parking if that is the intent.
9. We have generally assessed the number of driveways for the number of car parks, noting that different parking areas service different users.
10. It is assumed that most of the parking spaces in carpark 1 will be serviced by this access. As the access services more than 101 parking spaces with a user class of 3A (corresponding to a shopping centre), the entry and exit must be split (ie separated by a median), not combined as shown. It is assumed that the remainder of the parks on level 1 and 2 will be serviced by the other two main entries (the southernmost entries on Edward Street and George Street). It is assumed that there will be an even use of both entries and so a combined entry/exit may be appropriate. This is just at the threshold level and so depending on the actual usage of each access, one of these may need to be a separated entry/exit.

The Council requests that the SCAP considers the advice contained in points 1 to 10 above and that any subsequent amendments ensure that the proposal continues to comply with the agreed changes to the car parking Encumbrance.

Local Heritage Issues

There are no buildings of any heritage significance located on the subject land. However, there are several Local Heritage Places located adjacent or nearby to the subject land. A summary of the adjacent Local Heritage Places, including their location and description as set out in Table NPSP/6 of the Development Plan, is provided below:

140-144 The Parade	1920's brick two-storey shop
160-166 The Parade	Row of Victorian shops
168-178 The Parade	Row of Victorian shops
186 The Parade	Victorian shop
188 The Parade	Victorian/Federation masonry dwelling and
65 Edward Street	Late Victorian Sandstone Villa

80 Edward Street	Mid-Victorian Bluestone Villa
55 George Street	Victorian Gothic Citadel (Salvation Army)

The proposed development has potential to impact on three (3) main areas, George Street, Edward Street and The Parade;

- George Street – the proposed development is set back from George Street and is separated from the adjacent Salvation Army Citadel by a right of way and driveway, allowing this interesting building the prominence it deserves;
- Edward Street – the Local Heritage Place with the closest proximity to the proposed development in the Victorian Villa at 80 Edward Street. The Applicant has proposed a car park entry adjacent to this boundary, which means the nearest part of the proposed building is set well back from the street. The impact on the adjacent heritage place at 80 Edward Street is relatively minimal due to this setback;
- The Parade – the only real visual impact of the proposed development on The Parade is the proposed entry canopy. The row of Victorian shops on either side of the proposed entry canopy are Local Heritage Places. The proposed canopy is described in the plans as a polycarbonate canopy structure and has posts set just away from the two (2) adjacent Local Heritage Places. The height of the canopy is taller than both adjacent canopies. In general, the canopy concept is appropriate, it is minimal, obviously new and while higher than the other canopies, it does signify the entry to a mall area, so should be different to a shop front canopy. The only concerns are the distance of the proposed canopy posts from the side walls of the Local Heritage Places. Both adjacent buildings have projecting cornices and strip courses as part of their detailed parapet wall design, as well as some form of base plinth (which return around the side of the buildings, where the canopy posts are to be located). The posts need to be moved away from the side walls of the adjacent buildings until they are at least 50mm clear of the mouldings on each building.

Built Form Character and Setbacks

Concept Plan Fig DCe/1 shows that buildings within the height range of 3-7 storeys and up to 25.5 metres in height are anticipated for the subject land. The proposed residential towers are 31.8 metres tall to the roof. The additional 6.3 metres (2 storeys) in height is of some concern to the Council, as it results in a relatively imposing built form, as viewed from various vantage points along surrounding streets and residential properties. The relatively small footprint of the towers and their central location on the site reduces those impacts, however the scale remains inconsistent with what the Council envisaged for the area, as represented in the relevant Development Plan policy.

In respect to the proposed facade treatments, the proposal is considered to be generally consistent with the Desired Character Statement, which encourages cutting edge, contemporary building design, incorporating bold materials and shapes. That said, the Council defers to the expertise of the Government Architect in this respect.

Trees and Landscaping

The proposal includes the removal of eight Regulated Trees, as described in the report by Arborman. The following observations are made with respect to each of the eight trees.

Tree No. 3 This River She Oak is over 20 metres tall and in a prominent location adjacent Edward Street. It is currently located in a garden bed in the north-western corner of the car park. Arborman have recommended its removal “to support the proposed development”. Although the car park is proposed to be re-configured, a garden bed is proposed in the same location with the new configuration. Therefore, there appears to be no good reason for this well established and high amenity tree to be removed.

Tree No. 4 This Weeping Bottlebrush is multi-stemmed and has a low spreading canopy. It is likely to fail the qualitative tests in the Development Plan for trees which warrant retention.

Tree No.s 7, 8 and 9 These Argyle Apple's are located in positions which conflict with the proposed residential building facing George Street and driveway circulation areas behind. Arborman have advised that they each have poor form and/or structural issues.

Tree No. 10 This River Red Gum is in a position which conflicts with the northern extent of the proposed residential building facing George Street. It is a large specimen with a height exceeding 20 metres and spread exceeding 15 metres, in a prominent location adjacent to George Street. With a trunk circumference of 2.8m, it is almost of Significant Tree status. Arborists have not raised any issues with the tree, other than the fact that it is in conflict with the proposed development. Retention of this tree would likely require a significant reduction in the footprint of the residential building and car parking below. Given that the tree is not a Significant Tree, this is considered an unreasonable imposition.

Tree No. 12 This Jacaranda has a trunk exceeding 3m circumference and therefore has Significant Tree status. It is in a location which conflicts with the corner of the supermarket building. It is not a prominent tree within the local area, being located at the rear of the supermarket and behind buildings fronting George Street. For these reasons, modifications to the proposal to accommodate retention of the tree are not considered to be a reasonable imposition.

In summary, the Council considers that Tree No. 3 should be retained. No modifications to the proposal would be required, other than some tree protection measures during reconstruction of the car park. There is considered to be sufficient justification for the removal of all other Regulated Trees which are proposed to be removed.

The planning report by Masterplan states:

"Steel framed canopies will be installed above the southern and northern driveways close to George Street. These canopies will be planted with climbers to shade and soften the site's overall appearance from George Street. The canopies have been designed to allow unobstructed access for all expected vehicle user types.

The southern canopy will also compensate for the removal of trees along the site's southern boundary shared with the two-storey residential flat building immediately to the south. Provision has been made to landscape this boundary with trees and shrubs planted at close intervals to create a green edge at the residential interface."

The plans lack detail on the canopies and the landscaping along the southern boundary. The existing row of trees along the southern boundary, whilst not regulated, provides an important screening element for the adjacent units and prominent landscape element for the locality. It appears that the landscape bed proposed along this boundary is inadequate to support trees of any substance. The Council requests that the SCAP requires this landscape bed to be at least 1m in width and details be provided of replacement trees, or that existing trees be retained in this location.

The Council is also concerned with the lack of landscaping to the George Street frontage of the property. In the MasterPlan report, it is noted that it is the applicant's intent to soften the development through the planting of street trees in the Council verge. Whilst that can be accommodated (at the developers cost), the Council considers there should be increased landscaping provided along the George Street frontage to ensure a high quality streetscape aesthetic in this location.

I trust that this response is of assistance. Please do not hesitate to contact me on 8366 4567 if you require any clarification.

Yours sincerely



Mark Thomson
MANAGER, DEVELOPMENT ASSESSMENT

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2



Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: NATASHA KAY My phone number: 0417871364

Primary method(s) of contact: Email: njkay@bigpond.net.au
Postal Address: 112 Grant Ave Postcode: 5065
TOORAK GDNS

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- ☒ owner of local property
☐ occupier of local property
☒ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:

Rear 164 The Parade, Norwood. Postcode 5067

My interests are:
(please tick one)

- ☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

This property is trading as Healthy Life and they have contacted me as the landlord, that it will impact on their trade and want to know what type of rental relief I can offer them.

I: ☐ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☒ appearing personally
(please tick one) ☐ being represented by the following person
(Please tick one)

Signature:

Date:

NKAY
7.11.19

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: Matthew Ward (for R4 & VR Ward & J Robins) **My phone number:** 0428116023

Primary method(s) of contact: **Email:** ward_matt@yahoo.com.au
Postal Address: 21654 HILARY STREET **Postcode:** 5068
KENSINGTON SA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- ☒ owner of local property
☐ occupier of local property
☒ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:

182-184 The Parade Norwood

Postcode 5067

My interests are:
(please tick one)

- ☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

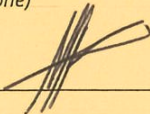
the denigration of the visual amenity, accessibility & commercial viability of the rear of 180-188 The Parade Norwood as a result of the location of refuse stations, frequent proposal use of large vehicles & isolating the eastern carpark for staff.

I: ☒ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☒ appearing personally
(please tick one) ☐ being represented by the following person
(Please tick one)

Signature:

Date:

19/11/19 

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: Peter Catinari My phone number: 0418852399

Primary method(s) of contact: Email: _____
Postal Address: 5 VERDEHLO COURT Postcode: 5061
ADLDANA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

☒ owner of local property
☐ occupier of local property
☐ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:
18 COKE STREET - NORWOOD Postcode _____

My interests are:
(please tick one)

☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are: PLEASE REFER TO
ATTACHED

I: ☐ wish to be heard in support of my submission
(please tick one) ☒ do not wish to be heard in support of my submission
(Please tick one)

By: ☐ appearing personally
(please tick one) ☐ being represented by the following person
(Please tick one)

Signature: [Signature]
Date: 20 NOV 2019

Re – Application for 166 The Parade Pty Ltd – 155/MO11/19

SCAP
Mr Will Gormly

20 November 2019

Dear Sir,

I would like to firstly confirm that I am in support of the development. It is well designed, provides fantastic amenity and it will be of benefit to the surrounding business's and community.

My only request is that my property is at the end of Coke street (18 Coke street – Norwood). We have examined the drawings and there are three transformers and a large stair 3 link wall proposed to be installed along our northern boundary. The design for these transformers is at an elevated level, and will collectively pose a visual, noisy and additionally shading issue for my home. The design at the proposed height, will essentially block all natural light and ventilation to our home and rear yard, as the proposed fence line is set at approx. 300mm below our roof eaves line – severely reducing our only natural light and ventilation.

The drawings in the report incorrectly show our home as two level, however it is only single at that location. I have highlighted the drawings showing the correct existing roof and building line. I have interpolated the drawings and enlarged the drawings and provided the correct line, that is also shown on the attached photo.

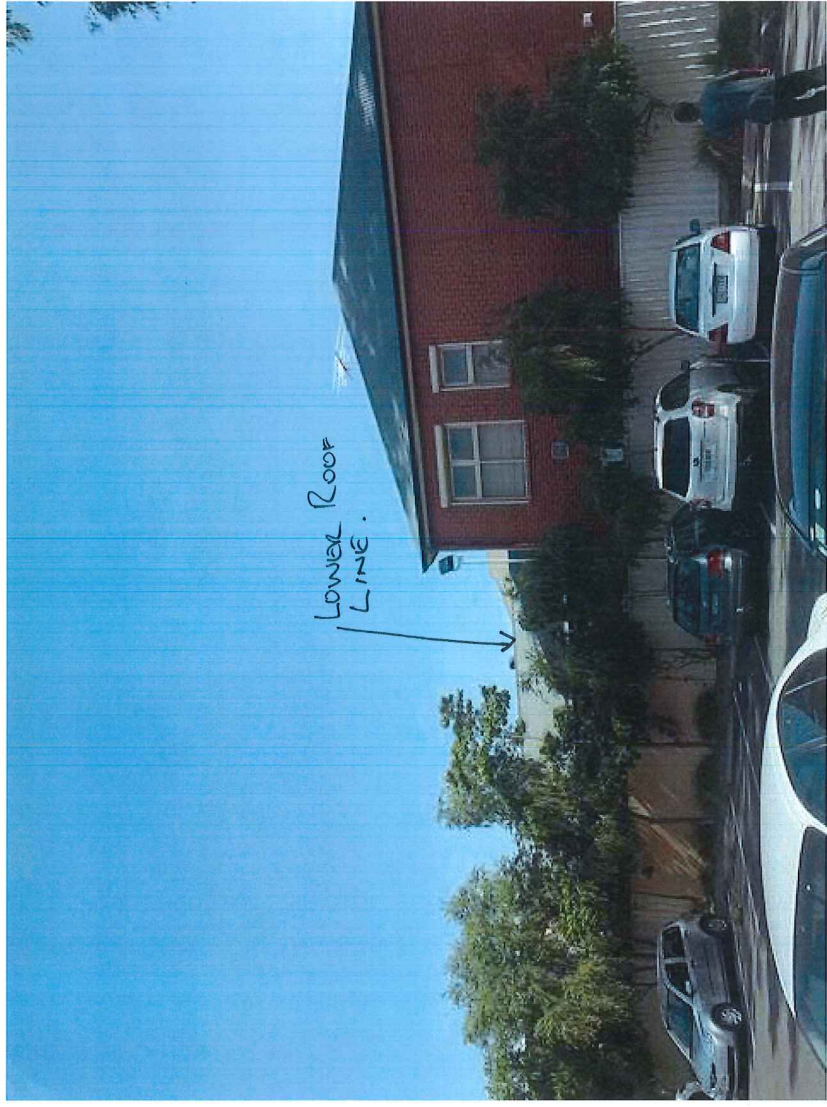
We request that the transformers be installed at the existing current ground level, minimising impact. There is no basement in that location, therefore will not be of any structural or design impediment. Additionally, to reduce the impact, the proposed new boundary fence is to be built as a solid finished (paint and render both sides) block wall that is also contained within the new developments site boundary. If the fence could be built to the top of the transformers finished height, as so they are visually concealed from our property. This wall will mitigate the visual impact and sound that emanates from the transformers and allow the current light and ventilation to be maintained.

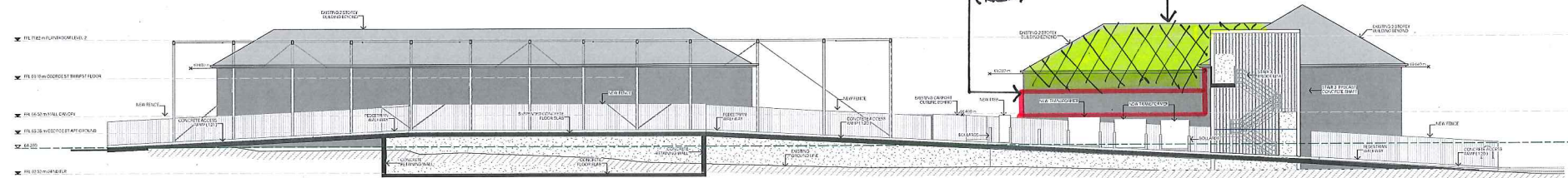
Look forward to your favourable consideration in relation to the above.

Your sincerely

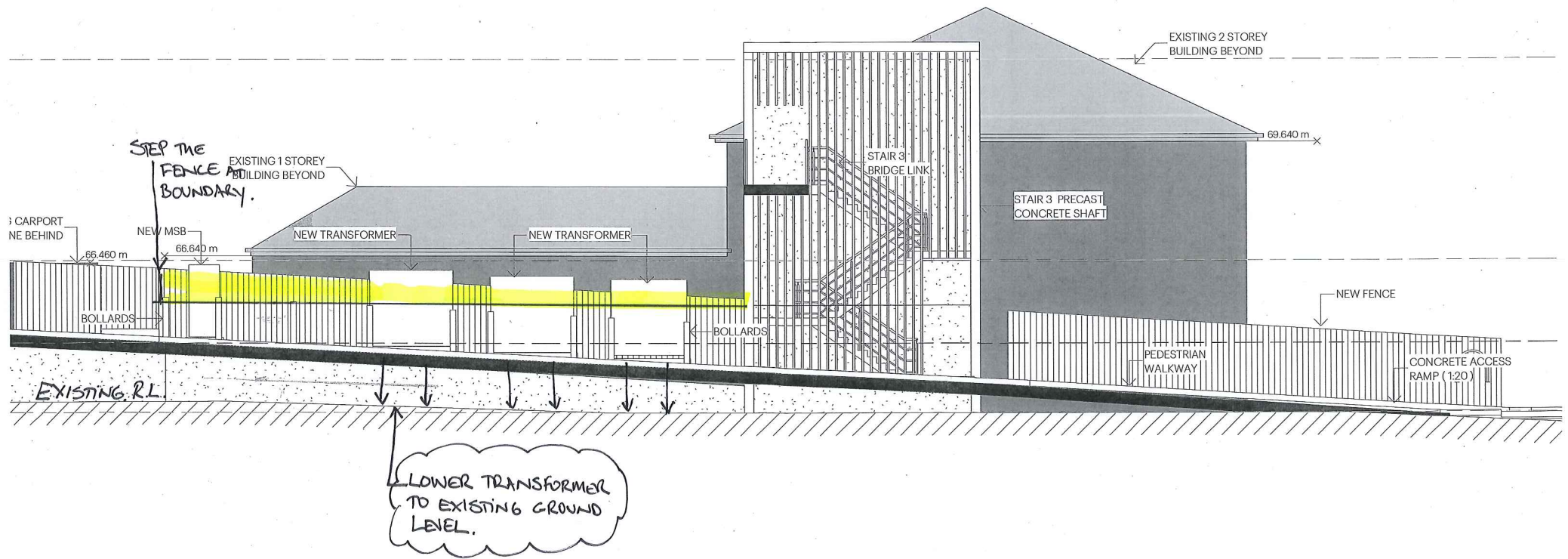
A handwritten signature in black ink, appearing to read 'Peter Catinari', with a stylized flourish at the end.

Peter Catinari





ELEVATION - SOUTH BOUNDARY



South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: JIM BAKOPANOS My phone number: 0418 803 858

VIKI BAKOPANOS

Primary method(s) of contact: Email: J.BAKOP@hotemail.com
Postal Address: PO BOX 3104 Postcode: 5067
NORWOOD SA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- ☒ owner of local property
☒ occupier of local property
☐ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:

80 EDWARD ST NORWOOD SA

Postcode 5067

My interests are:
(please tick one)

- ☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

LISTED NEXT 3
PAGES.

I: ☒ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☒ ~~appearing personally~~
(please tick one) ☒ being represented by the following person
(Please tick one)

PLANNING LAWYER (TBA)

Signature:

Date:

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapreps@sa.gov.au

as Power of Attorney

20/11/2019

Representation from

Estate /Trustee of N Bakopanos 80 Edward St Norwood SA 5067

Vicki Bakopanos 80 Edward St Norwood SA 5067

Jim Bakopanos , 80 Edward St Norwood SA 5067 Power Attorney over mother Vicki Bakopanos

Owners of property next to development – on Southern border

We make this submission and on behalf of ourselves and various residents residing within the vicinity of the proposed redevelopment of the Coles supermarket and associated shops located between Edward Street and George Street Norwood (Development Number 155/M011/19).

We support the development but wish to express the following concerns;

1. The height of the proposed residential towers is about 6.3m above the existing limits under the development plan for this precinct in Norwood. Any relaxation of these height rules will create a precedent which will likely see a continuing height creep in future developments which will detract from the scale and sense of a cohesive community so valued along the Parade.
2. There is an absence of a strategy to provide for temporary parking for Norwood shoppers and those accessing services in the area. The "Coles" car parks are well used 24 hours per day. There are major off street and on street parking problems in the Norwood parade precinct. It can be anticipated there will be a major change in parking and thus traffic flows and frustration during the construction period. A temporary car parking plan should be included in any development approval. The nearby residents are likely to have great difficulties in going about their daily lives. Parking across driveways and volumes of traffic in residential streets is already a major issue. Staff park all day in nearby streets and also commuters who work in the city.
3. The development documents the proposed increase in patronage of the new shopping centre and associated medical and office uses. Whilst the developer has provided a traffic study prepared for the developers purposes the NSP&P Council should be required to conduct an independent and broader traffic study of the impact of the proposed development which would allow the proposed development to take into account the broader traffic management issues and solutions.
4. The provision of car parks associated with the development do not seem to appear to accord with the established requirements for car parking for retail shopping centres in Norwood e.g. the requirements placed on the developers of the Norwood Place on the immediate opposite side of the Parade. The gross lettable area of the proposed development is 5319 square metres and there is provision of 347 public

20/11/19

2

J Bakopanos
PO Box 3104
NORWOOD SA 5067
Ph:

041 8 803 858

parking spaces There appears to be no provision made for visitors to the 77 residences proposed on the site.

5. The proposal to retain the historic heritage item the Cork tree located in the western carpark lacks a formal plan for its protection and nourishment during both the construction phase and afterwards. The plan as submitted by the developer does not sufficiently allow space to protect the tree and at least two car parks will need to be removed. The residents in the area who have fought to protect this tree seek a written agreement between the developer and the Council outlining how this tree will be protected and nourished and set out respective responsibilities. A detailed submission on the history, heritage and arborist report can be made available at short notice. These are well known to both the developer and the Council.
6. There are many well established plane trees in the existing car parks which provide shade and amenity. It is requested that these trees be retained where possible or re-established in the proposed realignment of the western car park.
7. We request that a site management plan be agreed with Council to protect local residents from trucks parking and banking up in residential streets, excessive noise, dust and disturbance, cleaning of streets and appropriate hours of operation.

Personal representation of the above and following topics

Landscaping along the border with 80 Edward St Norwood

No measures to reduce /minimise the regular current vehicle hooliganism / misbehaviour of youths. (Burn outs/ large groups making excessive noise/ fire crackers/ arson eg of Coke and townhouses on Coke St (that needed to be rebuilt) Park and – Norwood Police are aware of multiple civil disobedience matters on the site (car park)- the plan as is will allow this to continue.

Traffic calming measures.

Rubbish collected internally from George Street so that noise will be greatly reduced -agree

I/ my representative (planning lawyer) wish to be heard wish to be heard

Also, in our opinion, (having had local area knowledge since 1972) the retail part of the project will , like now, be a failure. It needs to be fully enclosed , airconditioned and locked up after the shops close- like a Westfield or the Parkade development across the road where the other supermarket is.

20/11/2019 J

J Bakopanos
PO Box 3104
NORWOOD SA 5067
Ph:

0418803858 2

Our Ref: 2019/14124/01

1 November 2019

N BAKOPANOS
80 EDWARD ST
NORWOOD SA 5067



Level 5, 50 Flinders Street
Adelaide SA 5000

GPO Box 1815
Adelaide SA 5001

Telephone: 08 7109 7060
ABN 92 366 288 135

<http://www.saplanningcommission.sa.gov.au/scap>

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Application Number: 155/M011/19
Proposed Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Subject Land: 166 The Parade, Norwood

As an adjoining owner/person potentially affected by the above development application, you are invited to view details of the application and make comment.

The application may be examined during business hours at the office of the State Commission Assessment Panel (SCAP), Level 5, 50 Flinders Street, Adelaide or at the City of Norwood, Payneham and St Peter Council offices between **8 November 2019 to 21 November 2019**. The application documentation is also available on the SCAP website during this notification period.

http://www.saplanningcommission.sa.gov.au/scap/public_notices

If you wish to comment on the application please complete the attached form. This must reach the Secretary, State Commission Assessment Panel, GPO BOX 1815, Adelaide SA 5001 by no later than **Close of Business 21 November 2019**.

You may be given an opportunity to appear before the SCAP to further explain your views. You will be contacted should a hearing be arranged.

If you have any questions relating to this matter, please contact Will Gormly of this office by telephone on 7109 7370 or email will.gormly@sa.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Will Gormly', is located below the 'Yours sincerely' text.

Will Gormly
Senior Planning Officer
as delegate of the
STATE COMMISSION ASSESSMENT PANEL

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: LILLI RELTIC My phone number: 0419 800286

Primary method(s) of contact: Email: LILLI.RELTIC@hotmail.com
Postal Address: 84 EDWARD ST Postcode: 5067
NORWOOD SA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

☒ owner of local property
☒ occupier of local property
☐ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:

Postcode

My interests are:
(please tick one)

☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

Refer next 2 pages

I: ☒ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☒ appearing personally
(please tick one) ☒ being represented by the following person
(Please tick one)

Signature:

Date:

20 Nov 2019

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapreps@sa.gov.au

20/11/2019

Representation from

Lilli Reljic , 84 Edward St Norwood SA 5067

Owners of property near development - on Southern side

I make this submission and on behalf of myself and various residents residing within the vicinity of the proposed redevelopment of the Coles supermarket and associated shops located between Edward Street and George Street Norwood (Development Number 155/M011/19).

I support the development but wish to express the following concerns;

1. The height of the proposed residential towers is about 6.3m above the existing limits under the development plan for this precinct in Norwood. Any relaxation of these height rules will create a precedent which will likely see a continuing height creep in future developments which will detract from the scale and sense of a cohesive community so valued along the Parade.
2. There is an absence of a strategy to provide for temporary parking for Norwood shoppers and those accessing services in the area. The "Coles" car parks are well used 24 hours per day. There are major off street and on street parking problems in the Norwood parade precinct. It can be anticipated there will be a major change in parking and thus traffic flows and frustration during the construction period. A temporary car parking plan should be included in any development approval. The nearby residents are likely to have great difficulties in going about their daily lives. Parking across driveways and volumes of traffic in residential streets is already a major issue. Staff park all day in nearby streets and also commuters who work in the city.
3. The development documents the proposed increase in patronage of the new shopping centre and associated medical and office uses. Whilst the developer has provided a traffic study prepared for the developers purposes the NSP&P Council should be required to conduct an independent and broader traffic study of the impact of the proposed development which would allow the proposed development to take into account the broader traffic management issues and solutions.
4. The provision of car parks associated with the development do not seem to appear to accord with the established requirements for car parking for retail shopping centres in Norwood e.g. the requirements placed on the developers of the Norwood Place on the immediate opposite side of the Parade. The gross lettable area of the proposed development is 5319 square metres and there is provision of 347 public parking spaces There appears to be no provision made for visitors to the 77 residences proposed on the site.

5. The proposal to retain the historic heritage item the Cork tree located in the western carpark lacks a formal plan for its protection and nourishment during both the construction phase and afterwards. The plan as submitted by the developer does not sufficiently allow space to protect the tree and at least two car parks will need to be removed. The residents in the area who have fought to protect this tree seek a written agreement between the developer and the Council outlining how this tree will be protected and nourished and set out respective responsibilities. A detailed submission on the history, heritage and arborist report can be made available at short notice. These are well known to both the developer and the Council.
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7. We request that a site management plan be agreed with Council to protect local residents from trucks parking and banking up in residential streets, excessive noise, dust and disturbance, cleaning of streets and appropriate hours of operation.

Personal representation of the above and following topics

No measures to reduce /minimise the regular current vehicle hooliganism / misbehaviour of youths. (Burn outs/ large groups making excessive noise/ fire crackers/ arson eg of Coke Park and townhouses on Coke St (that needed to be rebuilt) Park – Norwood Police are aware of multiple civil disobedience/criminal matters on the site (car park)- the plan as is will allow this to continue.

Traffic calming measures.

Rubbish collected internally from George Street so that noise will be greatly reduced -agree

LILLY PENTON
20/11/2019

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2

RECEIVED

21 NOV 2019

State Commission
Assessment Panel

Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: MAEGREG CRAFTER My phone number: 0413738183

Primary method(s) of contact: Email: gcrafter@ozemail.com.au
Postal Address: 86 EDWARD ST Postcode: 5067
NORWOOD SA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- ☒ owner of local property
☒ occupier of local property
☐ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is:

86 EDWARD STREET
Postcode 5067

My interests are:
(please tick one)

- ☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

PROVIDED IN THE ENCLOSED PAPER

I: ☒ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☐ appearing personally
(please tick one) ☒ being represented by the following person
(Please tick one)

SOLICITOR

Signature:

Date:

Maegreg Crafter MR Crafter
20/11/2019

Return Address: The Secretary, State Commission Assessment Panel, GPO Box 1815, Adelaide, SA 5001 /or
Email: scapreps@sa.gov.au

Representation from Greg and Rae Crafter resident owners of 86 Edward Street Norwood SA and on behalf of various residents residing within the vicinity of the proposed redevelopment of the Coles supermarket and associated shops located between Edward Street and George Street Norwood (Development Number 155/M011/19).

We support the development but wish to express the following concerns;

1. The height of the proposed residential towers is some 6.3m above the existing limits under the development plan for this precinct in Norwood. Any relaxation of these height rules will create a precedent which will likely see a continuing height creep in future developments which will detract from the scale and sense of a cohesive community so valued along the Parade.
2. There is an absence of a strategy to provide for temporary parking for Norwood shoppers and those accessing services in the area. The "Coles" car parks are well used 24 hours per day. There are major off street and on street parking problems in the Norwood parade precinct. It can be anticipated there will be a major change in parking and thus traffic flows and resultant resident frustration during the construction period. A temporary car parking plan should be included in any development approval. The nearby residents are likely to have great difficulties in going about their daily lives. Parking across driveways and volumes of traffic in residential streets is already a major issue. Staff park all day in nearby streets and also commuters who work in the city. The Parade Master Plan indicates that the existing car parks along the Parade between Edward and George Street will be removed thus further car parks will be lost for traders and shoppers worsening the existing on street parking issues.
3. The development documents acknowledge the proposed increase in patronage of the new shopping centre and associated medical and office uses. Whilst the developer has provided a traffic report (Cirqa study) prepared for the developers purposes the NSP&P Council should be required to conduct an independent and broader traffic study of the impact of the proposed development which would allow the proposed development to take into account the broader traffic management issues and solutions. The Cirqa traffic study does not appear to take into account and model the proposal to establish a scramble crossing at the intersection of the Parade and George Street. Further the Council is discussing with DPTI the banning of right hand turns of vehicles travelling both up and down the Parade into George Street during peak hours. This would be a major deterrent to well established peak hour shopping patterns on the Parade eg before and after school rush hours, commuters, cross town visitors etc particularly when neighbouring shopping centres such as Burnside Village are developing vehicle friendly access to the centre and generous parking provision in their new \$300M Greenhill Road development.
4. The provision of car parks associated with the development do not seem to appear to accord with the previously established requirements for car parking for retail shopping centres in Norwood. The gross lettable area of the proposed development is 5319 square metres and there is provision of 347 public parking spaces There

appears to be inadequate provision made for visitors to the 77 residences proposed on the site. It is suggested that a ratio of 4 parks per 100 sq m of lettable retail space is more appropriate.

5. The proposal to retain the historic heritage item the Cork tree located in the western carpark lacks a formal plan for its protection and nourishment during both the construction phase and afterwards. The plan as submitted by the developer does not sufficiently allow space to protect the tree and at least two car parks will need to be removed. The residents living in the area who have fought to protect this tree over many years seek a written agreement between the developer and the Council outlining how this tree will be protected and nourished and set out the respective responsibilities. A detailed submission on the history, heritage and arborist report can be made available at short notice. These are well known to both the developer and the Council.
6. There are many well established plane trees in the existing car parks which provide shade and amenity and are environmentally valuable. It is requested that these trees be retained where possible or re-located in the proposed realignment of the western car park.
7. We request that a site management plan be agreed with Council to protect local residents from trucks parking and banking up in residential streets, excessive noise, dust and disturbance, cleaning of streets and appropriate hours of operation.
8. It appears that there will be overshadowing which will impact on neighbouring residences particularly in the winter months. This can be minimised we believe by an adherence to the existing height restrictions on such residential developments along Norwood Parade.
9. With respect to the residential development it appears that there are very limited balconies, and windows that can be fully opened in the residences in the two towers. We believe this is an unsatisfactory aspect of the development. Further individual air conditioning units may require further noise attenuation measures.

PREPARED IN CONJUNCTION WITH THE
BAKOPANOS FAMILY RESIDENTS OF
80 AND 84 EDWARD STREET, NORWOOD

Ken Griffin *KR Croft*

South Australian
DEVELOPMENT ACT 1993
REPRESENTATION ON APPLICATION – CATEGORY 2



Applicant: 166 The Parade Pty Ltd C/- Masterplan SA Pty Ltd
Development Number: 155/M011/19
Nature of Development: Demolition of supermarket, ancillary shop buildings and removal of three significant and four regulated trees, and construction of an eight-storey mixed use development incorporating supermarket, shops, commercial tenancies, residential flat buildings, and ancillary car parking – to be undertaken in stages.
Development Type: Merit
Zone / Policy Area: District Centre (Norwood) Zone / Retail Core Policy Area 2.1
Subject Land: 166 The Parade, Norwood
Contact Officer: Will Gormly
Phone Number: 08 7109 7370
Close Date: 21 November 2019

My Name: ROSS DILLON My phone number: 0418 836 055

Primary method(s) of contact: Email: rossdillon@adam.com.au
Postal Address: 19 GEORGE STREET Postcode: 5061
UNLEY PARK

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are: (please tick one)
☒ owner of local property
☐ occupier of local property
☒ a representative of a company/other organisation affected by the proposal
☐ a private citizen

The address of the property affected is: 160-166 THE PARADE NORWOOD Postcode 5061

My interests are: (please tick one)
☐ I support the development
☒ I support the development with some concerns
☐ I oppose the development

The specific aspects of the application to which I make comment on are:

1. THE EASEMENT AT THE NORTHERN END OF THE EDWARDS STREET CAR PARK AND THE PROVISION OF TRUCK DELIVERY SPACES TO SERVICE ADJACENT PARADE FRONTAGE RETAILERS (DILLON BOOKSHOP AND NATIONAL PHARMACY)
2. THE LAYOUT OF THE EDWARDS STREET CAR PARK AND ASSOCIATED TRAFFIC FLOW WITHIN THE CAR PARK.

I: ☒ wish to be heard in support of my submission
(please tick one) ☐ do not wish to be heard in support of my submission
(Please tick one)

By: ☐ appearing personally
(please tick one) ☐ being represented by the following person
(Please tick one)

Signature: [Signature]
Date: 14/11/2019

The Secretary

State Commission Assessment Panel

GPO BOX 1815

Adelaide SA 5001

Attn: Mr Will Gormley

Dear Sir,

Re: Application for Representation

Application Number 155/ M011/ 19

Applicant- 166 the Parade, Norwood, c/o Masterplan (SA) Pty Ltd

My wife and I operate Dillons Norwood Bookshop at 160-166 the Parade Norwood via our family company Parade Books Pty Ltd adjacent to the proposed development. We have done so for thirty four years.

Additionally we are owner of the property 162 the Parade Norwood (via our family company Julia Street Pty Ltd as trustee for the Kyabram Property Trust) which is adjacent to the proposed development.

As such, we have a legal interest in the Easement marked D at the rear of the shops facing the Parade referred to as CT 5570/110.

Thank you for the detailed plans and information re this long-awaited development. My wife and I are strong supporters of the proposed development.

My representation relates to our definite requirement for the loading zone for commercial delivery vehicles to remain in the present location at the eastern end of the easement marked D. Essential deliveries of stock for our business and others (i.e. National Pharmacies) have been made from this location since the Coles shopping centre was established in 1978.

Commercial Delivery vehicles occupy this space for not greater than 10-15 % of working hours and do not effect this proposed development or the pedestrian traffic.

The development plans include a review by traffic advisors circa and include provision for commercial delivery vehicles from the location I have identified.

However the parking layout plans do not identify the loading zone I refer to.

Additionally I seek assurance that throughout the development construction period that commercial vehicle access to this loading zone via easement D remain accessible.

I seek written confirmation by the developer that these matters will be adhered to.

Thank you for your consideration. I anticipate advise of my application for representation to discuss this matter.

Regards,
Ross Dillon



Dillons Bookshop
160-166 The Parade
Norwood
SA 5067

20 December 2019

Mr Will Gormly
Senior Planning Officer – City & Inner Metro
Development Assessment
Dept of Planning, Transport & Infrastructure
GPO Box 1815
ADELAIDE SA 5001

Dear Will

**Re: 166 The Parade Pty Ltd
Response to Representations (DA 155/M011/19)**

We act for the applicant 166 The Parade Pty Ltd. Our client has asked us to consider and respond to the representations received following Category 2 notification of this application.

As you know the representation from Mr Peter Catinari of 18 Coke Street Norwood was subsequently withdrawn. Mr Catinari's letter of withdrawal was forwarded to you on 3rd December 2019.

Summary of Representations

Excluding Mr Catinari's representation, six (6) valid representations were received. It is encouraging to note that all representations offer conditional support for the proposal.

The representations are summarised in the table below:

Summary of Representations Received			
Name	Affected Property	Support/ Oppose	Issues/Concerns
1. Ross Dillon, Dillons Norwood Bookshop	166 The Parade, Norwood	Conditional support	<ul style="list-style-type: none">• Strong supporter of proposal.• Loading Zone to remain at eastern end of Easement "D".• Plans do not identify Loading Zone for Dillons Bookshop.• Loading Zone to remain accessible during construction phase.



Summary of Representations Received			
Name	Affected Property	Support/ Oppose	Issues/Concerns
2. Rae & Greg Crafter (in conjunction with the Bakopoulis [sic] family of 80 & 84 Edward Street)	86 Edward Street, Norwood	Conditional support	<ul style="list-style-type: none"> Towers are 6.3 metres above limit. Could set a precedent for "continuing height creep". No strategy for temporary parking during construction period. Need a temporary car parking plan. Council should conduct an independent and broader traffic study of proposal's impact. Cirqa study does not take account of 'scramble' crossing at The Parade/ George Street intersection. Provision of parking does not appear to accord with previously established parking requirements for Norwood shopping centres. A ratio of 4 spaces/100 square metres is more appropriate. Proposal to retain Cork tree lacks a formal plan for protection/nourishment during and after construction. Plane trees in existing car parks should be retained where possible or relocated. Site Construction Management Plan required to protect residents from truck parking, noise, dust and disturbance, street cleaning and hours of operation. Overshadowing during winter months. This can be minimised by adherence of existing height restrictions on residential developments along The Parade. Very limited opportunities to open apartment tower windows. Air conditioners may require further noise attenuation measures.
3. Lilli Reljic	84 George Street, Norwood	Conditional support	<ul style="list-style-type: none"> Towers are 6.3 metres above limits. Will set a precedent for "continuing height creep". No strategy for temporary parking during construction period.



Summary of Representations Received			
Name	Affected Property	Support/ Oppose	Issues/Concerns
			<ul style="list-style-type: none"> • Council should conduct an independent and broader traffic study of the proposal's impact. • Provision of parking does not appear to accord with previously established parking requirements for Norwood shopping centres. • No provision made for visitors to the 77 proposed residences. • Proposal to retain Cork tree lacks a formal plan for protection/nourishment during and after construction. • Plane trees in existing carparks should be retained if possible or re-established. • Site Construction Management Plan required to protect local residents from trucks parking and banking up in residential streets, noise, dust and disturbance, street cleaning and hours of operation. • No measures to reduce/minimise vehicle hooliganism/youth misbehaviour/civil disobedience. • Traffic calming measures. • Agree with proposal that rubbish be collected internally from George Street.
4. Tim & Vicki Bakopanus	80 Edward Street	Conditional support	<ul style="list-style-type: none"> • Identical concerns to Submissions 2 & 3 above about building height, temporary parking strategy, need for broader traffic study, off street parking not in accordance with "established requirements", visitor parking, Cork tree protection, Plane Trees retained or re-established, Site Management Construction Plan, vehicle hooliganism/youth misbehaviour/civil disobedience, traffic calming, rubbish collection. • Landscaping required along border shared with 80 Edward Street.



Summary of Representations Received			
Name	Affected Property	Support/ Oppose	Issues/Concerns
			<ul style="list-style-type: none"> Retail component will be a failure. Should be fully enclosed, airconditioned and locked up after hours.
5. Matthew Ward (for RG & VR Ward and J Robins)	182-184 The Parade, Norwood	Conditional Support	<ul style="list-style-type: none"> Denigration of visual amenity, accessibility and commercial viability of rear of 180-188 The Parade, due to refuse stations, use of large vehicles, isolating eastern carpark for staff.
6. Natasha Kay ('Healthy Life' landlord)	Rear of 164 The Parade, Norwood	Conditional support	<ul style="list-style-type: none"> Tenants seek to know what impact proposal will have on trade and associated rental relief query.

Common themes identified from our analysis of the representations, and which are deserving of our response, are:

- (i) loading zone at rear of Dillons Norwood Bookshop;
- (ii) towers exceed the Development Plan building heights;
- (iii) no strategy for temporary parking during construction;
- (iv) Council should undertake an independent traffic study of the proposal's impact;
- (v) Cirqa study has not taken account of the 'scramble' pedestrian crossing which is proposed for the George Street/The Parade intersection;
- (vi) allocation of off-street parking does not accord with Council's previously established parking requirements;
- (vii) Cork tree to be retained and nourished during and after construction;
- (viii) retain or relocate Plane trees in western carpark;
- (ix) Site Management Construction Plan required to minimise impact on residential amenity during construction;
- (x) overshadowing impact from residential towers during winter;
- (xi) limited opportunities to open apartment tower windows;
- (xii) air conditioners may require noise attenuation;
- (xiii) vehicle hooliganism/misbehaviour and civil disobedience;
- (xiv) traffic calming measures required;
- (xv) landscaping required along boundary shared with 80 Edward Street;
- (xvi) retail centre will be a failure if not fully enclosed, air conditioned and locked after hours;
- (xvii) impact on the rear of 180-188 The Parade;
- (xviii) tenant request for rent relief because of construction impact on trade (Healthy Life).



Response to Representations

1. Loading Zone at rear of Dillons Norwood Bookshop

The Loading Zone at rear of Dillons Norwood Bookshop will be retained, not only for the benefit of this tenancy but for all other tenancies facing The Parade and backing onto the site. This is currently provided for as rights-of-way registered on the relevant Certificates of Title¹ and are shown on Site Plan Drawing 0906-184-DA01, Revision B. Those access rights will be retained.

2. Residential Towers Exceed Development Plan Building Height Limit

It is acknowledged that the residential apartments exceed the building height range of three to seven storeys, or 25.5 metres, as specified for Development Area C shown on the District Centre Norwood Key Development Area C Concept Plan (Figure DCe/4 of the Development Plan). However, the Development Plan adopts a performance-based approach for assessing building heights, by reference to the following Principles of Development Control for the District Centre (Norwood) Zone:

- 8 **The height of buildings and structures should be consistent with the heights specified in the relevant policy area and as indicated on Concept Plan Figure DCe/1.**
- 9 **To minimise building massing at the interface with residential development outside the zone, buildings should be constructed within a building envelope provided by a 30 degree plane, measured for a height of three metres above natural ground level at the zone boundary (except where this boundary is a primary street frontage), as illustrated in Figure 1: [our underlining]**

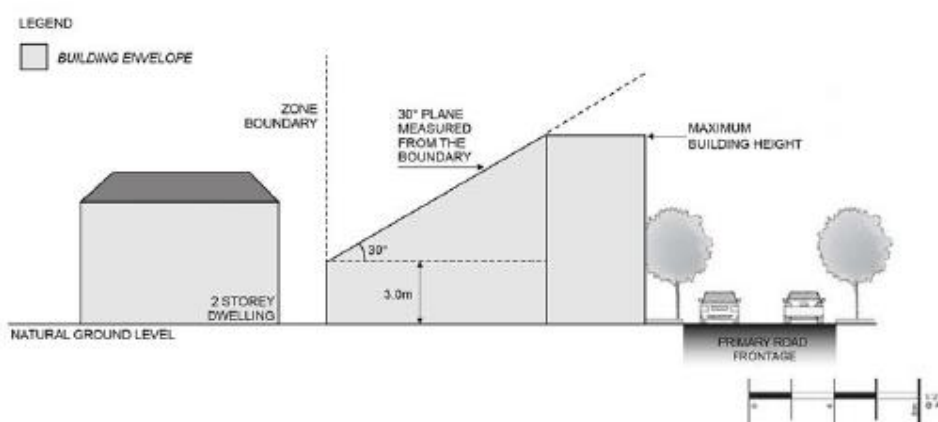


Figure 1

¹ See CT 6132/733 for Allotment 107 (the carpark, associated driveways and other land adjacent to Edward Street) which notes that the allotment is subject to free and unrestricted rights-of-way over land marked 'D'. CT 6132/733 and all other site CT's were submitted with the development application package.



10 Development located above the maximum allowable podium/street wall height should be set back from the street wall boundary in order to:

- (a) reinforce a lower scale (two or three storey) building form along the primary and secondary street frontages;**
- (b) minimise overshadowing of the public realm; and**
- (c) maintain the prominence and integrity of heritage buildings.**

The apartment buildings are set well back from The Parade, George Street and Edward Street. They are furthermore set as far back as possible from residential development in the adjacent Residential Character (Norwood) Zone to the south and east of the site.

The 30-degree plane specified in Zone PDC 9 and Figure 1 above has been applied to the proposal on Sections Drawing 0906-184-PA12 Revision B (North South Section - Short Boundary and North South Section - Long Boundary). Apart from a very minor and inconsequential penetration at the upper level of one apartment, both apartment buildings satisfy the 30-degree setback plane.

It is also instructive to note that the towers are set back a generous distance from The Parade and George Street, as depicted and accurately shown on the 3D views, especially:

- George Street Perspective (Drawing 0906-184-PA15);
- Coke Street Perspective (Drawing 0906-184-PA16); and
- The Parade Mall Perspective (Drawing 0906-184-PA20).

These perspectives demonstrate that the residential towers will be barely visible from George Street, well screened from Coke Street by mature trees in Coke Park, and will be visible only from the northern side of The Parade.

The residential towers will be most visible from Edward Street and non-residential properties to the west of Edward Street, as shown on the Edward Street Carpark Perspective 0906-184-Pd18.

Relevantly, the Government Architect in her referral response of 2nd December 2019 advises that:

"In principle, I support the overall height and massing approach. While I acknowledge that the proposed height in parts exceeds the maximum building height of seven storeys envisaged by the Development Plan, I am of the view that the concentration of the large scale building elements to the north of the site successfully mitigates the impact of over height elements to the adjoining residential properties to the south."



3. No strategy for temporary parking during construction

The entire site will transition into a construction zone for the project's duration, except for the parking aisle closest to Edward Street which will remain available for public parking until reconfigured and rebuilt towards the end of the construction program. Approximately 58 parking spaces will be set aside for this purpose.

Temporary security fencing will be erected around the construction site to prevent public access, except for the public parking spaces closest to Edward Street which will remain available for public parking. The temporary fencing will also allow be placed to allow for the continued loading and unloading in the right-of-way behind the retail tenancies fronting The Parade. Some but not all of the remaining parking spaces closest to the development site will also be set aside for construction workers' parking. These measures will ensure that overloading of on-street parking spaces in the surrounding street network is minimised during construction.

Coles Supermarket will shut down prior to project mobilisation. The supermarket's temporary closure will substantially reduce customer parking demand on the site's existing car parks. Public and customer parking will continue to be available in surrounding nearby streets, in parking stations on both sides of Webbe Street between George Street and Edward Street immediately north of the site, and on site in the parking aisle closest to Edward Street as detailed above.

Cirqa Pty Ltd furthermore addresses this issue in its **attached** correspondence dated 3 December 2019, (refer pages 4 and 5).

4. Council should undertake an independent traffic study of the proposal's impact

This issue is best directed to Council, but it is important to appreciate that the Council did in fact receive independent advice from Tonkin Engineers to inform its referral response to the State Commission Assessment Panel (SCAP). Our client's traffic consultant Cirqa Pty Ltd have in addition provided expert advice in response to the matters raised by Tonkin Engineers, which is detailed in its letter of 3rd December 2019 and reflected in the amended drawing set prepared by Studio Nine Architects.

Tonkin Engineers did not identify any traffic issues external to the site arising from the proposed development.

5. Allocation of off-street parking does not accord with Council's previously established parking requirements

It is assumed that this comment refers to the Parking Encumbrance applying to the site. At its meeting held on 8th October 2019, the Council resolved to endorse amendments to the Parking Encumbrance "in



accordance with a ratio of three (3) carparking spaces per 100 square metres of such additional gross leasable floor area". The proposal has been amended in accordance with Council's resolution.

Cirqa's letter of 3rd December 2019 furthermore advises that "... the proposed development provides onsite parking [for the non-residential component] at a rate of 6.52 spaces per 100 square metres of gross leasable floor area (0.52 spaces per 100m² higher than the maximum non-residential parking requirement identified in Council's Development Plan)".

6. Cork Tree to be retained and nourished during and after construction

The Cork Tree in the carpark adjacent to Edward Street will be retained. Currently this tree is situated in a relatively harsh environment. The proposal provides for a larger landscape island surrounding the base of this tree, together with permeable paving within the Cork Tree's root protection zone to improve the tree's health and vigour. This detail is shown on Ground Floor Plan Drawing Number 0906-184-PA02 Revision B. Arborman Tree Solutions have reviewed the landscaping and permeable paving surrounding the Cork Tree and advise that:

"The level of permeable paving afforded to the Cork Oak within the site at Norwood should suffice."

7. Retain or relocate Plane trees in western carpark

The Plane trees in the carpark adjacent to Edward Street must be removed to accommodate a reconfigured carpark layout for overall traffic management and for improved navigation and wayfinding. It is furthermore proposed to install shade structures over those parking spaces closest to the new retail complex.

The Plane trees are mature and cannot be relocated as suggested by some representors.

The Landscape Plan prepared by Jensen Plus (Landscape Concepts: Sheet 1, December 2019) proposes new trees at the western end of the Edward Street carpark that will not be taken up with shade structures. Tree species nominated for this area are detailed on Landscape Concepts: Sheet 2 prepared by Jensen Plus.

The entire western carpark adjacent to Edward Street is furthermore well screened by an assortment of trees in the wide Edward Street verge. These trees are in the public realm and are not part of the development site but will remain.



8. Site Construction Management Plan

Our client accepts that it will be necessary to prepare and abide by a Site Construction Management Plan (SCMP) to address such issues as dust generation, mud drag-out, hours of operation, temporary parking for construction workers and the public, and other impacts that could impact the amenity of the locality. The SCMP will be prepared at the Building Rules Consent stage. Our client invites SCAP to impose an appropriately worded condition on the planning approval to secure this commitment if considered necessary.

9. Overshadowing impacts in winter from residential towers

Shadow Studies have been prepared for the proposed development at Drawing 0906-184-PA14 Revision A. The Shadow Studies show the proposal's impact at 9.00 am, 12.00 pm and 3.00 pm at the winter solstice (21 June). It is relevant to note that residential properties to the south of the site are not affected from 12 noon to 3.00 pm, and the residential area on the eastern side of George Street is also unaffected by shadow at these times of the day.

The two-storey residential flat building at 73 George Street is the closest residential building to the development site. This building is immediately south of the site but separated from the site boundary by a bitumen driveway. This site is currently overshadowed by native and non-native trees which have been planted alongside the site's southern boundary. This detail is shown in the photograph below.



Adjacent two-story residential flat building and landscaping along southern site boundary



This vegetation will be removed to accommodate the proposed development. This will expose the residential flat building to more sunlight throughout the year, including the winter solstice, even though the northern side of those units closest to the site is a bitumen driveway providing vehicle access to the residents' car park at the rear.

The Development Plan at City-wide: Orderly and Sustainable Development PDC 11 requires buildings to be designed to "not unreasonably overlook or overshadow indoor or outdoor living areas of adjacent dwellings". Similar sentiments are expressed under City-wide: Interface Between Land Uses PDC 83, which calls for non-residential development adjacent to a residential zone to be "*designed and sited to minimise overlooking and overshadowing of nearby residential properties*" [our underlining].

City-wide Medium and High-Rise Development (three or more storeys) PDC 279 requires multi-storey buildings to "... minimise detrimental micro-climatic and solar access impacts on adjacent land or buildings, including effects of ... daylight, sunlight, glare and shadow" [our underlining].

We are satisfied that the proposal has been adequately and appropriately designed and sited to not unreasonably overshadow, and to minimise overshadowing of, adjacent residential development.

10. Limited opportunities to open apartment tower windows

The apartment tower windows will be openable to permit light and breezes to penetrate and ventilate each apartment. For safety reasons, some of these windows will be hopper style. Balcony windows will be sliding style. The National Construction Code furthermore mandates that natural ventilation must be provided to each dwelling. This will be achieved throughout the residential development with openable windows.

11. Air conditioner noise attenuation

Resonate Acoustics conducted a Planning Stage Acoustic Assessment for the proposal (report A190051RPZ Revision A dated 10 October 2019). Resonate conducted noise monitoring tests on the southern side of the existing Coles supermarket to determine the current noise impact on residential receivers to the south of the site, as these properties are the nearest sensitive receptors. Resonate is of the opinion "... *that noise emissions from external mechanical plant [air conditions and associated condensers are treated as mechanical plant] can meet the relevant criteria in Section 4.1 [of the Planning Stage Acoustic Assessment] with standard mitigation measures, for example location of significant plant items away from noise sensitive receivers where practical, the use of low-noise plant, and/or acoustic screens*".

Resonate have furthermore identified that predicted noise levels from the proposed supermarket condensers (two are proposed) will most likely need to be treated. Treatment methods are detailed in Section 6.4.1. of the Resonate report.



Resonate advises that *"... noise mitigation treatment will be progressed throughout the design development to ensure noise from mechanical plant does not adversely impact on noise sensitive receivers within the site"*.

SCAP is invited to impose an appropriately worded Condition or Conditions on the approval to specify that all plant and equipment, including domestic air conditioner equipment, shall be attenuated to achieve compliance with the Minister's Specification SA 78B (Construction Requirements for the Control of External Sound) and the Environment Protection (Noise) Policy.

12. Vehicle hooliganism, misbehaviour and civil disobedience

The owners and occupiers of 80 Edward Street consider that the proposal has not been designed *"to reduce/minimise the regular current vehicle hooliganism/misbehaviour of youths ..."* and that *"the plan as is will allow this to continue"*.

With respect, we disagree with the assertion that the proposal will perpetuate anti-social behaviours identified by these representors. The proposal has been carefully designed having regard to Crime Prevention through Urban Design (CPTED) principles. The proposal's CPTED design features include:

- clear lines of sight and the avoidance of hiding and entrapment spots;
- the installation of movement-activated lighting along the full length of the southern boundary and in the small plaza on the northern side of the supermarket building;
- installation of CCTV cameras at strategic locations throughout the site;
- bollard-style lighting for wayfinding purposes;
- extension of the Mall canopy southwards towards Coke Park, but with a permeable roof to discourage sheltered after-hours gatherings during inclement weather;
- clear lines of sight into and from Coke Park;
- casual surveillance from all apartments and townhouses facing the surrounding public and private realm;
- a secure zone around the Mall extension to prevent after-hours access into that part of the Mall adjacent to the supermarket, Liquorland and the specialty retail tenancies;
- installation of a code-activated entry system (voice and visual detection) into the Ground Floor Residential Lobby to prevent unauthorised access to the above-podium-level apartments and townhouses; and
- installation of code-activated entry systems at the front and rear ground floor entrances of the George Street apartments.



These CPTED design features have been incorporated into the proposal to minimise criminal and anti-social behaviour, but the potential will always remain for anti-social and/or criminal behaviour to occur during the day and night.

It is reassuring that the SAPOL police station at nearby Osmond Terrace would be capable of quickly responding to urgent and non-urgent calls for assistance from tenants, apartment residents and surrounding owners and occupiers should the need arise.

13. Traffic calming measures required

The proposal incorporates traffic calming measures at the point where the Mall Canopy extension protrudes across the southern driveway. Footpath paving along George Street and Edward Street will also be designed and paved to prioritise pedestrian movement at all driveway entrances into the site.

14. Landscaping required along boundary shared with 80 Edward Street

The Landscape Concept prepared by Jensen Plus (Drawing PO819 Revision G dated December 2019) shows an arbor over the eastern end of the driveway opposite the two storey units in George Street. The arbor will be softened with climbing plants such as Wisteria, Japanese Creeper or Wonga-Wonga Vine as scheduled on the Jensen Plus Landscape Concept drawings. The climbing vines will soften the interface shared with the adjacent residential zone by forming a semi-shaded green canopy along this boundary.

The boundary shared with residential development between Coke Park and Edward Street will be landscaped with a selection of 'ground level trees' and 'amenity plants' listed in the planting schedule on Sheet 2 of the Jensen Plus Landscape Concepts.

15 Viability of Retail Component

One representor asserts that the retail component will be a *"failure"* if it is not fully enclosed, airconditioned and locked after hours.

Our client is working in association with Coles Limited, one of Australia's largest and oldest retail operators, to ensure that its anchor supermarket and all other retail tenancies present as an attractive and viable customer offer.

We disagree with the assertion that the entire retail area should be enclosed and air conditioned. The aim has always been to capture the semi-open 'feel' of Norwood Mall. The Zone's Desired Character statement furthermore encourages outdoor dining, pedestrian movement linked to Coke Park, and a desire for the *"existing open nature of the pedestrian link on the southern side of The Parade [to] be maintained"*. The proposal has been well designed to satisfy these Development Plan's ambitions.



The ground level retail tenancies and southern Mall will be secured after hours in accordance with the representor's suggestion.

16. Impact on the rear of 180-182 The Parade

Premises at 180-182 The Parade trade as Bendigo Bank (180 The Parade) and Kidstuff (182 The Parade). The two premises are separated by a narrow (less than 1.0-metre-wide) alley linking into the site from The Parade. The alley is not part of the development site.

The area behind these retail premises is dominated by a large eucalypt tree which will be retained. The space around this tree will be redeveloped as a paved plaza with provision for five parking spaces. The plaza will continue to be accessed from The Parade, as well as from Norwood Mall.

The plaza's design was informed by feedback received from the Design Review Panel sessions, but our client is limited as to what can be done to fully realise the plaza's potential without an understanding of the intentions for the back-of-house and operational requirements of the adjacent retail premises fronting The Parade. Should these premises be redesigned and altered, the redesigned plaza could provide an opportunity for those alterations to include a secondary outlook onto the plaza.

17. Tenant Request for Rent Relief

This request is not a relevant planning matter.

Closure

We trust that this response and the amended set of drawings (provided separately) is adequate for your purposes.

We look forward to appearing before SCAP to further explain the proposal and respond to those representors who may wish to be heard.

Yours sincerely

Graham Burns
MasterPlan SA Pty Ltd

cc: Studio Nine Architects
166 The Parade Pty Ltd

Ref: 19020|TAW

3 December 2019

Mr Graham Burns
Masterplan
33 Carrington Street
ADELAIDE SA 5000

Dear Graham,

PROPOSED MIXED-USE DEVELOPMENT 166A THE PARADE, NORWOOD

I refer to the proposed mixed-use development at 166A The Parade, Norwood. Specifically, this letter responds to comments made by Council, as well as representations received as part of the application's public notification period. As requested, I have undertaken a review of the responses received, with key comments raised relating to traffic, parking and associated design aspects identified in italics, followed by my response.

RESPONSE TO COUNCIL COMMENTS

The subject development application has been referred to Council as part of the South Australian Commission Assessment Panel's (SCAP) development approval process. It should be noted that, subsequently, Council have engaged Tonkin Engineers to undertake a third-party review traffic and parking aspects of the proposal. Comments made by Council staff and Tonkin Engineers have been separated accordingly.

Council Staff Comments

"... conditions should be imposed to restrict the size of delivery and service vehicles leaving in a south direction... a "No Right Turn" sign to be installed at the exit of the supermarket loading dock..."

As illustrated in Appendix B of CIRQA's report, it is intended that all commercial vehicles accessing the site's primary supermarket loading area will access the site from the north (i.e. via The Parade).

Furthermore, it is not recommended that a standard 'No Right Turn' sign be installed at the site's northern access as such a sign does not differentiate between commercial and light vehicles. However, should Council request that signage be installed to restrict commercial vehicles only from exiting the site via a right turn, a custom sign could be installed (for example, "Commercial Vehicles Must Turn Left"). "

Tonkin Engineers Comments

"The staff parking area on the south-eastern side of the site consists of one continuous blind aisle. Although this is not non-compliant..."

As noted by Tonkin, the south-eastern staff parking area is 'not non-compliant' (i.e. the parking area is compliant with the relevant requirements of the Australian/New Zealand Standard for "Parking Facilities – Part 1: Off-street car parking" (AS/NZS 2890.1:2004)).

"The resident parking is a long blind aisle. ... this is not non-compliant..."

Again, as noted by Tonkin, the resident parking area is not non-compliant (i.e. the parking area is compliant with the relevant requirements of AS/NZS 2890.1:2004). As would be expected within a residential parking area, parking spaces will be allocated to dwellings and users will be familiar with the location of their respective space.

"... parking bays to be 2.6-2.7m wide depending on the aisle width."

As noted in CIRQA's report, regular (publicly accessible) parking spaces will be 2.6 m wide with an adjacent 6.6 m wide aisle, or 2.7 m wide with an adjacent 6.2 m wide aisle. Where spaces are identified as 'Small Car Only', spaces will be at least 2.3 m wide with an adjacent aisle of at least 6.2 m. Such widths satisfy the 'User Class 3A' requirements of AS/NZS 2890.1:2004.

However, it is noted that three spaces located within the northern row of the site's first floor podium parking area were illustrated as 2.5 m on the proposal plans submitted with the development application. Accordingly, minor changes have been made to the linemarking of these spaces such that they are compliant with AS/NZS 2890.1:2004. Updated plans reflecting these changes are attached to this letter.

"Tandem parking bays are not ideal..."

Throughout the entire development, one set of tandem spaces (comprising of two individual parking spaces in a stacked configuration) is provided. The tandem spaces are provided within the residential parking area and will be allocated to the same dwelling. Such an arrangement is not prohibited by AS/NZS 2890.1:2004, is commonplace for residential parking and is considered appropriate.

"Secure bike parking provided on the second level. ... they are not likely to be used by shoppers."

The secure bicycle parking located on the second level is only intended for use by staff and residents. Numerous bicycle parking spaces are located within close vicinity to the primary retail core on the ground floor for use by customers and visitors to the site. Such an approach is consistent with the security guidelines identified in the Australian Standard for "Parking Facilities – Part 3: Bicycle Parking" (AS/NZS 2890.3:2015).

"... the access services more than 101 parking spaces with a user class of 3A ... the entry and exit must be split ..."

AS/NZS 2890.1:2004 identifies access driveway widths for various user classes depending on the number of parking spaces in which each access serves. However, AS/NZS 2890.1:2004 states (immediately prior to the tables referenced by Tonkin Engineers) that "... where traffic flow data on an access driveway is either known or can be determined by separated means more accurately than by use of the [user class] categories in Table 3.1, such data may be used to determine driveway widths by accepted design procedures."

CIRQA's assessment has been based upon turning movement survey data recorded at each of the site's existing crossovers. Such volumes have been adjusted (increased) to include consideration of the additional floor area proposed within the development.

It should be noted that each of the proposed crossovers is in the same general location as the site's existing crossovers (with the Edward Street crossovers remaining unchanged). Each of the site's crossovers, as well as the circulation roadways immediately the access, will exceed the minimum dimensional requirements of AS/NZS 2890.1:2004.

Furthermore, modelling analyses of each of the site's access points indicate that the proposed access arrangements will readily accommodate the traffic volumes forecast to be generated by the proposed development (upon occupation).

On the basis of the above, the proposed access arrangements are considered appropriate to service the proposed development with regard to traffic volume and vehicle type.

RESPONSE TO REPRESENTATIONS

As part of the application's public notification period, seven representations have been received. It should be noted that all seven representations were supportive of the proposed development albeit had some concerns. Key points relating to traffic and/or parking matters are as follows:

"...that commercial vehicle access to [the] loading zone [accessed] via easement D remain[s] accessible."

- 160-166 The Parade, Norwood

As illustrated in Appendix C of CIRQA's report, the proposed development will retain commercial vehicle access via Edward Street and within the subject easement as currently occurs on-site. While not shown on the planning drawing set issued with the development application, the intent is for this area to remain as a loading zone for the sole intent of servicing adjoining Parade-fronting tenancies. Accordingly, a revised planning drawing set has been issued illustrating that the area is to remain as a loading zone.

"the denigration of ... accessibility ... as a result of the location of refuse stations, frequent proposed use of large vehicles and isolating the eastern carpark for staff."

- 182-184 The Parade, Norwood

The refuse store proposed on the northern side of the multi-storey building is located on the subject title and outside of the existing rights-of-way. Importantly, the location of the refuse store will not prohibit vehicle access to or from any of the adjacent allotments which have rights-of-way over other portions of the subject title.

While there will be an increase in commercial vehicles in the north-eastern section of the site, the number of movements would still be within the capacity of the associated access point and internal circulation roads. There will be minimal impact on accessibility for other properties accessed via the right-of-way as a result of the commercial vehicle movements associated with the proposal.

Finally, as noted above, the site's eastern parking area is proposed to be designated as a staff parking area. This is due to the location of the parking area with regard to pedestrian accessibility (i.e. pedestrians are required to access this parking area via a stair core located on the southern side of this parking area) and the desire to minimise interaction between commercial vehicles and pedestrians.

While drivers associated with tenancies with frontage to The Parade will be required to drive through the site's primary commercial vehicle area, once parked, drivers will be able to access their desired tenancy via the rear of the tenancy (typically staff of The Parade tenancies) or via the pedestrian walkway located between 180 and 182-184 The Parade. As such, the proposed designation of the site's eastern parking area as staff parking is considered to be a safety benefit for users of the subject site and the adjacent Parade-fronting tenancies.

"2. There is an absence of a strategy to provide for temporary parking for Norwood shoppers and those accessing services in the area ... during the construction period."

- 80 Edward Street, Norwood

- 84 Edward Street, Norwood
- 86 Edward Street, Norwood

Traffic and parking management strategies for the duration of construction are typically identified following development consent and once construction staging has been confirmed with the building contractor. Nonetheless, the proposed construction staging will seek to minimise impacts to on-street parking and traffic movement within the vicinity of the site where possible.

With regard to parking, it should be reiterated that all tenancies on the subject site will not be operational during construction. As such, parking demands associated with staff and customers of such tenancies will not be required to be accommodated on-street or within nearby parking areas.

Furthermore, it is expected that parking demands associated with construction personnel will be accommodated within the site's parking areas throughout the duration of the project. Similarly, due to the size of the site, it is expected that construction vehicles will also be able to store on-site whilst the loading and unloading of materials occurs. Accordingly, it is anticipated that construction of the proposed development will not result in significant increases to on-street parking demands.

Finally, both Edward Street (in which all of three representation who have raised such concerns reside) and George Street are subject to two-hour parking controls from 9:00 am to 5:00 pm, Monday to Saturday, and from 5:00 pm to 9:00 pm on Thursday evening. Typically, staff and commuter parking are considered to be of a 'long-term' duration, with vehicles usually parked for the length of a workday (in the order of eight hours). Given that parking is restricted to two-hours on both Edward Street and George Street, it is considered extremely unlikely that staff and commuters would park within either Edward Street or George Street.

"The Parade Master Plan indicates that the existing car parks along the Parade between Edward and George Street will be removed thus further car parks will be lost for traders and shoppers worsening the existing on street parking issues."

- 86 Edward Street, Norwood

While The Parade Master Plan indicates potential for removal of the on-street parking on The Parade, it also notes community concern in relation to reduction of on-street parking. Furthermore, it also notes that any such changes would be undertaken gradually over a number of years.

It should also be noted that, given a previous major development of the subject site was proposed and subsequently approved, the preparation of the Master Plan included consideration of the potential for redevelopment of the Norwood Village site. Importantly, no changes to on-street parking provisions on The Parade are proposed as part of the

development application. Any concerns regarding the Master Plan should be directed to Council.

"Whilst the developer has provided a traffic study prepared for the developer's purposes the NSP&P [sic] Council should be required to conduct an independent and broader traffic study of the impact of the proposed development which would allow the proposed development to taking into account the broader traffic management issues and solutions."

- 80 Edward Street, Norwood
- 84 Edward Street, Norwood
- 86 Edward Street, Norwood

As noted above, Council has engaged Tonkin Engineering to review CIRQA's assessment of the proposal. The review has not identified any broader traffic issues arising from the proposed development.

Furthermore, discussions were held with Council officers and DPTI representatives in respect to the proposal and associated traffic and parking considerations. The traffic and parking assessment prepared by CIRQA is considered adequate to inform the assessment of the proposal and is in line with discussions held with both Council and DPTI.

"The Cirqa traffic study does not appear to take into account and model the proposal to establish a scramble crossing at the intersection of the Parade and George Street. Further the Council is discussing with DPTI the banning of right hand turns of vehicles travelling both up and down the Parade into George Street during peak hours."

- 86 Edward Street, Norwood

As noted above, as part of CIRQA's involvement in the project, numerous discussions with DPTI have been undertaken. The assessment undertaken is consistent with the approach discussed with DPTI. In particular, neither DPTI (nor Council) has requested that the analyses include consideration of a scramble crossing at the intersection of The Parade and George Street.

"The provision of car parks associated with the development do not seem to appear to accord with the established requirements for car parking for retail shopping centre in Norwood ... There appears to be no provision made for visitors to the 77 residents proposed on the site."

- 80 Edward Street, Norwood
- 84 Edward Street, Norwood
- 86 Edward Street, Norwood

"It is suggested that a ratio of 4 parks per 100 sq m [sic] of lettable retail space is more appropriate."

- 86 Edward Street, Norwood

As noted in CIRQA's report, the parking provision proposed as part of the subject development exceeds both the retail and residential parking requirements identified by Council's Development Plan (with additional parking spaces provided beyond the maximum identified by the applicable parking requirements).

With regard appropriate parking rates, it is unclear as to why a ratio of four spaces per 100 m² of lettable floor space has been derived. It should be noted that, excluding consideration of parking spaces allocated to residents and residential floor area, the proposed development provides on-site parking at a rate of 6.52 spaces per 100 m² of gross leasable floor area (0.52 spaces per 100 m² higher than the maximum non-residential parking requirement identified in Council's Development Plan).

However, it should be noted that parking has been provided at such a rate in order to satisfy the requirements of the new parking Encumbrance endorsed by The Council on Tuesday 8 October 2019.

Taking into consideration the requirements of Council's Development Plan and the parking Encumbrance imposed on the subject titles, adequate parking will be provided on the subject site in line with the relevant requirements.

"We request that a site management plan be agreed with Council to protect local residents from trucks parking and banking up in residential streets, ..."

- 80 Edward Street, Norwood
- 84 Edward Street, Norwood
- 86 Edward Street, Norwood

As noted above, the subject site is of a substantial size, large enough to accommodate commercial vehicles associated with the site's construction on-site. While a building contractor is yet to be identified, it is anticipated that the staging of the site's construction will facilitate commercial vehicle movements throughout the construction process. On this basis, it is not considered that commercial vehicles will be required to park on the adjacent road network.

"Traffic calming measures."

- 80 Edward Street, Norwood
- 84 Edward Street, Norwood

Traffic calming measures are typically only undertaken where and when adverse traffic behaviours are identified. Given that the proposal comprises the reconfiguration of the site's circulation and parking areas (effectively resulting in an entirely new parking area), it is not considered appropriate to proposed traffic control measures (such as the installation of road humps) prior to occupation and use of the site. The proposed access and parking layout is considered appropriate to adequately control vehicle speeds and

maintain a safe, shared environment. Nevertheless, traffic control devices could be installed retrospectively in the future if required.

Please feel free to contact me on (08) 7078 1801 should you require any additional information.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Tom Wilson", written in a cursive style.

THOMAS WILSON

Senior Traffic & Transport Engineer | CIRQA Pty Ltd

Development Plan Provisions

Extracted from

Norwood Payneham and St Peters (City) Development Plan Consolidated 21 March 2019

166 The Parade, Norwood

CITY WIDE

Design and Appearance of Land and Buildings

OBJECTIVES

- Objective 18:** The amenity of localities not impaired by the appearance of land, buildings and objects.
- Objective 19:** Development of a high architectural standard and appearance that responds to and reinforces positive aspects of the local environment and built form.
- Objective 20:** Architectural excellence allowing for design innovation consistent with sound design principles.
- Objective 21:** The continued visual dominance of key reference buildings, such as the Norwood Town Hall, St Peters Town Hall, the Maid and Magpie Hotel, Norwood Hotel, Bon Marche Building, the Payneham Uniting Church and the former Kent Town Brewery Site.
- Objective 22:** A safe, secure and crime resistant environment where land uses are integrated and designed to facilitate community surveillance.

PRINCIPLES OF DEVELOPMENT CONTROL

- 28** The appearance of land and buildings should not impair the amenity of the locality in which they are situated.
- 29** Except where the zone or policy area objectives, principles of development control and/or desired character of a locality provide otherwise, new buildings:
- (a) may be of a contemporary appearance and exhibit an innovative style;
 - (b) should complement the urban context of existing buildings on adjoining and nearby land in terms of:
 - (i) maintenance of existing vertical and horizontal building alignments
 - (ii) architectural style, building shape and the use of common architectural elements and features;
 - (iii) consistent colours, materials and finishes; and
 - (c) should not visually dominate the surrounding locality.
- 30** Buildings should be designed to minimise their visual bulk and provide visual interest through design elements such as:
- (a) articulation;

- (b) colour and detailing;
 - (c) materials, patterns, textures and decorative elements;
 - (d) vertical and horizontal components;
 - (e) design and placement of windows;
 - (f) window and door proportions;
 - (g) roof form and pitch;
 - (h) verandahs and eaves; and
 - (i) variations to facades.
- 31** The design and location of buildings should ensure that adequate natural light is available to adjacent dwellings, with particular consideration given to:
- (a) windows of habitable rooms, particularly the living areas of adjacent buildings;
 - (b) ground-level private open space of adjacent dwellings;
 - (c) upper level private balconies that provide the primary open space area for any dwelling; and
 - (d) access to solar energy.
- 32** The height of buildings, structures and associated component parts should not exceed the number of storeys or height in metres above the natural ground level prescribed in the relevant Zone and/or Policy Area.
- For the purposes of this Principle, 'storey' refers to the space between a floor and the next floor above, or if there is no floor above, the ceiling above. A mezzanine floor level shall be regarded as a floor. A space with a floor located below natural ground level shall be regarded as a storey if greater than one metre of the height between the floor level and the floor level above is above natural ground level.
- 33** Buildings should be designed and sited to avoid creating extensive areas of uninterrupted walls facing areas exposed to public view.
- 36** Balconies should:
- (a) be integrated with the overall architectural form and detail of the building;
 - (b) be sited to face predominantly north or east to provide solar access;
 - (c) be self-draining and plumbed to minimise runoff; and
 - (d) be recessed where wind would otherwise make the space unusable.
- 37** The external walls and roofs of buildings should not incorporate highly reflective materials which will result in excessive glare.
- 38** Structures located on the roofs of buildings to house plant and equipment, should be screened from view and should form an integral part of the building design in relation to external finishes, shaping and colours.
- 39** Building design should emphasise all pedestrian entry points to provide all users with perceptible and direct access from public street frontages and vehicle parking areas.

- 40 Buildings, landscaping, paving and signage should have a coordinated appearance that maintains and enhances the visual attractiveness of the locality.
- 41 Buildings (other than ancillary buildings, group dwellings or buildings located on hammerhead, battleaxe or similar configuration allotments) should be designed so that their main facade faces the primary street frontage of the land on which they are situated.
- 42 Development should be designed and sited so that outdoor storage, loading and service areas, fire escapes and plant and equipment hatches are screened from public view through the use of an appropriate combination of built form, solid fencing and/or landscaping.
- 43 Outdoor storage, loading and service areas should be located and designed to enable the convenient manoeuvring of service and delivery vehicles and sited away from sensitive land uses.
- 44 Development should:
 - (a) protect existing site features, including mature vegetation and trees from damage; and
 - (b) not result in damage to neighbouring trees.
- 45 Development in non-residential zones abutting the Residential Zones or the Residential (Historic) Conservation Zones, should not prejudice the attainment of the Objectives relating to the residential zones.
- 46 Development adjacent to the boundary of a Residential Historic (Conservation) Zone, should provide a transition down in scale and mass to complement the built form within the Residential Historic (Conservation) Zone.
- 47 Development should not, in respect to its appearance, interfere with the attainment of the Objectives for the relevant Zone or Policy Area or otherwise impact upon the existing character of scenic or environmentally important areas.

Crime Prevention

- 59 Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.
- 60 Buildings should be designed to overlook public and communal open spaces and streets to allow casual surveillance.
- 61 Buildings should be designed to minimise and discourage access between roofs, balconies and windows of adjoining dwellings.
- 62 Development, including car park facilities should incorporate signage and lighting that indicate the entrances and pathways to, from and within the site.
- 63 Site planning, buildings, fences, landscaping and other features should clearly differentiate between public, communal and private areas.
- 64 Development should avoid pedestrian entrapment spots and routes and paths that are predictable or unchangeable and offer no choice to pedestrians.
- 65 Development fronting an alleyway, laneway (including a service lane), or other minor or unserviced street should be located and designed to maximise safety and security.
- 66 Development fronting a laneway (including a service lane), or other minor or unserviced street should maximise the potential for passive surveillance by ensuring that the building can be seen from nearby buildings and the laneway/minor streets/unserviced streets.

Energy Efficiency

OBJECTIVES

Objective 23: Development designed and sited to conserve energy and minimise waste.

PRINCIPLES OF DEVELOPMENT CONTROL

- 67** Development should provide for efficient solar access to buildings and open space all year round.
- 68** Buildings should be sited and designed to ensure:
- (a) that the main living areas and the private open space associated with the main living areas, face north to maximise exposure to winter sun; and
 - (b) adequate natural light and winter sunlight is available to the main internal living areas and principal private open spaces of adjacent properties.
- 69** Development should be designed to minimise energy consumption by incorporating, where practicable, energy efficient building design elements, techniques and materials, such as:
- (a) the sizing, orientation and shading of windows to reduce summer heat load and take advantage of winter sun;
 - (b) the use of deciduous trees, pergolas, eaves, verandas and awnings, to allow penetration of heat and light from the sun in winter and to provide shade in summer;
 - (c) openings designed to maximise the potential for natural cross-ventilation to enable cooling breezes to reduce internal temperatures in the summer months; or
 - (d) the use of colours on external surfaces such as roofs and walls, to minimise heat absorption in summer.

Landscaping, Fences and Walls

OBJECTIVES

Objective 24: The amenity of land and development enhanced with appropriate planting and landscaping, which uses locally indigenous plant species where possible.

Objective 25: Functional fences and walls that enhance the attractiveness of development.

PRINCIPLES OF DEVELOPMENT CONTROL

Landscaping

- 73** Development should incorporate open space and landscaping and minimise the use of hard paved surfaces in order to:
- (a) complement built form and reduce the visual impact of larger buildings (for example locating taller and broader plants against taller and bulkier building components);
 - (b) enhance the visual appearance from the street frontage;
 - (c) screen service yards, loading areas and outdoor storage areas;
 - (d) define and enhance the appearance of outdoor spaces, including car parking areas;
 - (e) minimise heat absorption and reflection;
 - (f) provide shade and shelter;

- (g) assist in climate control within and around buildings;
- (h) allow for natural infiltration of surface waters through permeable treatments;
- (i) contribute to the viability of ecosystems and species; and
- (j) promote water and biodiversity conservation.

74 Landscaped areas should:

- (a) where practicable, have a width of not less than two metres;
- (b) be protected from damage by vehicles and pedestrians;
- (c) result in the appropriate clearance from powerlines and other infrastructure being maintained;
- (d) be designed to incorporate the re-use of stormwater for irrigation purposes; and
- (e) include the planting of locally indigenous species where practical.

75 Landscaping should be used to assist in discouraging crime by:

- (a) screen planting areas susceptible to vandalism;
- (b) planting trees or ground covers, rather than shrubs, alongside footpaths; and
- (c) planting vegetation other than ground covers a minimum distance of two metres from footpaths to reduce concealment opportunities.

76 Landscaping of non-residential development should be provided and maintained in order to:

- (a) establish a buffer between the non-residential development and the development on adjacent sites;
- (b) complement the landscaping provided by adjacent development and enhance the visual appearance and character of the area;
- (c) shade, define and create windbreaks for pedestrian paths and spaces;
- (d) screen, shade and enhance the appearance of car parking areas;
- (e) screen service yards, loading areas and outdoor storage areas; and
- (f) re-establish local indigenous plant species where it is practical to do so.

77 Non-residential development adjacent to a residential land use or zone or within a residential zone, should incorporate landscaping which includes plants of a mature height, scale and form.

78 Landscaping should not:

- (a) unreasonably restrict solar access to adjoining development;
- (b) cause damage to buildings, paths, infrastructure/services and other landscaping from root invasion, soil disturbance or plant overcrowding;
- (c) remove opportunities for passive surveillance;
- (d) increase leaf fall into watercourses; and

- (e) introduce pest plants and/or increase the risk of weed invasion.

Interface Between Land Uses

OBJECTIVES

- Objective 26:** Development located and designed to minimise adverse impact and conflict between land uses.
- Objective 27:** Protect community health and amenity from the adverse impacts of development and support the continued operation of all desired land uses.

PRINCIPLES OF DEVELOPMENT CONTROL

- 80** Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:
 - (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants;
 - (b) noise;
 - (c) vibration;
 - (d) electrical interference;
 - (e) light spill;
 - (f) glare;
 - (g) hours of operation; or
 - (h) traffic impacts.
- 81** Residential development adjacent to a non-residential land use or zone or within a non-residential zone should be located, designed and sited in a manner which:
 - (a) protects residents from any adverse effects of non-residential activities; and
 - (b) minimises negative impact on existing and potential future land uses considered appropriate in the locality.
- 82** Non-residential development in residential zones should:
 - (a) not detrimentally impact on the amenity of nearby residents;
 - (b) provide adequate protection for residents of adjoining sites from air and noise pollution, traffic disturbance and other harmful effects on health or amenity; and
 - (c) not negatively impact on adjoining open space, mature trees or vegetation.
- 83** Non-residential development adjacent to a residential zone or within a residential zone should be located, designed and sited to minimise overlooking and overshadowing of nearby residential properties.
- 84** Non-residential development on land abutting a residential zone or within a residential zone should be designed to minimise noise impacts and achieve adequate levels of compatibility between existing and proposed uses.
- 85** Sensitive land uses which are likely to conflict with the continuation of lawfully existing developments and land uses considered appropriate for the zone should not be developed.

Movement, Transport and Car Parking

Cycling and Walking

- 105** Development should ensure that a permeable street and path network is established that encourages walking and cycling through the provision of safe, convenient and attractive routes with connections to adjoining streets, paths, open spaces, schools, pedestrian crossing points on arterial roads, public and community transport stops and activity centres.
- 109** Development should encourage and facilitate cycling as a mode of transport by incorporating end-of journey facilities including:
- (a) showers, changing facilities and secure lockers;
 - (b) signage indicating the location of bicycle facilities; and
 - (c) bicycle parking facilities provided at the rate set out in Table NPSP/10
- 110** On-site secure bicycle parking facilities should be:
- (a) located in a prominent place;
 - (b) located at ground floor level;
 - (c) located undercover;
 - (d) located where surveillance is possible;
 - (e) well lit and well signed;
 - (f) close to well used entrances; and
 - (g) accessible by cycling along a safe, well lit route.
- 111** Pedestrian and cycling facilities and networks should be designed and provided in accordance with relevant provisions of the *Australian Standards and Austroads Guides*.

Access

- 112** Development should have direct access from an all-weather public road.
- 113** Development should be provided with safe and convenient access which:
- (a) avoids unreasonable interference with the flow of traffic on adjoining roads;
 - (b) provides appropriate separation distances from existing roads or level crossings;
 - (c) accommodates the type and volume of traffic likely to be generated by the development or land use and minimises induced traffic through over-provision; and
 - (d) is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.
- 117** Driveways and parking areas should be designed and constructed to:
- (a) follow the natural contours of the land;
 - (b) minimise excavation and/or fill;
 - (c) minimise the potential for erosion from surface runoff;

- (d) avoid the removal of existing vegetation, including street trees; and
- (e) be consistent with Australian Standard AS: 2890 – Parking facilities.

Vehicle Parking

- 120** Development should provide off-street vehicle parking in accordance with rates contained in [Tables NPSP/8 and 9](#).
- 123** Development should provide carparking which is consistent with *Australian Standard AS: 2890 - Parking facilities*.
- 124** Vehicle parking areas should be sited and designed to:
- (a) facilitate safe and convenient pedestrian linkages to the development and areas of significant activity or interest in the vicinity of the development;
 - (b) include safe pedestrian and bicycle linkages that complement the overall pedestrian and cycling network;
 - (c) not inhibit safe and convenient traffic circulation;
 - (d) result in minimal conflict between customer and service vehicles;
 - (e) avoid the necessity to use public roads when moving from one part of a parking area to another;
 - (f) minimise the number of vehicle access points onto public roads;
 - (g) avoid the need for vehicles to reverse onto public roads;
 - (h) where practical, provide the opportunity for shared use of car parking and integration of car parking areas with adjoining development to reduce the total extent of vehicle parking areas and the requirement for access points;
 - (i) not dominate the character and appearance of the development when viewed from public roads or spaces;
 - (j) provide landscaping that will shade and enhance the appearance of the vehicle parking areas; and
 - (k) where practicable, include infrastructure such as underground cabling and connections to power infrastructure that will enable the recharging of electric vehicles.
- 125** Where vehicle parking areas are not obviously visible or navigated, signs indicating the location and availability of vehicle parking spaces associated with businesses should be displayed at locations readily visible to users.
- 126** Vehicle parking areas that are likely to be used during non-daylight hours should provide floodlit entry and exit points and site lighting directed and shaded in a manner that will not cause nuisance to adjacent properties or users of the parking area.
- 127** Vehicle parking areas should be sealed or paved to minimise dust and mud nuisance.
- 128** To assist with stormwater detention and reduce heat loads in summer, outdoor vehicle parking areas should include landscaping.
- 129** Vehicle parking areas should be line-marked to delineate parking bays, movement aisles and direction of traffic flow.
- 130** On-site visitor parking spaces should be sited and designed to:

- (a) not dominate internal site layout;
- (b) be clearly defined as visitor spaces not specifically associated with any particular dwelling; and
- (c) be accessible to visitors at all times.

Residential Development

OBJECTIVES

- Objective 55:** Safe, pleasant, convenient, and healthy-living environments that meet the full range of needs and preferences of the community.
- Objective 56:** An increased mix in the range and number of dwelling types available within the City to cater for changing demographics, particularly smaller household sizes, housing for seniors and supported accommodation.
- Objective 57:** Increased dwelling densities in areas close to centres, public transport and significant public open spaces.

PRINCIPLES OF DEVELOPMENT CONTROL

General

- 174** Residential development should efficiently use infrastructure and services.
- 175** Residential development should not create conditions which are likely to exceed the capacity of existing roads, public utilities and other community services and facilities.
- 176** Residential development should be appropriately designed to take into account the climatic and topographic conditions of the site.

Residential Character and Identity

- 180** Residential development adjacent to a Residential Historic (Conservation) Zone, should form a transition between the Residential Historic (Conservation) Zone and the adjacent Zone and should be of a bulk and scale that complements the built form within the Residential Historic (Conservation) Zone.
- 181** Residential development should minimise the impact of driveways and garaging on the character of the existing streetscapes and maximise opportunity for soft landscaping.
- 182** Multi-unit development (greater than 10 dwellings) on large sites should address both the public and private realm through the inclusion of public art, good urban design and landscape features.

Landscaping

- 220** Residential development should incorporate soft landscaping of a scale and intensity to offset built form and to reinforce the established garden and mature tree lined character of the City.
- 221** The landscaping of development in residential zones should:
 - (a) enhance residential amenity;
 - (b) screen storage, service and parking areas;
 - (c) provide protection from sun and wind;
 - (d) not unreasonably affect adjacent land by shadow; and

- (e) preferably incorporate the use of local indigenous plant species.

Private Open Space

224 Private open space should be located and designed:

- (a) to be accessed directly from the internal living areas of the dwelling;
- (b) generally at ground level to the side or rear of a dwelling and screened for privacy;
- (c) to take advantage of but not adversely affect natural features of the site;
- (d) to minimise overlooking from adjacent buildings;
- (e) to achieve where possible, separation from adjoining sites;
- (f) where possible, to have a northerly aspect to provide for comfortable year-round use;
- (g) to not be significantly shaded during winter by the associated dwelling or adjacent development;
- (h) to be shaded in summer, where possible; and
- (i) to retain any significant vegetation.

225 Dwellings (other than residential development in the form of apartments within a multi storey building) should have associated private open space of sufficient area, shape and gradient to be functional and capable of meeting the likely needs of the occupant(s) (taking into consideration the location of the dwelling and the dimensions and gradient of the site) and should be in accordance with the following:

- (a) a dwelling with a site area of 250 square metres or greater, 20 per cent of the site area should be private open space, of which one portion should be equal to or greater than 10 per cent of the site area and have a minimum dimension of 4 metres; or
- (b) a dwelling with a site area of less than 250 square metres, a minimum of 35 square metres should be private open space, of which one portion should have an area of 16 square metres and a minimum dimension of 4 metres; and
- (c) in either of the circumstances described above, have a maximum gradient of 1 in 10.

226 Residential development in the form of apartments within a multi storey building should have associated private open space of sufficient area and shape to be functional and capable of meeting the likely needs of the occupant(s) and should be in accordance with the following requirements:

- (a) studio (no separate bedroom) or one bedroom, a minimum area of 10 square metres of private open space;
- (b) two bedrooms, a minimum area of 12 square metres of private open space; or
- (c) three bedrooms or greater; a minimum area of 15 square metres of private open space.

227 A lesser amount of private open space may be considered in circumstances where:

- (a) the equivalent amount of private open space is provided in the form of communal open space, which is accessible to all occupants of the development; or
- (b) the development is directly adjacent to large areas of useable public open space, such as Felixstow Reserve, the Parklands and the River Torrens Linear Park, which can be easily accessed by all occupants of the development.

Communal Open Space

231 Communal open space should be shared by more than one dwelling, not be publicly accessible and exclude:

- (a) private open space;
- (b) public rights of way;
- (c) private streets;
- (d) parking areas and driveways;
- (e) service and storage areas; and
- (f) narrow or inaccessible strips of land.

232 Communal open space should only be located on elevated gardens or roof tops where the area and overall design is useful for the recreation and amenity needs of residents and where it is designed to:

- (a) address acoustic, safety, security and wind effects;
- (b) minimise overlooking into habitable room windows or onto the useable private open space of other dwellings;
- (c) facilitate landscaping and/or food production; and
- (d) be integrated into the overall facade and composition of buildings.

Site Facilities and Storage

233 Site facilities for group dwellings and residential flat buildings of greater than six dwellings should include:

- (a) mail box facilities located close to the major pedestrian entrance to the site;
- (b) bicycle parking for residents and visitors;
- (c) household waste and recyclable material storage areas away from dwellings; and
- (d) external clothes drying areas, which are readily accessible to each dwelling and complement the development and streetscape character, for dwellings which do not incorporate ground level private open space.

Visual Privacy

234 In areas where buildings of 3 or more storeys are contemplated, direct overlooking into habitable room windows or onto the useable private open spaces of other dwellings from upper level windows, external balconies, terraces and decks should be minimised through the adoption of one or more of the following methods and may be supplemented by landscaping:

- (a) building layout;
- (b) location and design of windows and balconies;
- (c) screening devices; or
- (d) adequate separation.

Medium and High Rise Development (3 or More Storeys)

OBJECTIVES

- Objective 60:** Medium and high rise development that provides housing choice and employment opportunities.
- Objective 61:** Residential development that provides a high standard of amenity and adaptability for a variety of accommodation and living needs.
- Objective 62:** Development that is contextual and responds to its surroundings, having regard to adjacent built form and character of the locality and the Desired Character for the Zone and Policy Area.
- Objective 63:** Development that integrates built form within high quality landscapes to optimize amenity, security and personal safety for occupants and visitors.

Design and Appearance

- 260** Buildings should be designed to respond to key features of the prevailing local context within the same zone as the development. This may be achieved through design features such as vertical rhythm, proportions, composition, material use, parapet or balcony height, and use of solid and glass.
- 261** In repetitive building types, such as row housing, the appearance of building facades should provide some variation, but maintain an overall coherent expression such as by using a family of materials, repeated patterns, facade spacings and the like.
- 262** Windows and doors, awnings, eaves, verandas or other similar elements should be used to provide variation of light and shadow and contribute to a sense of depth in the building façade.
- 263** Buildings should:
 - (a) achieve a comfortable human scale at ground level through the use of elements such as variation in materials and form, building projections and elements that provide shelter (for example awnings, verandas, and tree canopies);
 - (b) be designed to reduce visual mass by breaking up the building façade into distinct elements;
 - (c) ensure walls on the boundary that are visible from public land include visually interesting treatments to break up large blank facades.
- 266** Balconies should be integrated into the overall architectural form and detail of the development and should:
 - (a) utilise sun screens, pergolas, louvres, green facades and openable walls to control sunlight and wind;
 - (b) be designed and positioned to respond to daylight, wind, and acoustic conditions to maximise comfort and provide visual privacy;
 - (c) allow views and casual surveillance of the street while providing for safety and visual privacy of nearby living spaces and private outdoor areas;
 - (d) be of sufficient size, particularly depth, to accommodate outdoor seating.

Street Interface

- 267** Development facing the street should be designed to provide attractive, high quality and pedestrian friendly street frontage(s) by:

- (a) incorporating active uses such as shops or offices, prominent entry areas for multi-storey buildings (where it is a common entry), habitable rooms of dwellings, and areas of communal public realm with public art or the like where consistent with the Zone and/or Policy Area provisions;
- (b) providing a well landscaped area that contains a deep soil zone space for a medium to large tree in front of the building (except in a High Street Policy Area or other similar location where a continuous ground floor façade aligned with the front property boundary is desired).

One way of achieving this is to provide a 4 metre x 4 metre deep soil zone area in front of the building;

- (c) designing building façades that are well articulated by creating contrasts between solid elements (such as walls) and voids (for example windows, doors and balcony openings);
- (d) positioning services, plant and mechanical equipment (such as substations, transformers, pumprooms and hydrant boosters, car park ventilation) in discreet locations, screened or integrated with the façade;
- (e) ensuring ground, undercroft, semi-basement and above ground parking does not detract from the streetscape;
- (f) minimising the number and width of driveways and entrances to car parking areas to reduce the visual dominance of vehicle access points and impacts on street trees and pedestrian areas.

268 Common areas and entry points of the ground floor level of buildings should be designed to enable surveillance from public land to the inside of the building at night.

269 Entrances to multi-storey buildings should:

- (a) be oriented towards the street;
- (b) be visible and clearly identifiable from the street, and in instances where there are no active or occupied ground floor uses, be designed as a prominent, accentuated and welcoming feature;
- (c) provide shelter, a sense of personal address and transitional space around the entry;
- (d) provide separate access for residential and non-residential land uses;
- (e) be located as close as practicable to the lift and/or lobby access;
- (f) avoid the creation of potential areas of entrapment.

270 To contribute to direct pedestrian access and street level activation, the finished ground level of buildings should be no more than 1.2 metres above the level of the footpath, except for common entrances to apartment buildings which should be at ground level or universally accessible.

271 Dwellings located on the ground floor with street frontage should have individual direct pedestrian street access.

Dwelling Configuration

275 Buildings comprising more than 10 dwellings should provide a variety of dwelling sizes and a range in the number of bedrooms per dwelling.

276 Dwellings located on the ground floor with street frontage should have habitable rooms with windows overlooking the street or public realm.

- 277** Dwellings with 3 or more bedrooms, should, where possible, have the windows of habitable rooms overlooking internal courtyard space or other public space.
- 281** Development of 5 or more storeys, or 21 metres or more in building height (excluding the rooftop location of mechanical plant and equipment), should be designed to minimise the risk of wind tunnelling effects on adjacent streets by adopting one or more of the following:
- (a) a podium at the base of a tall tower and aligned with the street to deflect wind away from the street;
 - (b) substantial verandas around a building to deflect downward travelling wind flows over pedestrian areas;
 - (c) the placement of buildings and use of setbacks to deflect the wind at ground level.
- 282** Deep soil zones should be provided to retain existing vegetation or provide areas that can accommodate new deep root vegetation, including tall trees with large canopies.

One way of achieving this is in accordance with the following table:

Site area	Minimum deep soil area	Minimum dimension	Tree/ deep soil zones
<300m ²	10m ²	1.5 metres	1 small tree/10m ² deep soil
300-1500m ²	7% site area	3 metres	1 medium tree/30m ² deep soil
>1500m ²	7% site area	6 metres	1 large or medium tree/60m ² deep soil

Tree size and site area definitions	
Small tree	< 6 metres mature height and < less than 4 metres canopy spread
Medium tree	6-12 metres mature height and 4-8 metres canopy spread
Large tree	12 metres mature height and > 8 metres canopy spread
Site area	The total area for development site, not average area per dwelling

- 283** Deep soil zones should be provided with access to natural light to assist in maintaining vegetation health.

Regulated Trees

OBJECTIVES

Objective 118: The conservation of regulated trees that provide important aesthetic and/or environmental benefit.

Objective 119: Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:

- (a) significantly contributes to the character or visual amenity of the locality;
- (b) indigenous to the locality;
- (c) a rare or endangered species;
- (d) an important habitat for native fauna.

PRINCIPLES OF DEVELOPMENT CONTROL

409 Development should have minimum adverse effects on regulated trees.

410 A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:

- (a) the tree is diseased and its life expectancy is short;
- (b) the tree represents a material risk to public or private safety;
- (c) the tree is causing damage to a building;
- (d) development that is reasonable and expected would not otherwise be possible;
- (e) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree.

411 Tree damaging activity other than removal should seek to maintain the health, aesthetic appearance and structural integrity of the tree.

Significant Trees

OBJECTIVE

Objective 120: The conservation of significant trees in Metropolitan Adelaide which provide important aesthetic and environmental benefit.

Trees are a highly valued part of the Metropolitan Adelaide environment and are important for a number of reasons including high aesthetic value, conservation of biodiversity, provision of habitat for fauna, and preservation of original and remnant vegetation.

While indiscriminate and inappropriate significant tree removal should be generally prevented, the conservation of significant trees should occur in balance with achieving appropriate development.

PRINCIPLES OF DEVELOPMENT CONTROL

412 Where a significant tree:

- (a) makes an important contribution to the character or amenity of the local area; or
- (b) is indigenous to the local area and its species is listed under the National Parks and Wildlife Act as a rare or endangered native species; or
- (c) represents an important habitat for native fauna; or
- (d) is part of a wildlife corridor or a remnant area of native vegetation; or
- (e) is important to the maintenance of biodiversity in the local environment; or
- (f) forms a notable visual element to the landscape of the local area,

development should preserve these attributes.

413 Development should be undertaken with the minimum adverse affect on the health of a significant tree.

414 Significant trees should be preserved and tree-damaging activity should not be undertaken unless:

- (a) in the case of tree removal;

- (1) (i) the tree is diseased and its life expectancy is short; or
- (ii) the tree represents an unacceptable risk to public or private safety; or
- (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area; or
- (iv) the tree is shown to be causing or threatening to cause substantial damage to a substantial building or structure of value; and

all other reasonable remedial treatments and measures have been determined to be ineffective.

- (2) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.

(b) in any case:

- (i) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree; or
- (ii) the work is required due to unacceptable risk to public or private safety; or
- (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area; or
- (iv) the tree is shown to be causing, or threatening to cause damage to a substantial building or structure of value; or
- (v) the aesthetic appearance and structural integrity of the tree is maintained; or
- (vi) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activities occurring.

415 Development involving ground work activities such as excavation, filling, and sealing of surrounding surfaces (whether such work takes place on the site of the tree or otherwise), should only be undertaken where the aesthetic appearance, health and integrity of the significant tree, including its root system, will not be adversely affected.

DISTRICT CENTRE (NORWOOD) ZONE

Introduction

The objectives and principles of development control that follow apply to the District Centre (Norwood) Zone shown on [Maps NPSP/9 and 10](#). Further principles of development control also apply to policy areas that are relevant to the zone. The provisions for the zone and its related policy areas are additional to the City Wide provisions expressed for the whole of the council area.

The District Centre (Norwood) Zone contains the following policy areas, shown on [Maps NPSP/15 and 16](#) and Concept Plan [Map Fig DCe/1](#):

Retail Core
The Parade East
The Parade West

OBJECTIVES

- Objective 1:** A centre that accommodates a range of retail facilities, offices, consulting rooms, and cultural, community, public administration, entertainment, educational, religious and residential facilities to serve the community and visitors within the surrounding district.
- Objective 2:** Development of a visually and functionally cohesive and integrated district centre.
- Objective 3:** Integrated, mixed-use, medium rise buildings with ground floor uses that create active and vibrant streets with commercial and/or residential development above.
- Objective 4:** Buildings sited to provide a continuous and consistent low-scale building edge with verandahs/awnings over the public footpath and buildings designed with frequently repeated frontage form and narrow tenancy footprints.
- Objective 5:** Amalgamation of allotments into larger sites to optimise co-ordinated development options for the land, particularly where it will facilitate a cohesive built form, maximise shared car parking arrangements and minimise the number of vehicle access points.
- Objective 6:** Development that contributes to the desired character of the zone.

DESIRED CHARACTER

The District Centre (Norwood) Zone is a cosmopolitan area of diverse townscape interest and character, focussed around The Parade, with attractive pedestrian spaces generating a high level of activity, visual appeal and community interaction. It will continue to serve a large residential district, which extends beyond the council boundaries, and will contain a mix of retail, business, administrative, civic, recreational, entertainment, community, medical, health, fitness and residential land uses.

Retail development will be the focus of land use activities at ground level, with The Parade being reinforced as an Activity Centre of eastern metropolitan significance for food, fashion and specialty shops. Above ground level, other business uses such as offices and consulting rooms, as well as residential uses, will be developed. The development of large floor area retailing will be contained primarily within the Retail Core Policy Area and be located behind smaller specialty shops along The Parade, in order to maintain the 'high street' character and vibrancy of The Parade.

Development which incorporates a significant residential component (more than 20 dwellings) will provide a range of dwelling sizes and a proportion of affordable housing. Short term residential accommodation, in the form of serviced apartments and tourist accommodation, is also desired in locations where it does not compromise the amenity of longer term residents.

Outdoor dining, which is complementary to existing businesses, is encouraged along The Parade frontages and, on corner sites, may extend into side streets where it can be accommodated with minimal disruption to pedestrian and vehicular movements and where it does not unreasonably impact

on the amenity enjoyed by occupants of nearby residences. Opportunities to create upper level spaces above the ground floor level of buildings, which overlook The Parade and provide further opportunities for outdoor dining will be encouraged, where it will contribute to the vibrancy of The Parade.

Entertainment venues, such as cinemas and theatres, are envisaged within the zone, however, venues which operate as a nightclub or discotheque, or venues which offer adult entertainment involving the display, exhibition or performance of any entertainment or act which is sexually explicit, are not a desired form of land use within the zone.

Premises which offer by sale or hire, adult products and services, including visual products, objects and publications of a sexually explicit nature and tattoo parlours, are not a desired form of land use within the zone.

New buildings will be sited and designed to reinforce the high street character of The Parade, particularly east of Osmond Terrace. The Norwood Town Hall (and Clock Tower), the Norwood Hotel at the corner of Osmond Terrace and The Parade and the spires of the former church and church on the northern corners of the intersection of The Parade and Portrush Road, will remain as prominent visual elements along The Parade.

A range of building heights is anticipated within the Zone. East of Osmond Terrace, building heights will be guided by the range of heights indicated on Concept Plan [Fig DCe/1](#) and further detailed on Concept Plans [Fig DCe/2](#), [Fig DCe/3](#) and [Fig DCe/4](#).

The scale and massing of taller building elements within the Zone will be designed having regard to the visual, overlooking and overshadowing impacts on residential properties in adjacent Residential Zones, whilst recognising that there is a need to carefully balance the level of amenity expected by nearby residents, with the nature of development desired within the Zone.

The character of The Parade will be reinforced by a well-defined low to medium scale built form edge abutting the footpath and continuing the established width, rhythm and pattern of facades that generally support a variety of tenancies with narrow frontages. To maintain a human scale at street level, the upper levels of buildings will be recessed behind the dominant two (2) and three (3) storey podium/street wall heights.

Although demolition control of existing shopfronts and facades which are not identified as State or Local Heritage Places is not legislated, where they contribute to the historical built form character of The Parade, their integration into new development is a desirable outcome. The scale, siting and design of new development will be influenced by the desire to maintain the prominence and integrity of adjacent or abutting State or Local Heritage Places and in some cases, may temper the ability to achieve the minimum and/or maximum allowable building parameters.

The front and side elevations of buildings (or portions of buildings) fronting The Parade and extending into adjacent side streets, will incorporate materials and finishes of a high quality and complement (without replicating) the materials and finishes used in the historic building fabric and will avoid visible expanses of tilt-up concrete walling. Shopfronts will incorporate visible entry foyers and display windows and will not be secured through the use of roller shutters.

The creation of new vehicle access points from The Parade is not desired and where possible, vehicle access should be from side streets and rear access lanes. The level of public car parking spaces will be increased over time, particularly in association with any expansion of development within the Retail Core, to ensure that good accessibility to The Parade as a destination location is maintained.

Pedestrian movement in the District Centre (Norwood) Zone will continue to be concentrated along The Parade frontages and along the north/south pedestrian ways linking the Webbe Street car park to the north and James Coke Park to the south. Development will ensure that pedestrian movement is not unduly obstructed by the placement of either fixed or moveable items on footpaths or along pedestrian access ways. The existing open nature of the pedestrian link on the southern side of The Parade will be maintained.

Development will enhance the pedestrian environment of The Parade and adjacent secondary streets, with verandahs, pergolas and awnings extending over the footpath, to provide pedestrian protection and achieve a human scale and a visually interesting environment. Where there is a dominant existing verandah height, this will be continued by new development. Where possible, structures over the footpath will be cantilevered to minimise the potential for damage from vehicles and the like.

Cycling is an increasingly popular form of transport and recreation, therefore development on public and private land will consider the needs of cyclists, in terms of providing secure bicycle parking and storage facilities and creating linkages through the District Centre, which can be shared safely by both pedestrians and cyclists. Larger scale commercial developments will also provide appropriate end of journey facilities such as showers and change rooms.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:

Affordable housing
 Aged persons accommodation (but not including a nursing home)
 Bank
 Child care centre
 Civic centre
 Consulting room
 Discount department store (within the Retail Core Policy Area)
 Dwellings above ground level
 Educational establishment
 Entertainment venue (but not including nightclubs, discotheques and adult entertainment premises)
 Hotel
 Indoor recreation centre (including health, fitness and personal training facilities)
 Library
 Licensed premises (but not including nightclubs, discotheques and adult entertainment premises)
 Office
 Place of worship
 Pre-school
 Primary school
 Restaurant
 Serviced apartments
 Shop or group of shops
 Student accommodation
 Supported accommodation
 Supermarket (within the Retail Core Policy Area)
 Tourist accommodation.

- 2 Development listed as non-complying is generally inappropriate.
- 3 Development should complement the function of the zone as a district wide centre for retailing, comprising primarily ground floor retailing, with other business uses and residential uses located above ground level and at the periphery of the zone.
- 4 Development incorporating large floor area retail tenancies, such as discount department stores or supermarkets, should generally be located within the Retail Core Policy Area.
- 5 Where a development comprises more than two (2) storeys above natural ground level, the levels above the ground and first floor levels should comprise residential accommodation (which may include serviced apartments).
- 6 Where residential accommodation above ground floor level non-residential uses is proposed, the average floor area of the residential component should not exceed 100 square metres per dwelling.

Form and Character

- 7 Development should be consistent with the desired character for the zone.
- 8 The height of buildings and structures should be consistent with the heights specified in the relevant policy area and as indicated on Concept Plan [Fig DCE/1](#).
- 9 To minimise building massing at the interface with residential development outside of the zone, buildings should be constructed within a building envelope provided by a 30 degree plane, measured from a height of 3 metres above natural ground level at the zone boundary (except where this boundary is a primary road frontage), as illustrated in Figure 1:

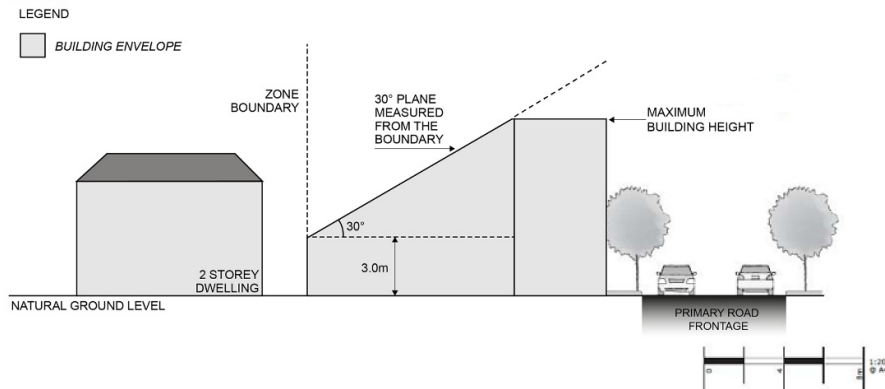


Figure 1

- 10 Development located above the maximum allowable podium/street wall height should be set back from the street wall boundary in order to:
 - (a) reinforce a lower scale (2 or 3 storey) building form along the primary and secondary street frontages;
 - (b) minimise overshadowing of the public realm; and
 - (c) maintain the prominence and integrity of heritage buildings;

and in order to achieve these aims, the set-back should generally be in the order of 6 metres from the street wall boundary.
- 11 The front set-back of new buildings at ground level should maintain the traditional pattern of development abutting street boundaries to define the street space.
- 12 Pedestrian spaces should be developed with an open character, which includes high quality landscaping, and along public street frontages should incorporate pedestrian shelter.
- 13 New buildings located along The Parade and extending into adjacent side streets, should include a verandah or canopy structure (cantilevered where possible) over the footpath, which avoids damage or interference with the growth of street trees and should be of a height consistent with the verandah or canopy of adjacent buildings.
- 14 The finished floor level of the ground floor of buildings and any associated outdoor dining areas, should be the same as the level of the adjacent footpath and stepped where required, to enable all access points to match the existing footpath level.
- 15 The ground level facades of non-residential or mixed-use buildings should incorporate materials which are transparent or glazed a minimum of 50% of the width of the façade and should not be secured with roller shutters, to promote active street frontages and maximise passive surveillance.

- 16 On-site car parking should be provided behind, below, or above uses on the ground floor of buildings which front The Parade. Where this is not possible, it should not interrupt the continuity of the streetscape or pedestrian movements and should be screened from the street.
- 17 Vehicle parking should be provided in accordance with the rates set out in [Table NPSP/9](#) – Off Street Vehicle Parking Requirements for Non-Residential Land Uses or [Table NPSP/9A](#) – Off Street Vehicle Parking Requirements for Designated Areas (whichever applies).
- 18 Advertisements should reflect the role of the District Centre (Norwood) Zone as the centre for retail, business, cultural and municipal activities for the city, but should nevertheless be designed so as not to adversely affect the historic character of The Parade.

The following kinds of advertisements are appropriate:

- (a) below canopy level: flush wall signs, business plates, painted wall signs and horizontal projecting signs;
- (b) canopy level: fascia signs; and
- (c) above canopy level: flush wall signs and painted wall signs within parapet height.;

All other advertisements, including those at roof level, are inappropriate.

Complying Development

- 19 Complying developments are prescribed in schedule 4 of the *Development Regulations 2008*.

In addition, the following forms of development (except where the development is non-complying) are complying:

- (a) Maintenance or repair to a Local Heritage Place, provided that there is no change to the external appearance of the building.
- (b) Work undertaken within a Local Heritage Place that does not increase the total floor area of the building and does not alter the external appearance of the building.
- (c) A change of use to a shop, office, consulting room or any combination of these uses where all of the following are achieved:
 - (i) the area to be occupied by the proposed development is located in an existing building and is currently used as a shop, office, consulting room or any combination of these uses;
 - (ii) the building is not a State heritage place;
 - (iii) it will not involve any alterations or additions to the external appearance of a local heritage place as viewed from a public road or public space;
 - (iv) if the proposed change of use is for a shop that primarily involves the handling and sale of foodstuffs, it achieves either (A) or (B):
 - (A) all of the following:
 - (i) areas used for the storage and collection of refuse are sited at least 10 metres from any Residential Zone boundary or a dwelling (other than a dwelling directly associated with the proposed shop);
 - (ii) if the shop involves the heating and cooking of foodstuffs in a commercial kitchen and is within 30 metres of any Residential Zone boundary or a dwelling (other than a dwelling directly associated with the proposed shop),

an exhaust duct and stack (chimney) exists or is capable of being installed for discharging exhaust emissions;

- (B) the development is the same or substantially the same as a development, which has previously been granted development approval under the *Development Act 1993* or any subsequent Act and Regulations, and the development is to be undertaken and operated in accordance with the conditions attached to the previously approved development;
- (v) if the change in use is for a shop with a gross leasable floor area greater than 250 square metres and has direct frontage to an arterial road, it achieves either (A) or (B):
 - (A) the primary vehicle access (being the access where the majority of vehicles access/egress the site of the proposed development) is from a road that is not an arterial road;
 - (B) the development is located on a site that operates as an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared;
- (vi) off-street vehicular parking is provided in accordance with the rate(s) specified in [Table NPSP/9 – Off Street Vehicle Parking Requirements for Non-Residential Land Uses](#) or the desired minimum rate in [Table NPSP/9A – Off Street Vehicle Parking Requirements for Designated Areas](#) (whichever table applies) to the nearest whole number, except in any one or more of the following circumstances:
 - (A) the building is a local heritage place;
 - (B) the development is the same or substantially the same as a development, which has previously been granted development approval under the *Development Act 1993* or any subsequent Act and Regulations, and the number and location of parking spaces is the same or substantially the same as that which was previously approved;
 - (C) the development is located on a site that operates as an integrated complex containing two or more tenancies (and which may comprise more than one building) where facilities for off-street vehicle parking, vehicle loading and unloading, and the storage and collection of refuse are shared.

Non-complying Development

20 The following kinds of development are **non-complying** in the District Centre (Norwood) Zone:

The change in the use of land to, or the erection, construction, conversion, alteration of or addition to a building for the purposes of, the following:

Advertisements which are:

- (a) roof-mounted advertisements;
- (b) parapet-mounted advertisements which protrude above the top of the parapet; and
- (c) free-standing advertisements, any part of which, including the supporting structure, is greater than six metres in height above adjacent footpath level or ground level, whichever is the lower

Adult entertainment premises
Adult products and services premises
Builder's Yard
Crash Repair Workshop
Electricity Sub-station
Hospital

Industry
Junk Yard
Major Public Service Depot
Motor Repair Station
Nursing Home
Petrol Filling Station
Road Transport Terminal
Service Trade Premises
Store
Timber Yard
Warehouse

Retail Core Policy Area

The following objectives, desired character statement and principles of development control apply in the Retail Core Policy Area shown on Policy Area [Map NPSP/16](#). These provisions are additional to those expressed for the District Centre (Norwood) Zone and the whole of the Council area in the City Wide section.

OBJECTIVES

Objective 1: Development providing major retail facilities including discount department stores, and supermarkets, specialty shops, restaurants, cafes, community, civic, health, fitness, recreational and entertainment facilities, with opportunities for other business uses, such as offices and consulting rooms and medium to high density residential development, located above ground level retailing.

Objective 2: Development that contributes to the desired character of the policy area.

DESIRED CHARACTER

The Retail Core Policy Area is the retail 'heart' of the District Centre (Norwood) Zone and will continue to provide a range of primarily retail uses including specialty shops, supermarkets, discount department stores, restaurants and cafes, all within an integrated pedestrian environment. The provision of dwellings above ground-level retailing is desirable, as are business uses, such as offices and consulting rooms.

Within the Retail Core Policy Area, the Key Development Areas are shown on Concept Plan [Fig DCe/1](#) and further detailed on Concept Plans [Figs DCe/2, 3 and 4](#).

Area A

Area A, shown on Concept Plan [Fig DCe/2](#), provides the opportunity for a large floor area retail facility, such a supermarket or discount department store, located behind specialty shops along the northern side of The Parade and medium to high density residential development located above ground level.

Development should establish an appropriate built form transition to the adjacent State Heritage listed Norwood Town Hall (and Clock Tower) and to the lower scale buildings located along Edward Street.

Within Area A, the height of new development along The Parade frontage will be limited to the existing street wall heights, with the set-back of taller building elements being progressively increased as the height of the building increases, so as to not obstruct views of, or diminish the prominence of, the Norwood Town Hall Clock Tower.

Within Area A, development adjacent to the Edward Street frontage will provide commercial land uses at ground level and will be limited in height to three (3) storeys, with the highest level being a small recessive element, which is set back further from the allotment frontage than the lower levels.

It is envisaged that the existing public car parking facility between Webbe Street and Harris Street will be expanded to provide four (4) levels of car parking, with the fourth level being an open air rooftop deck. Any levels over two (2) storeys in height will be set back from the Harris Street frontage to ensure that the streetscape impact of the structure is minimised.

A pedestrian link between The Parade pedestrian crossing and the Webbe Street car park will be maintained in any future development of the Norwood Place complex.

Area B

Area B, shown on Concept Plan [Fig DCe/3](#), provides some opportunities for mixed use development on amalgamated sites, behind and adjacent to the Local Heritage Places located on Church Street and The Parade, between Osmond Terrace and Church Street. Development within this area will be respectful of its proximity to these Local Heritage Places, as well as its proximity to the State Heritage listed former Baptist Church on the corner of Church Street and The Parade and the Norwood Hotel on the opposite corner of Osmond Terrace and The Parade.

Any future development within Area B will ensure that the existing bluestone-lined pedestrian walkway between 126 and 128 The Parade is retained as a visible element in any such development.

Within Area B, taller building elements will be set back an appropriate distance from the southern boundary of the Area, in order to minimise the visual and overshadowing impacts on the adjacent residential zone.

Development in this Area should extend The Parade's active street frontage along the northern portion of the Osmond Terrace and the Church Street frontages, which may provide opportunities for outdoor dining. Further south along the Osmond Terrace frontage, development should comprise residential buildings of between two (2) and three (3) storeys and provide an appropriate transition in scale to buildings located within the adjacent Residential Zone.

Area C

Area C, shown on Concept Plan [Fig DCe/4](#), is located behind existing shopfronts along the southern side of The Parade, between Edward Street and George Street. It provides a significant opportunity for the development of a discount department store or other large floor area retail facility, specialty shops and medium to high density residential development located above ground level, provided that an appropriate built form transition is achieved, scaling down towards the Residential Zone to the south and development along Edward and George Streets.

The redevelopment of the existing supermarket site will contribute to an increase in the provision of public car parking, in order to match the demand associated with the anticipated increase in retail activity within the Area.

Development adjacent to the Edward Street frontage will be of a lower scale and intensity than within the core of Area C and will provide opportunities for retail and/or residential land uses. Buildings along this frontage will be limited in height to three (3) storeys, with the highest level being a small recessive element, which is set back further from the allotment frontage than the lower levels. A front set-back will be established in order to provide opportunities for landscaping or for the establishment of small outdoor dining areas. There will be no additional vehicle access points created along this section of Edward Street, in order to minimise disruption to pedestrian and vehicle movements.

Development adjacent to the George Street frontage will be limited in height to three (3) storeys, which may be built to the front allotment boundary. Land uses will be commercial in nature, as any commercial loading/unloading facilities associated with the development of the site are likely to be accessed via George Street.

The scale and massing of building elements will be designed having regard to the close proximity of residential properties in the adjacent Residential Zone to the south and James Coke Park, which is a highly utilised park serving both visitors to the District Centre and the local community. In order to minimise the visual and overshadowing impacts of tall buildings, the mass of the upper levels of a building or buildings (exceeding three (3) storeys in height) should be 'broken up' into well-articulated tower elements, which will be set back an appropriate distance from the southern boundary of the Area.

Pedestrian access between The Parade and James Coke Park will continue to be maintained and will not be obstructed through the placement of buildings and/or structures (either fixed or moveable). The northern section of this pedestrian access will remain uncovered, in order to maintain an open feel.

Development should improve east/west pedestrian connectivity through Area C and the activation of the rear of buildings fronting The Parade will be encouraged.

Any internal mall areas should, where practicable, include land uses which encourage a level of evening activity, such as cafes and outdoor dining, which pedestrians and patrons can enjoy in a safe environment.

Development which requires heavy vehicle access and loading bays will be designed to ensure that vehicle movements do not compromise pedestrian safety and that vehicles can enter and exit the site in a forward direction, without the need for heavy vehicles to queue on surrounding public streets.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be consistent with the desired character for the policy area.
- 2 The height of development within the Retail Core Policy Area should be consistent with the range of building heights shown on Concept Plan [FigDCe/1](#) and as described in the Desired Character Statement.
- 3 Development should maintain a pedestrian scale at street level and should include a clearly defined podium or street wall fronting The Parade (and extending into side streets) with a maximum building height of 3 storeys or 11.5 metres.
- 4 Development within Areas A, B and C should be guided by Concept Plans [Fig DCe/2](#), [Fig DCe/3](#) and [Fig DCe/4](#). The Concept Plans should be read in conjunction with the Desired Character Statement and all of the objectives and principles of development control, which are relevant to each site.