WH Waymouth Trust c/MasterPlan Pty Ltd

Staged development including demolition of existing building and construction of seventeen (17) storey student accommodation building with communal student facilities and rooftop garden.

124 Waymouth Street, Adelaide

020/A004/19

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OVERVIEW

Application No	020/A004/19
Unique ID/KNET ID	3858 / 2019/00792/01
Applicant	Wee Hur C/- MasterPlan, Graham Burns / Brown Falconer
Proposal	Staged development including demolition of existing building and construction of seventeen (17) storey student accommodation building with communal student facilities and rooftop garden.
Subject Land	124 Waymouth Street, Adelaide
Zone/Policy Area	Capital City Zone
Relevant Authority	SCAP – City of Adelaide greater than $10m
Lodgement Date	9 January 2019
Council	City of Adelaide
Development Plan	Consolidated 7 June 2018
Type of Development	Merit
Public Notification	Category 1
Referral Agencies	Adelaide Airport; Government Architect
Report Author	Lauren Talbot, Senior Planning Officer
RECOMMENDATION	Development Plan Consent

EXECUTIVE SUMMARY

The application is for the staged construction of a student accommodation building of 17-storeys comprising 787 beds.

The application is a merit, category 1 form of development which is subject to referrals to the Government Architect, City of Adelaide and Commonwealth Secretary for the Department of Transport and Regional Services.

The proposed development raises the following key planning issues:

- Building design and articulation and the visual impact of the building in the CBD setting, particularly the relatively long western elevation of the building which is visible from Light Square and the areas of glazing in the western elevation exposed to thermal impacts of summertime afternoon sun;
- The building frontage and its public realm interaction and connection to Waymouth Street;
- Amenity for occupants of the building including the size of student rooms and the availability of natural light and ventilation and the adequacy of common space areas including outdoor areas provided in lieu of private open space to resident apartments.

In terms of land use, building height, setbacks from site boundaries, the incorporation of sustainable design features, waste management access and site contamination the proposed development reasonably complies with all applicable policies.

The development is expected to make a positive contribution to the City skyline without imposing unfavourably on anticipated City form or on the scale and setting of its environs.

Overall the proposed development is considered to successfully address key planning, design and technical issues and is considered suitable for Development Plan Consent subject to planning conditions recommended in this report.

ASSESSMENT REPORT

1. BACKGROUND

1.1 Pre-Lodgement Process

The applicant engaged in the pre-lodgement service attending one PLP and one Design Review session. Through this process, the applicant received feedback from the key stakeholders ODASA, City of Adelaide and DPTI Planning. Some of the feedback received was incorporated into the final design for lodgement however no significant changes occurred over this time.

1.2 Amended Plans

On 21 March 2019, the applicant provided the State Commission Assessment Panel with a revised set of application plans (minor design changes and the addition of demolition of existing buildings to the application) to substitute the original application plan set. The substituted plan set responds to some of the issues previously raised by the Government Architect, the City of Adelaide and by DPTI. The addition of demolition to the application is accepted as a variation to the application pursuant to section 39(4) of the *Development Act 1993*.

2. DESCRIPTION OF PROPOSAL

Application details are contained in the ATTACHMENTS.

The applicant is applying for Development Plan Consent to construct (in a staged manner) a 17-storey student accommodation building with associated student amenities comprising 787 rooms, indoor common areas, a gated ground floor outdoor courtyard and a roof top garden. Specific details are outlined in the following table:

Land Use Description	Student Accommodation
Building Height	52.95m (not including parapet and plant screening)
Description of levels	Ground: Entry/foyer, office/admin area, storage rooms, services and waste rooms, loading area, bicycle entry/storage, study hub, lounge areas, courtyards, open plan seating/dining/games room, communal kitchen, cinema room, multi-purpose room. Level 1: Fitness/well-being room, study rooms and terrace, laundry, DDA room, 20 studio rooms, 8 ensuite rooms, 8-bed cluster room and common TV, kitchen and dining room. Levels 2-14: DDA room, 35 studio rooms, 8 ensuite rooms, 8-bed cluster room and common TV, kitchen and dining room. *Levels 12 & 13 have 2-less studio rooms with a breakout space and terrace in place of those rooms along the western side of the building.* Level 15: Sky-lounge area with terrace and study, urban farm/communal garden, 23 studio rooms, 8 ensuite rooms, 8-bed cluster rooms and common TV, kitchen and dining room. Level 16: Mezzanine lounge area, 23 studio rooms, 8 ensuite rooms, 8-bed cluster room and common TV, kitchen and dining room with terrace.

	Roof: Lift overrun and plant with screens
Apartment floor area (excluding balconies)	787 purpose built student accommodation beds • 518 Studio rooms: 15.6m² • 128 Ensuite rooms: 12.4m² • 16 cluster rooms: approx. 14m² per bed (incl. shared bathrooms) • 13 DDA rooms: 24.5m²
Site Access	• Pedestrian Access from Waymouth Street and from the right of way on the western boundary • Bicycle access – from Playhouse Lane • Vehicle Access (service vehicles) from Playhouse Lane and Western boundary from Waymouth Street
Car and Bicycle Parking	No car-parking 80 bicycle parking spaces
Encroachments	Canopy over entrance on Waymouth Street
Staging	Stage 1: Demolition Stage 2: Sub-structure construction Stage 3: Super-structure construction Stage 4: Architectural fit our and external facades

3. SITE AND LOCALITY

3.1 Site Description

The development site is located on the northern side of Waymouth Street, extending through to a secondary frontage to Playhouse Lane to the north. The site has a frontage of 30 metres to Waymouth Street and 31 metres to Playhouse Lane with a depth of 60m yielding a total area of approximately 1,855 square metres. There is direct vehicle access to the site from Playhouse Lane at the rear and from a narrow driveway from Waymouth Street along the western boundary.

The site is a single allotment, described as follows:

Lot No	Street	Suburb	Hundred	Title Reference
101	Waymouth	Adelaide	Adelaide	5610/549

The title contains an easement marked 'A' to the Minster for Infrastructure that is situated on the western boundary, approximately 26m in from the front boundary. The land also holds a right of way (in respect to the land marked 'Y') over the land marked 'B' on the adjoining allotment to the west which connects through to Light Square to the west. See Figure 1 below.

The land is currently developed with a three-storey, red brick office building facing Waymouth Street and an ancillary, at-grade carpark to the rear facing Playhouse Lane.

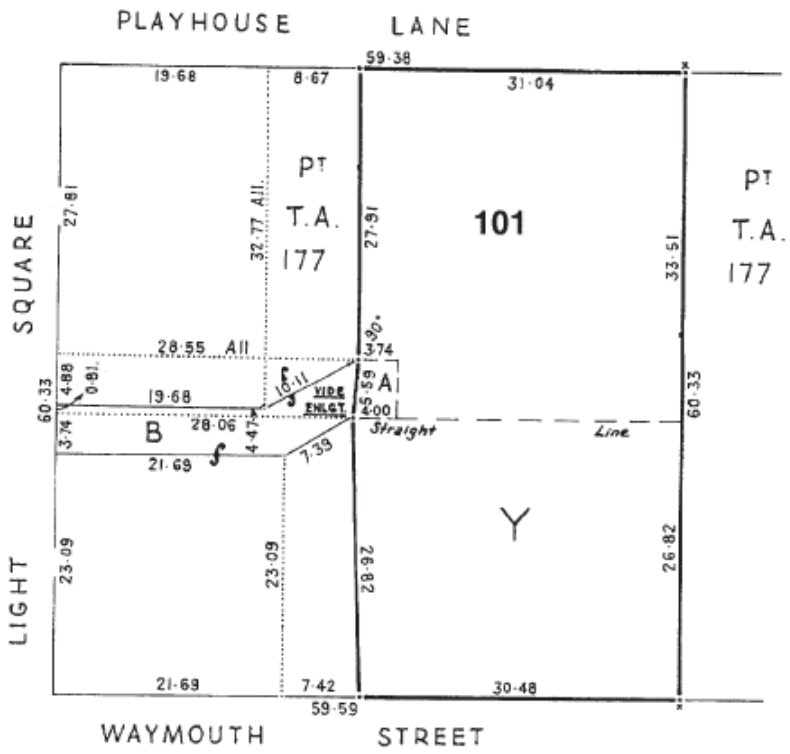

Figure 1- Certificate of Title

3.2 Locality

The immediate locality is characterised by low to mid-rise buildings to the south and west, with building heights increasing to high-rise further north and east. Land uses are a mix of commercial and various short term accommodation. Notable land uses within the vicinity of the site are as follows:

- 3, 5 and 8-storey mixed use office buildings to the immediate west;
- Light Square to the far west;
- 8-storey carpark and 8-storey commercial building to the immediate north of Playhouse Lane;
- Proposed 27 storey mixed use building to the immediate east currently under construction;
- 2-storey Queens Theatre building (State Heritage) to the far east of the subject site facing Playhouse Lane/Gilles Arcade;
- 17-storey mixed use apartment building to the far east;
- Two, 2-storey (Local Heritage) buildings to the south of Waymouth Street;
- 3-storey Youth Hostel accommodation to the south west.

Figure 2 – Location Map

4. COUNCIL COMMENTS or TECHNICAL ADVICE

4.1 City of Adelaide

- Existing boundary (back of path) levels must not be modified;
- The proposed development works may impact on public lighting within the proximity of the development site
- The doorway to the right of way opens directly into private road space- risk of safe passage if utilised as a pedestrian access point. Modifications to this area to improve pedestrian safety and amenity are necessary
- Waste management as proposed is supported
- Canopy over Waymouth Street complies with encroachment policy
- Studio and ensuite rooms do not cater for 'temporary disability'
- DDA rooms not dimensioned
- No 'evidence' to support adaptive re-use
- Minimal storage
- Height of balustrade on breakout area balcony to be reviewed
- Western façade should be reconsidered to include higher quality materials, greater articulation i.e. inclusion of green infrastructure and/or windows
- Clarification of 600mm setback from kerb of canopy to Playhouse Lane

4.2 Applicant Response

Improve pedestrian safety at western access point
The latest set of drawings addresses this concern by 'flipping' the gate so that it opens inwards. The note stating that the gate is egress only has also been removed. Refer Ground Floor Plan.

Studio and ensuite rooms do not cater for temporary disability
Neither Brown Falconer Architects nor MasterPlan are familiar with the term "temporary disability" in either the Development Plan or the Building Code of Australia. That is not to say that the rooms do not cater for persons with a temporary disability, but of course that will depend on the nature and severity of the disability.

DDA rooms not dimensioned
Every DDA room has been designed to the relevant standards and specifications to ensure that they conform to minimum entry door clearances, bathroom size, bed clearance and overall circulation space.

No 'evidence' to support adaptive re-use
The drawing set has always included a floor plan layout showing how the building could be adaptively reused. This layout is shown on" Typical Adaptive Re-use Floor Plan" on page 09 of the drawing set.

Minimal storage
Storage is provided under each bed, above the robes and in open shelving above the study desk. This detail can be seen on some of the images on drawing page 10.

Height of balustrade on breakout area balcony reviewed
The images on page 10 (Breakout Space - Level 12-13) and drawing page 11 shows this detail. BCA requirements for balustrades is 1.0 metre but the balustrades will be higher than this for safety and security reasons.

Western façade should be reconsidered to include higher quality materials, greater articulation i.e. inclusion of green infrastructure and/or windows
We are confident that the weave pattern will be noticeable and effective. The weave pattern will furthermore be tested and verified by the production of actual scale samples during design development. We invite SCAP to impose a condition to this effect on the Decision Notification Form.

Clarification of 600mm setback from kerb of canopy to Playhouse Lane
The canopy over Playhouse Lane has been deleted.

5. STATUTORY REFERRAL BODY COMMENTS

Referral responses are contained in the ATTACHMENTS.

5.1 Government Architect

The Government Architect (GA) has noted that the proposed building (by way of height and location) will be highly visible to the locality.

The GA is supportive of the expression and overall design intent of the building however raised the following specific concerns with the development:

- The variation in heights between the 'towers' could be increased to strengthen the design intent.
- The proportion of the central tower is considered at odds with the overall concept.
- The GA recommends further refinement of the buildings composition to better reflect the design intent.

- The GA is supportive of the ground level front courtyard and podium treatment however has suggested further refinement of the screening of this area to create an improved visual connection to Waymouth Street.
- Recommends a proto-type of the proposed concrete weave panels be developed at design stage to ensure the envisaged visual effect can be achieved. A condition is recommended where SCAP approves the final details of this detail.
- Suggest that the Playhouse Lane entrance be widened and the mid-site access point on the western boundary be opened up to improve permeability and connection with the city whilst balancing potential building management and CPTED issues.
- Concern with lack of communal break out space in many of the mid-level units. The size and location of the small break-out space along each corridor does not offer a high quality amenity for residents on these floors.
- To explore the opportunity to offer west facing outlook from large shared living spaces.
- Also concerned with the size and in-bound siting of the cluster room common areas.
- Concern that the overall Waymouth Street frontage still needs to be reviewed to ensure 'meaningful engagement' with Waymouth Street is achieved – including orientation, CPTED principles and microclimate control.
- West facing façade fin treatments for solar – need to provide diagrams to demonstrate how the solar loads will be managed.

5.2 Applicants Response

Building Height

Our client does not consider that it is necessary to vary building height and building form, noting that the building is made up of a number of building components which we believe appropriately contributes to what the Government Architect describes as "refinement of built form composition to deliver a bold and coherent outcome that convincingly reflects the design intent". Additional detailing has however been introduced to the western façade by inclusion of window hoods.

Better distribution communal spaces throughout building

Most of the proposals indoor and outdoor communal space is provided at Ground Floor level. Indeed, the majority of the site is set aside for communal use at this level, with 660 square metres internally and 700 square metres externally.

At Level 1, 280 square metres of internal floor space and 23 square metres of external floor space will be set aside for communal use. At Levels 2 to 14, there will be a generously proportioned lift lobby at the southern end of each floor, a 'Breakout Space' half way along the building and a common lounge/TV room/kitchen/dining room at the northern end.

The shared common areas at Levels 2 to 14 amounts to 60 square metres, which we consider to be generous. At Level 12, there will be a 35 square metre internal Breakout Space, with a 15 square metre external terrace. Level 13 will feature a 15 square metre Breakout Space.

At Level 15 there will be a 105 square metre Sky Lounge plus an 11 square metre terrace. In addition, there will be a 145 square metre Urban Farm together with a 50 square metre internal Mezzanine Lounge.

In total, the amended proposal delivers 2,099 square metres of Community Space throughout the building.

Front Courtyard
The front courtyard has been further refined to improve its appearance. This detail is best shown on Section A – Section Through Podium, showing a Feature Steel Frame in 50 millimetre x 50 millimetre black steel mesh. This space will be accessible from the Ground Floor Study Hub. The front courtyard will be landscaped as previously detailed on the Landscape Concept prepared by Hemisphere Design.

Solar Load Management
The façade design is further detailed on the 'Details' sheet prepared by Brown Falconer. The west facing windows will be protected from sunlight penetration by window hoods as detailed on the Shading Device Analysis sheet. These hoods are the same as those used for our client's Gray Street project. All west facing windows will furthermore be fitted with wind-out, double glazed awnings on windows to facilitate natural ventilation and improved solar performance.

The GA has acknowledged and supports the introduction of window hoods on the west elevation to improve the effectiveness of solar load management and also supports the provision of a gate to the adjoining laneway to the west.

5.3 Adelaide Airport

Adelaide Airport has advised that the proposed building height will exceed OLS by 9 metres and will require approval of the Department of Infrastructure, Regional Development and Cities. The adjoining approved development at 116 Waymouth Street is 35m above the OLS therefore it is not anticipated that there is will objections to approval for this building height.

6. PUBLIC NOTIFICATION

The application is a Category 1 development pursuant to Adelaide (City) Development Plan, Capital City Zone PDC 40.

7. POLICY OVERVIEW

The subject site is within the Capital City Zone, (no Policy Area) as described within the City of Adelaide Development Plan consolidated 7 June 2018. It should be noted the subject site is directly adjoining the Central Business Policy Area 13 to the east and the 'no-prescribed height' limit area as shown in Figure 3 below.

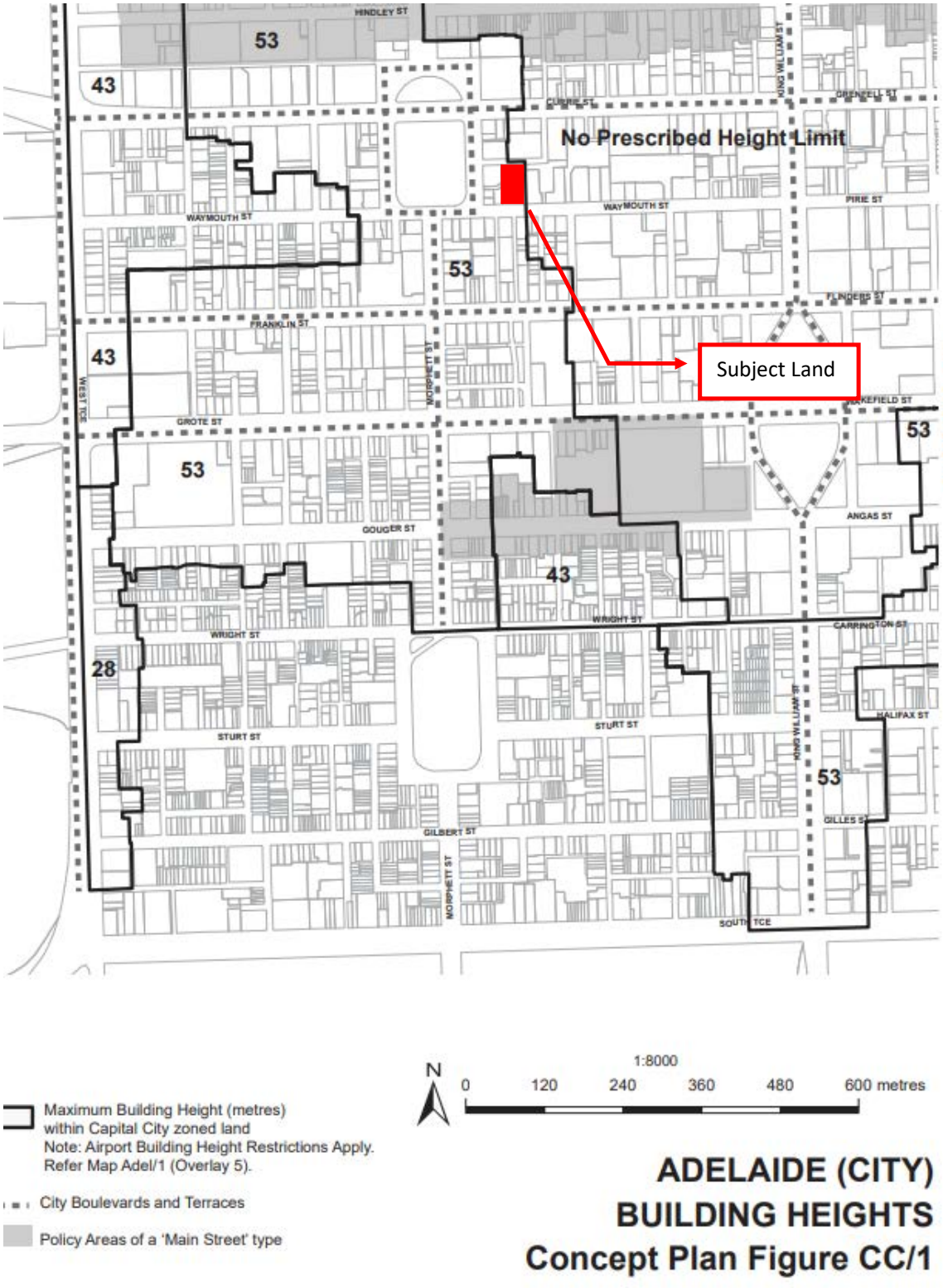

Figure 3 – Building Heights Map

7.1 Zone

The Capital City Zone is the cultural and economic hub for the State of South Australia. The Zone should encompass a variety of economic opportunities as well as provide for community, entertainment, education and tourism facilities. It is anticipated that an increased population residing in the Zone will complement the range of envisaged uses within the city and increase its vibrancy.

The following are highlighted as overarching objectives to be achieved by new development within the Zone:

- Provide a mix of commercial, retail, hospitality, entertainment and educational facilities with medium to high density living;
- New buildings to be of a high quality design, be durable, innovative and respond well to the context of its locality;
- New building frontages to be designed to integrate and maintain a comfortable, active and interesting pedestrian environment through various passive and active design elements.

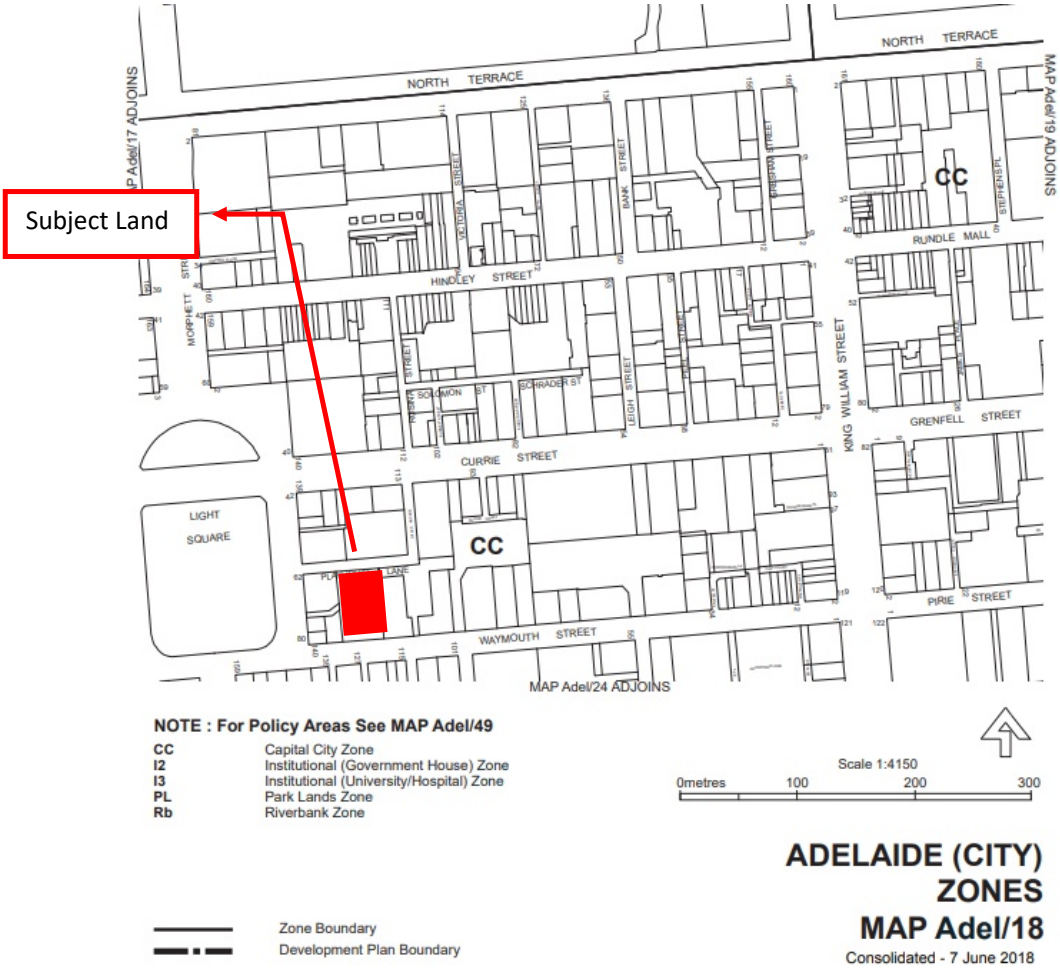

Figure 4 - Capital City Zone Map

7.2 Council Wide

Student Accommodation Principles of Development Control 10-13 provide the following guidance to assessment:

- Residents common or shared facilities to be efficient and usable;
- All living rooms having access to natural light;
- Can be adaptable to be used from other purposes;
- Private open space or appropriate communal open space that is accessible to all occupants of the building;
- Secure long term storage space provided;
- All rooms capable of providing a single bed, bookshelf, desk, workspace and cupboard/wardrobe.

Council wide provisions relating to crime prevention, waste management, access, bicycle parking, energy efficiency and interaction/relationship with the public realm are also considered relevant to this development.

7.3 Overlays

7.3.1 Affordable Housing Overlay

The proposal is subject to the Affordable Housing Overlay 1 in the City of Adelaide Development Plan however the proposal is for purpose built, student accommodation and not individual private dwellings and is therefore not proposing affordable housing for private ownership.

7.3.2 Noise and Air Emissions Overlay

This site is located within the designated area for the Noise and Air Emissions Overlay 16 and as such, requires assessment against *Minister's Specification SA 78B for Construction Requirements for the Control of External Sound.*

7.3.3 Adelaide City Airport Building Heights

The proposed building height does not exceed the 53m for the area in accordance with Building Heights Concept Plan Figure CC/1.

8. PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the City of Adelaide Development Plan, which are contained in the ATTACHMENTS.

8.1 Quantitative Provisions

	Development Plan Guideline	Proposed	Guideline Achieved	Comment
Building Height	53m	52.95m	YES ☒ NO ☐ PARTIAL ☐	Plant screening and lift overrun are not considered part of the 'Building Height' in terms of Development Plan assessment.
Land Use	Student accommodation	Student accommodation	YES ☒ NO ☐ PARTIAL ☐	

Car Parking	Nil required	Nil	YES ☒ NO ☐ PARTIAL ☐	
Bicycle Parking	Nil for student accommodation	80 spaces	YES ☒ NO ☐ PARTIAL ☐	The proposal provides spaces at a rate of 1:10 students based on other examples of functioning student accommodation.
Front Setback	0m required	0m – with entrance and courtyard setback	YES ☒ NO ☐ PARTIAL ☐	The courtyard contains screens which provide a continuous 'building line' to Waymouth Street.
Rear Setback	0m required	0m	YES ☒ NO ☐ PARTIAL ☐	
Side Setback	None applicable	Nil	YES ☒ NO ☐ PARTIAL ☐	
Private Open Space	Individual private open space no minimum required however must provide *quality* communal open space accessible to all occupants	Yes – up to 2099m² at Ground level; Level 1, 12 & 13 small break-out area with balcony Level 15 Lounge area with outdoor area with balconies Level 16- mezz lounge area Cluster rooms have dedicated communal spaces too.	YES ☐ NO ☐ PARTIAL ☒	Common open space areas are accessible to all occupants. An optimal design outcome would be to have a large communal space at every level however, it is noted that the common areas provided are large and are of a high quality standard and variety sufficient for this development.

8.2 Land Use and Character

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

The proposed student accommodation will introduce additional forms of residential development to suit a growing demand for accommodation in close proximity to the educational precinct and contribute positively to the Zones intent to increase the residential population to support 24/7 activity within the CBD. As envisaged in PDC 1 of the Zone, student accommodation is considered to be an appropriate land use and will contribute positively to the character of the locality and the CBD as a whole.

8.3 Design and Appearance

Buildings in the Capital City Zone should exhibit a high standard of architectural design and finish which is appropriate to the City's role and image as the capital of the State. A high standard of external appearance should be achieved through the use of high quality materials and finishes, articulation, avoidance of large blank facades and ensuring the ground levels are well integrated with the public realm.

The following recommendations were made with regards to Design and Appearance by the Government Architect:

- Further refinement of built form composition to enhance variation in heights and create a bold and coherent outcome.
- Further refinement of the courtyard screening treatment to improve contribution to the public realm by positively engaging with Waymouth Street.
- Development of facade design and detailing, including effective solar load management with vertical fins and prototyping of the articulated concrete panels during the next phases of design development.
- Continuing development of the communal facility strategy to ensure sufficient spaces, high quality amenity and usability is provided for the envisaged approximately 800 students.

The applicant has provided responses to the above in section 5.2 of this report.

8.3.1 Height, Bulk and Scale

While recognising that the Capital City Zone will accommodate intense urban development, the Development Plan also notes that the height, scale and massing of buildings should reinforce the desired character, built form, public environment and scale of the streetscape (Built Form and Townscape, PDC 170). The design should have regard to matters including avoiding massive unbroken façades, breaking up the building façade into distinct elements and including attractive planting, seating and pedestrian shelter.

The proposed development achieves this through its distinct multi-tower design (white vertical towers separated by dark inset walls) of varying heights, use of different materials on each elevation and the breaks in the vertical form through the break-out balcony on the western elevation, the double-height sky-lounge on the south western corner and the roof top garden on the south-eastern corner.

The frontage presented to Waymouth Street provides shelter and is highly permeable comprising a large entry foyer, study hub and courtyard as an interface to the streetscape with mesh screening to maintain a high level of permeability and visual connection and provides for a human-scale outcome at street level.

The Government Architect's comments in relation to further development and refinement of the built form strategy are noted, however on balance, the proposal meets the relevant provisions in relation to height and its built form composition has addressed the relevant provisions relating to bulk and scale and pedestrian interface.

8.3.2 Setbacks

Within the Capital City Zone, buildings are to be built to the street edge to reinforce the grid pattern, create a continuity of frontage and provide definition and enclosure to the public realm, whilst contributing to the interest, vitality and security of the pedestrian environment (Built Form and Townscape, PDC 179).

The podium/street wall height, and upper level setback (in the order of 3-6 metres) should relate to the scale and context of adjoining built form; provide a human scale at street level; create a well-defined and continuity of frontage; and otherwise contribute to pedestrian comfort and interest (Capital City Zone, PDC 12).

The development provides a visually defined podium which creates an active and permeable 'human-scale' connection for the pedestrian environment on Waymouth Street. It also ensures a well-defined edge continuity of frontage along Waymouth Street.

The Playhouse Lane facade is reflective of the existing vehicle-access nature of the street however the façade will still provide for some visual interest through a pedestrian/bicycle access point on the north western corner. Playhouse Lane will remain a relatively in-active frontage however its visual appearance and scale is addressed through the black louvered podium to screen back of house services area and the permeable nature of the bicycle entry point which will achieve some level of activity and human-scale along this frontage. Residents will be able to move through the site via a right of way and gated access from the western side, which is supported.

No minimum side setbacks are applicable to the site, although the building has sections which have been set back from both the western and eastern boundaries providing some relief and transition to neighbouring developments.

Overall the proposal meets the relevant provisions in relation to setbacks for Capital City Zone.

8.3.3 Materials, colours and finishes

The 'tower' facades incorporate 'Brighton Lite' precast concrete panels in a square textured weave pattern. These towers are broken up by 'Charcoal' stain precast concrete wall and dark window sections which are setback providing visual prominence to the light tower sections.

PDC 187 (Built Form and Townscape) provides that the design, external materials, colours and finishes of buildings should have regard to their surrounding townscape context, built form and public environment, consistent with the desired character of the relevant Zone and Policy Area. It is noted that there is a wide range of materials and finishes present within the locality. As such the proposed materials within the development are generally considered to be appropriate for this location. The subtle use of Champagne coloured window frames on the Waymouth Street frontage and the window hoods on the western elevation provide for additional articulation elements that create more visual interest whilst still serving a functional purpose.

A condition is recommended where by the applicant provides a scaled prototype sample of the concrete weave pattern sections to ensure the envisaged visual effect (a noticeable texture) can be achieved. Design details of the prototype testing shall be submitted (in consultation with the Government Architect) to the satisfaction of State Commission Assessment Panel.

8.3.4 Landscaped Open Space

The Capital City Zone does not specify any minimum requirement for the provision of landscaped open space on the site. Objective 55 (Landscaping) within Built Form and Townscape aims for the provision of water-conserving landscaping that enhances the local landscape character and creates a pleasant, safe and attractive living environment.

Provision of substantial landscaping is proposed as part of the development and depicted on the Landscape Concept accompanying the application. This includes the ground-floor courtyard, the Waymouth Street building frontage and the

proposed roof garden. These elements will positively contribute to the amenity for residents of the proposed development and its interface with adjoining public realm areas.

Conclusion

The proposed development meets the majority of provisions in relation to setbacks, building height, continuous building edge to and connectivity to the streetscape, visual interest through use of different materials/building heights, provision of canopies over the footpath, use of rooftop gardens and provision of multiple pedestrian access points for pedestrian connectivity.

It is acknowledged the use of a weave design to achieve greater visual interest will need to be further demonstrated by way of condition on the approval to develop a proto-type prior to construction to ensure the weave is designed to achieve the intended texture and visual appearance.

Overall it is considered that the development displays sufficient merit in relation to its design and appearance and the relevant provisions of the Development Plan and warrants support in its current form.

8.4 Occupant Amenity

Being specifically designed for student occupation, the proposed development qualifies for reduced internal and external private spaces through the provision of a significant number of shared or communal facilities, including a gym, theatre, kitchen and dining areas, games area and study areas at ground-floor level; a large gated courtyard; breakout spaces on apartment floors; and the rooftop garden on Level 16.

These facilities will provide significant space and amenity and will promote social interaction. All rooms will have an external outlook with natural light and ventilation. The floor plans accompanying the application show how each of the apartments can accommodate a desk, robe, shelves and a single bed. In the absence of specific quantitative criteria for room size, regard is had to Student Accommodation PDC 13 which seeks to ensure that sufficient space is provided for a single bed, book shelves, a desk and workspace and a cupboard/wardrobe.

The applicant has demonstrated how these can be accommodated within the room types proposed. The applicant has also provided photos of another student accommodation building under construction at Gray Street, Adelaide for reference (ATTACHMENT 6)

The cluster rooms are smaller than the twin and studio plan rooms due to their reliance on communal bathroom and living spaces (including kitchenette). As such the applicant asserts that they equate to a bedroom within an apartment arrangement.

Having regard to PDC 13, the size and shape of the rooms can adequately achieve the design intent provision. The plans also demonstrate how the apartment floors of the building might be re-configured for use as a general residential building comprising 1-, 2- and 3-bedroom apartments (although details of the individual floor plans are not provided).

It is considered that the proposed development achieves the objective and principles set out in Objective 9 and PDCs 10 to 13 in relation to Student Accommodation.

8.5 Traffic Impact, Access and Parking

Development should provide safe, convenient and comfortable access and movement (Transport and Access, PDC 224), including by reflecting the significance and

increasing the permeability of the identified pedestrian network (PDC 226), and by providing an adequate supply of on-site secure bicycle parking (PDC 234).

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

A bicycle, parking and refuse vehicle assessment from GTA Consultants reviews access for waste vehicles and the adequacy of bicycle parking for the proposed development which finds that:

- Access to the proposed waste collection sorting room and bin storage area located off Playhouse Lane will accommodate a refuse collection vehicle of up to 10m long, which is the largest standard refuse vehicle. It is proposed that vehicles will enter Playhouse lane via Gilles Arcade in a forward direction, reverse into the loading area, then exit in a forward direction into Light Square. It is noted that Council has reviewed this and is satisfied with the traffic/access arrangement proposed.
- In the absence of a specific bicycle parking rate for Student Accommodation in the Development Plan, and based on an empirical assessment of bicycle parking requirements for other student accommodation developments in Australia, the average bicycle parking demand is 1 space per 38.6 beds.
- With 787 beds in the proposed development, the provision of 80 bicycle parking spaces represents a rate of 1 space per 10 beds, exceeding the average rate determined for Australia. The close proximity of likely destinations for occupants to public transport services means that the majority of resident movements to and from the building will be on foot.

The proposed ground-level bicycle storage room with a capacity of up to 80 bicycles is seen as appropriate for the nature and location of the proposed development and its likely demand.

With the absence of specific bicycle parking ratios within Table Adel/6, the ratios identified by GTA for other similar facilities are considered appropriate. Regard is also had to the location of the facility in proximity to the university campus at City West and TAFE, as well as the excellent public transport access from Waymouth Street and bike share schemes available within the CBD.

8.6 Environmental Factors

8.6.1 Crime Prevention

Development should promote the safety and security of the community in the public realm and within development, through the promotion of natural surveillance and other design measures (Council Wide- Environmental, Crime Prevention through Urban Design, PDCs 82 to 84).

The applicant has submitted in the Planning Report that the following design features will satisfy the relevant CPTED principles:

- the ground floor frontage to Waymouth Street has an extensive glazed shopfront to the foyer
- reception and student hub, with extensive glazing to avoid potential areas of entrapment;
- the student accommodation reception desk is clearly visible with clear lines of sight to the primary entrance;
- CCTV coverage will be provided to the public areas and communal spaces within the building; and

- the internal circulation corridors on each student accommodation level provide clear lines of sight and are of an appropriate width. They will also be illuminated with movement activated lighting systems.
- It is also noted that the introduction of some 700 or so new residents into the area will increase the volume of daytime and night-time activities in Waymouth Street and Playhouse Lane.

The western side courtyard and rear entrance from Playhouse Lane will be gated for safety and security purposes. Street frontages have been designed to avoid the creation of hiding spots. The opportunity for pedestrian thoroughfare through the site from Playhouse Lane, Light Square and Waymouth Street was expressed at pre-lodgement discussions. Whilst it is noted that greater public pedestrian connectivity through the site would be ideal, the site is only 30m from the corner of Waymouth Street connecting to Light Square and Playhouse Lane. This is a well-lit, public pedestrian pathway and the applicant wishes to maintain privacy and security for occupants whilst still providing the ability for resident pedestrian access from Playhouse Lane, Light Square and Waymouth Street. This is on balance, considered reasonable.

8.6.2 Noise Emissions

Council Wide, Objective 27 (Environmental – Noise Emissions) requires that noise sensitive development be designed to protect its occupants from existing and contemplated noise sources, and not unreasonably interfere with the operation of non-residential uses contemplated within the relevant Zone or Policy Area. Noise receivers should incorporate adequate noise attenuation measures, and should not unreasonably interfere with the operation of non-residential uses that are commensurate with the envisaged amenity of the locality (PDCs 95 to 97).

An Acoustic Design Report by BESTEC dated December 2018 has been provided. The report considered the proposed plans and elevations of the development and the existing noise conditions surrounding the site.

The report found the dominant noise sources (both in association with development and sources on near-by land) with potential to impact on the proposed occupants was identified as follows:

- Music played from the Queens Theatre
- Patrons noise at and outside the Queens Theatre
- Traffic noise from Playhouse Lane
- Noise associated with mechanical plant
- Noise associated with rubbish collection
- Internal noise from occupants from communal areas

The report makes recommendations to address each of the above noise sources including:

- Appropriate alternative constructions of the building façade including glazing, sealants, ceiling overall, water resistance and durability and sound insulation in order to provide sufficient attenuation to noise from traffic and music and venue noise from the Queens Theatre.
- Appropriate construction types for walls, floors, doors, ceilings etc. separating the sole occupancy units and the communal accommodation design of building elements and providing adequate level of sound attenuation in accordance with the Nation Construction Code 2016

- Appropriate constructions for the separation of communal and ancillary spaces to Ground floor of the development, to achieve recommended acoustic criteria.
- Noise associated with rubbish collection to the nearest accommodation unit is to be controlled via the EPA stipulated day time only (i.e. 7AM Monday to Friday and after 9AM on Saturday and Sunday.

The assessment anticipates that acoustic treatments will be incorporated as design documentation proceeds for mechanical services plant and equipment to the proposed development, to ensure compliance with applicable project criteria.

The acoustic measures recommended in the report are considered appropriate for the proposal to meet the relevant EPA, Protection (Noise) Policy 2017 and other relevant standards and regulations.

8.6.3 Waste Management

PDC 101 (Environmental – Waste Management) requires a dedicated area for on-site collection and sorting of recyclable materials and refuse to be provided within all new development. Development greater than 2,000 square metres total floor area should manage waste by containing a dedicated area for collection and sorting of construction waste and recyclable building materials; on-site storage and management of waste; disposal of non-recyclable waste; and incorporating waste water and stormwater re-use including the treatment and re-use of grey water (PDC 103).

Council's written comment on the application advised that it has no objections to the proposed waste management of the development.

The Waste Management Plan prepared by Colby Phillips outlines space for bin storage at ground floor level and a proposed frequency of waste collection to 6-7 times per week.

Based on estimated waste volumes for specific waste streams including general waste, co-mingled recycling, organics (food waste), cardboard, hard waste and e-waste, it finds that successful management of waste can be achieved at the site through provision of total of 13 bins, each designated for a particular waste stream. Collection of waste will be by a commercial contractor at specified frequencies (or, in the case of hard waste and E-waste, by a commercial contractor on call).

Subject to compliance with the design recommendations and ongoing operational procedures set out in the Waste Management Plan, it is considered that the proposed development complies with relevant provisions of the Development Plan.

8.6.4 Energy Efficiency

Buildings should provide adequate thermal comfort and minimise the need for energy use for heating, cooling and lighting through design measures specified in Council Wide Energy Efficiency PDCs 106 to 108.

A Sustainability Management Plan was prepared by Lucid Consulting Australia and provided by the applicant. The SMP outlines the following design measures taken to enhance the sustainability of the proposed development:

- Efficient building thermal envelope with wall, floor and roof insulation

- High performance glazing
- Efficient building massing and floorplates to minimise the area of exposed floors and ceilings
- External vertical shading fins (which has since been amended to 'hoods' providing greater shading to protect west facing windows
- Solar hot water or PV system
- Master shutdown switches provided to each sole occupancy unit allowing the lighting, air-conditioning, and exhaust fans to be switched off when the unit is unoccupied
- Thermal mass provided through heavyweight construction material and low façade-to-glazing area ratio
- Natural Ventilation and daylight provided to majority of accommodation units
- LED lighting to be used throughout
- Motion sensors for lighting control within common areas
- Water efficient fixtures and fittings (refer to Section 2.6 for proposed WELS ratings)
- Common facilities (e.g. kitchen, cinema, fitness, and laundries) provided to reduce the material demand of building occupants and use space more efficiently, as well as providing a high-quality living environment
- Common courtyard with sports facilities (e.g. basketball) available for residents' use
- Rooftop communal garden for urban farming available for residents' use
- Secure bicycle storage area to promote low-carbon forms of transportation.
- Low VOC paints used throughout the building

8.6.5 Wind Analysis

Development should be designed and sited to minimise micro-climactic impact on adjacent land or buildings, including effects of patterns of wind (Environmental – Micro-climate and Sunlight PDC 119). After consideration of the form and exposure of the proposed development (but without conducting a Wind Assessment Model) the applicant purports that that the proposed design (considering the height of the building) will present some changes to existing wind conditions in the local area.

It is not anticipated that there will be any significant impacts on pedestrian comfort, which will be eased through the incorporation of a canopy over the Waymouth Street footpath (which will mitigate any down draft off the southern façade) and the split setback of the southern façade will disrupt the general pattern of the predominant wind from the south east.

It is considered that the siting and design will not exacerbate micro-climatic impacts on adjoining building and sufficiently satisfies PDC 119.

8.6.6 Site Contamination

PDC 105 (Environmental – Contaminated Sites) requires that where there is evidence or reasonable suspicion that land (including underground water) may have been contaminated, development should only occur where it is demonstrated that the land can be made suitable for its intended use prior to commencement of that use.

A preliminary site investigation has been undertaken by Agon Environmental which considered the environmental setting of the site including soil type, geology, groundwater zoning and an examination of history of the site.

The following potentially contaminating activities (PCA's) were identified:

- Former Site Operations (McPherson Limited – Iron Works);
- Importation of Fill;
- Migration of contaminants from neighbouring properties;
- Asbestos Containing Materials; and
- Electrical Transformer

The risk to site occupants from any site contamination resulting from these PCAs is considered to be low under the current commercial land uses conducted at the site (offices).

However, if the site is redeveloped, it is recommended that further environmental investigations, including soil sampling beneath the building slabs and carpark, be conducted to determine if the PCAs have caused site contamination at the property.

The presence, nature and extent of Asbestos Containing Material present in the site building should be assessed (including a review and, if required, update, of the Asbestos Register for the site) prior to any demolition and redevelopment works.

Having regard to the nature of the proposed development and the likely capping of the site, there is reasonable prospect to conclude that the land is, or can be made suitable for the proposed development following remediation if necessary.

8.7 Signage

Council Wide Objective 56 – Advertising within Built Form and Townscape aims for outdoor advertisements that are designed and located to reinforce the desired character and amenity of their location, to be concise and efficient by not contributing to confusion and visual clutter, and not to create a hazard. The Capital City Zone PDC's 33-34 also set out appropriate design and location standards for advertising signage.

The applicant has included signage locations, one at the Waymouth Street entrance and three others at the top of the building on the southern, western and northern elevations. The number of proposed signs is considered appropriate for a building of this size however no specific design or graphic has been identified at this stage. The detail required to assess the proposed signage against the principles set out in Development Plan has not been provided as part of the present application and therefore signage should be the subject of a separate application for Development Plan Consent.

9. CONCLUSION

The proposed development raises the following key planning issues:

- Building design and articulation and the visual impact of the building in the CBD setting, particularly the relatively long western elevation of the building which is visible from Light Square and the areas of glazing in the western elevation exposed to thermal impacts of summertime afternoon sun;
- The building frontage and its public realm interaction and connection to Waymouth Street;
- Amenity for occupants of the building including the size of student rooms and the availability of natural light and ventilation and the adequacy of common space

areas including outdoor areas provided in lieu of private open space to resident apartments.

In terms of land use, building height, setbacks from site boundaries, the incorporation of sustainable design features, waste management access and site contamination, the proposed development complies with all applicable policies.

On balance, the proposed development will make a positive contribution to the desired character of an underutilised site in the Capital City Zone. It will substantially increase the resident population and as a result, the vibrancy of this precinct. It will activate the Waymouth Street frontage with the main building entry lobby and waiting/reception area and the court yard/study hub that is available for use by residents of the building and clearly visible from the street. These activities will provide opportunities for active and passive surveillance of the public realm during day and night-time hours and will substantially enhance public safety.

While some concern is held about the size of some of the student apartments in the proposed development, particularly the cluster apartments, it is noted that each bedroom and each living/dining room in these clusters (as well as each studio and ensuite apartment, and the student breakout areas on the apartment floors) will have natural light and ventilation. It is considered that the apartments are suitable for their proposed use and that the applicant has demonstrated how the apartment floors may be converted to a general-purpose residential building of 1, 2- and 3-bedroom apartments.

The applicant has provided consultant reports demonstrating how the proposed development will comply with waste management objectives, will minimise acoustic impacts on residents from the adjoining land uses, and will incorporate sustainability measures to reduce the consumption of energy and other resources. Where necessary the recommendations of these reports are reflected in the proposed Planning Conditions.

It is concluded that the proposed development should be granted Development Plan Consent subject to the conditions set out in the following section.

10. RECOMMENDATION

It is recommended that the State Commission Assessment Panel:

1) RESOLVE that the proposed development is NOT seriously at variance with the policies in the Development Plan.

2) RESOLVE that the State Commission Assessment Panel is satisfied that the proposal generally accords with the relevant Objectives and Principles of Development Control of the Adelaide (City) Development Plan Consolidated 7 June 2018.

3) RESOLVE to grant Development Plan Consent to the proposal by Trust Company (Australia Limited) as trustee for WH Waymouth Trust for the staged development including demolition of existing building and construction of seventeen (17) storey student accommodation building with communal student facilities and rooftop garden at 124 Waymouth Street, Adelaide, subject to the following conditions of consent.

PLANNING CONDITIONS

1. The development herein granted Development Plan Consent shall be undertaken and completed in accordance with the stamped plans and documentation, except where varied by conditions below.

External Materials

2. Prior to Development Approval being issued for 'Stage 3 Superstructure works', a scaled proto-type sample of the concrete weave pattern sections shall be developed to ensure the envisaged visual effect (a noticeable texture) can be achieved. Design details of the proto-type testing shall be submitted to the satisfaction of State Commission Assessment Panel in consultation with the Government Architect.

Site Contamination

3. Prior to Development Approval being issued for 'Stage 3 Superstructure works' a statement by a suitably qualified professional that demonstrates that the land is suitable for its intended use (or can reasonably be made suitable for its intended use) shall be submitted to the State Commission Assessment Panel.

Driveway and parking areas

4. All vehicle car parks, driveways and vehicle entry and manoeuvring areas shall be designed and constructed in accordance with Australian Standards (AS/NZS 2890.1:2004 and AS/NZS 2890.6.2009) and be drained and paved with bitumen, concrete or paving bricks in accordance with sound engineering practice and appropriately line marked to the reasonable satisfaction of the State Commission Assessment Panel prior to the occupation or use of the development.

5. All bicycle parking spaces shall be designed and constructed in accordance with Australian Standard 2890.3-2015.

Structure

6. The finished floor level of the ground floor level entry shall match that of the existing footpath unless otherwise agreed to by the State Commission Assessment Panel.

Acoustics

7. The acoustic attenuation measures recommended in the Acoustic Design Report dated December 2018 by BESTEC shall be fully incorporated into the building rules documentation to the reasonable satisfaction of the State Commission Assessment Panel. Such acoustic measures shall be made operational prior to the occupation or use of the development

Lighting

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

9. Any lighting to the Waymouth Street footpath canopy shall be installed in accordance with Council's guideline entitled "Under Verandah/Awning Lighting Guidelines" at all times to the reasonable satisfaction of the SCAP and prior to the occupation or use of the Development. Such lighting shall be operational during the hours of darkness at all times.

Infrastructure

10. All Council, utility or state-agency maintained infrastructure (i.e. roads, kerbs, drains, crossovers, lighting, 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.

Landscaping

11. Landscaping areas as shown on the stamped plans and Landscape Concept Plan dated 17 December 2018 by Hemisphere Design shall be established prior to the occupation of the development and shall be maintained and nurtured at all times with any diseased or dying plants to be replaced.

12. A watering system shall be installed at the time landscaping is established and operated so that all plants receive sufficient water to ensure their survival and growth.

Stormwater

13. A final detailed Stormwater Management Plan shall be submitted to the satisfaction of the State Commission Assessment Panel, in consultation with City of Adelaide. The details of the plan shall be incorporated within the Building Rules Consent documentation, submitted for Development Approval, and be implemented prior to occupation or use of the development.

14. All stormwater design and construction shall be in accordance with Australian Standard AS/NZS 3500.3:2015 (Part 3) to ensure that stormwater does not adversely affect any adjoining property or public road.

ADVISORY NOTES

a. Signage does not form part of this development application. No advertising display or signage shall be erected or displayed upon the subject land without any required Development Approval first being obtained.

b. Approval for the proposed building height and construction methodology is required by the Commonwealth Secretary for the Department of Transport and Regional Services in accordance with the Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996.

c. Any further proposed addition to the structure, including aerials, masts and vent/exhaust stacks, must be subject to a separate assessment by the Commonwealth Department of Infrastructure and Transport. Crane operations associated with construction shall be the subject of a separate application. Adelaide Airport Limited requires 48 days prior notice of any crane operations during the construction.

d. The applicant, or any person with the benefit of this consent, must ensure that any consent/permit from other authorities or third parties that may be required to undertake the development, have been granted by that authority prior to the commencement of the development.

e. 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 Adelaide City Council on (08) 8203 7203.

f. This Development Plan Consent will expire after 12 months from the date of this Notification, unless final Development Approval from Council has been received within that period or this Consent has been extended by the State Commission Assessment Panel.

g. The applicant is also advised that any act or work authorised or required by this Notification must be substantially commenced within 1 year of the final Development Approval issued by Council and substantially completed within 3 years of the date of final Development Approval issued by Council, unless that Development Approval is extended by the Council.

h. The applicant has a right of appeal against the conditions which have been imposed on this Development Plan Consent. Such an appeal must be lodged at the Environment, Resources and Development Court within two months from the day of receiving this notice or such longer time as the Court may allow. The applicant is asked to contact the Court if wishing to appeal. The Court is located in the Sir Samuel Way Building, Victoria Square, Adelaide, (telephone number 8204 0289).

i. The applicant shall ensure there is no objection from any of the public utilities in respect of underground or overhead services and any alterations that may be required are to be at the applicant's expense.

Lauren Talbot
SENIOR PLANNING OFFICER
PLANNING AND LAND USE SERVICES
DEPARTMENT OF PLANNING, TRANSPORT and INFRASTRUCTURE

124 LAYTON STREET
STUDENT ACCOMMODATION

CONTACT

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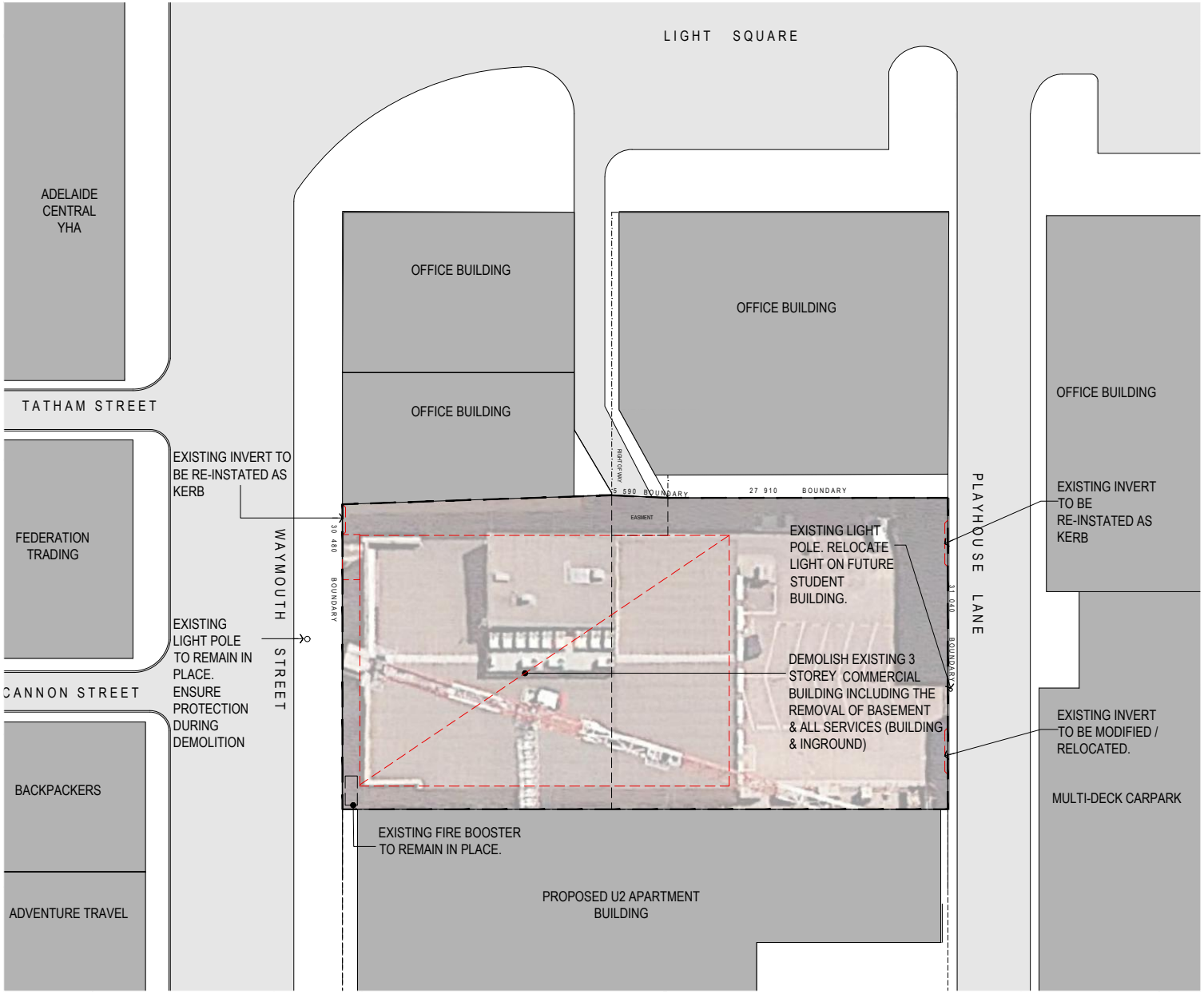
brownfalconer.com.au

CONTENTS

PLANNING APPLICATION

DEMOLITION PLAN

1:200 @ A1



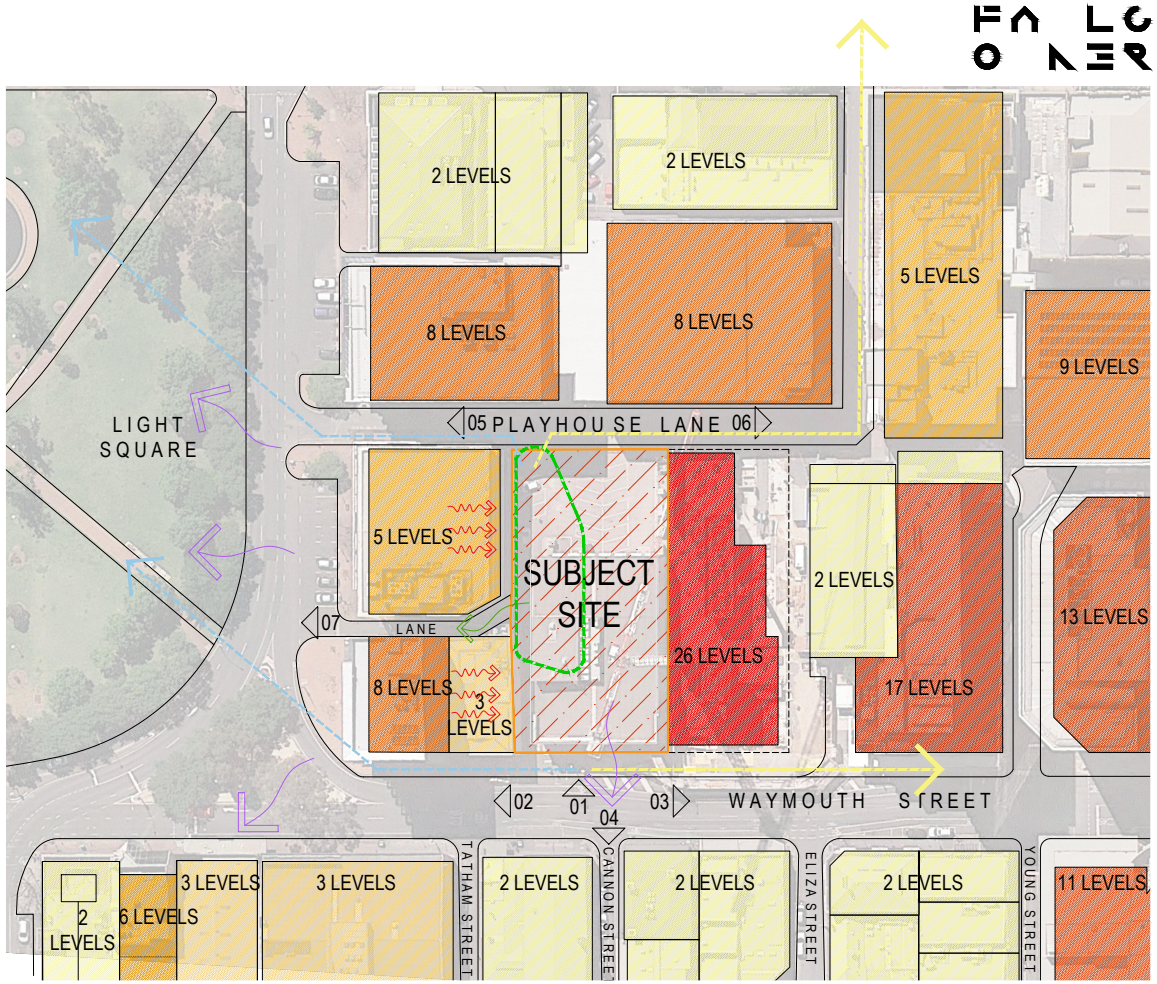
CONTEXT & SITE ANALYSIS

SITE CONTEXT & ANALYSIS

PUBLIC TOILET
INFORMATION
PARKING
HOSPITAL
POLICE
PARK / RECREATION
CAFE
SPORTS / RECREATION
ADELAIDE TRAVELLERS INN
TRAIN
TRAM
SWIM
PARK / SEATING
PUBLIC BBQ

LEGEND

- 1-2 LEVELS
- 3 LEVELS
- 4 -5 LEVELS
- 6 - 7 LEVELS
- 8 - 9 LEVELS
- 10-11 LEVELS
- 12-13 LEVELS
- 17 LEVELS
- 26 > LEVELS



SITE CONTEXT & LOCALITY PLAN

SHADING REQUIRED
UNIVERSITY OF SOUTH AUSTRALIA 650m
PEDESTRIAN ACCESS
To ADELAIDE UNIVERSITY 1.6km
PEDESTRIAN ACCESS
BEST VIEWS
OPEN SPACE
SITE

EXISTING CONTEXT PHOTOS


01 - EXISTING BUILDING TO BE DEMOLISHED

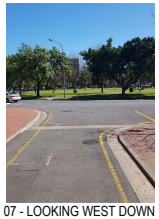

02 - LOOKING EAST


04 - LINK DOWN CANNON


03 - LOOKING WEST


05 - PLAYHOUSE LOOKING WEST

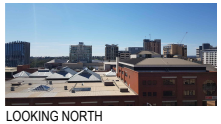

06 - PLAYHOUSE LOOKING EAST

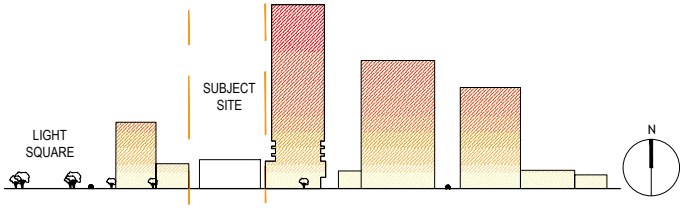

07 - LOOKING WEST DOWN LANEWAY

SITE VIEWS


LOOKING SOUTH WEST

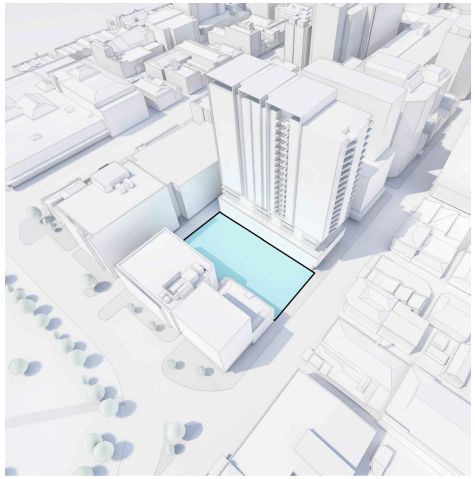

LOOKING SOUTH


LOOKING NORTH

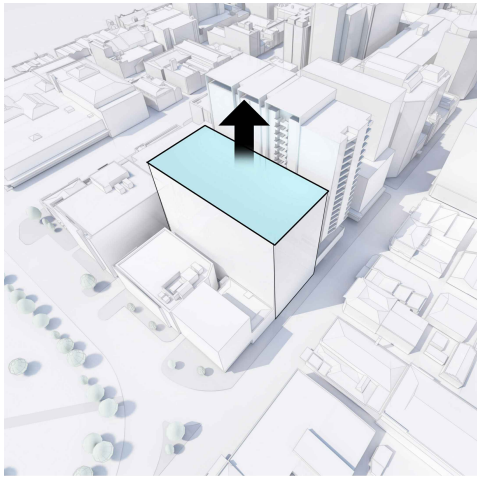


EXISTING WAYMOUTH ST ELEVATION
1:1000

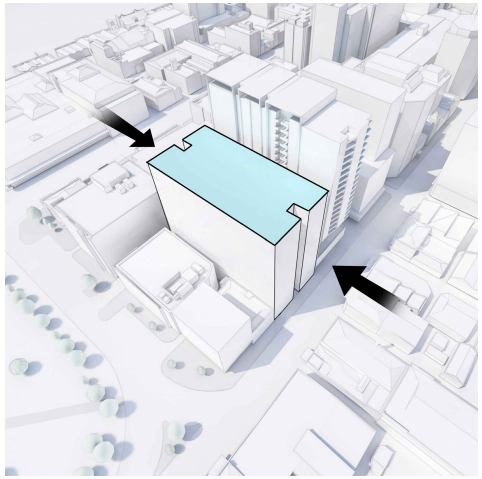
FORM & MASSING



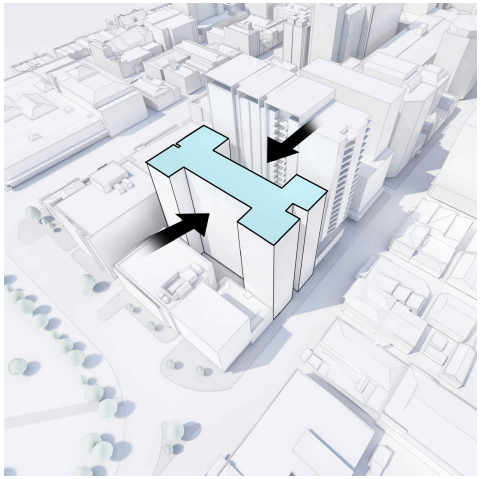
> 01
- SITE AREA



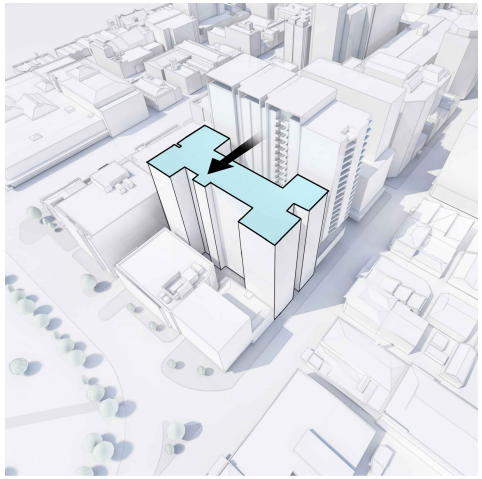
> 02
- CREATING 17 STOREY MASS



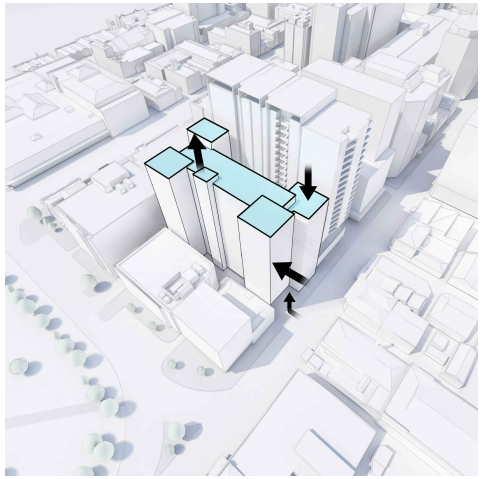
03
- NORTH / SOUTH VERTICAL BREAK
- ADDRESS CONTEXT (CENTRAL MARKET LINK
- BREAK-UP MASS
- LIGHT & AIR TO CORRIDOR
- CREATING BUILDING ENTRY



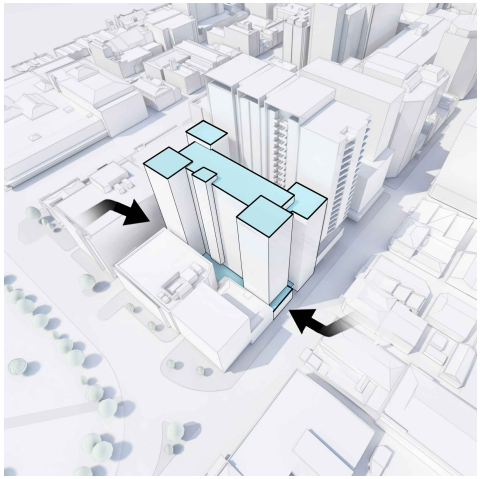
04
- BREAKING UP THE MASS & LONG FACADES
- CREATING INDIVIDUAL "TOWERS"
- RELIEF FROM BOUNDARIES



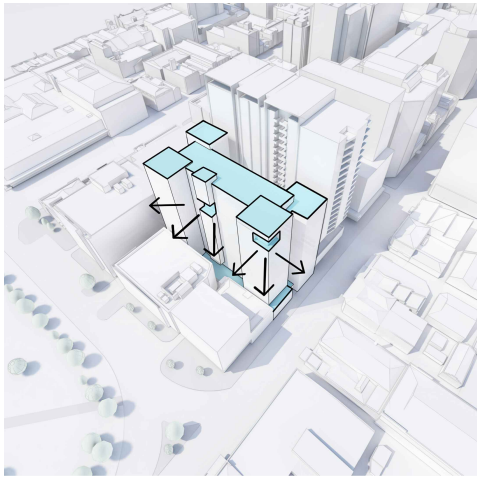
05
- BREAK-OUT SPACE
- VARIATION IN THE FACADE
- ALTERNATIVE OUT-LOOK
- ANOTHER TOWER IDENTITY
- RELIEF TO THE LONG CORRIDOR



06
- SET-BACK & HEIGHT VARIATIONS
- LONG-VIEW TOWER IDENTITIES
- CREATING A PODIUM



07
- PODIUM EXPRESSION
- ENTRY / EXIT POINTS
- PERMEABLE GROUND PLANE



08
- CREATING COMMUNAL SPACES
- DOUBLE HEIGHT SKY-LOUNGE
- DOUBLE HEIGHT BREAK-OUT BALCONY
- ROOF TOP URBAN FARM
- VIEWS TO LIGHT SQUARE & THE WEST

3D PERSPECTIVES

VIEW FROM WAYMOUTH ST LOOKING NORTH-EAST

VIEW FROM ABOVE (FORM / MASSING)

WESTERN FACADE FROM LIGHT SQ.

SOUTH - WEST CORNER - SKY LOUNGE

3D PERSPECTIVES

WAYMOUTH ST ELEVATION - STREET LEVEL

VIEW FROM ELIZA ST LOOKING NORTH-WEST

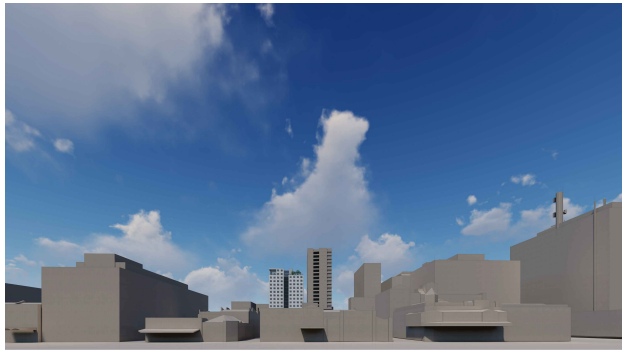
PLAYHOUSE LANE ENTRY

WAYMOUTH ST ELEVATION - STREET LEVEL

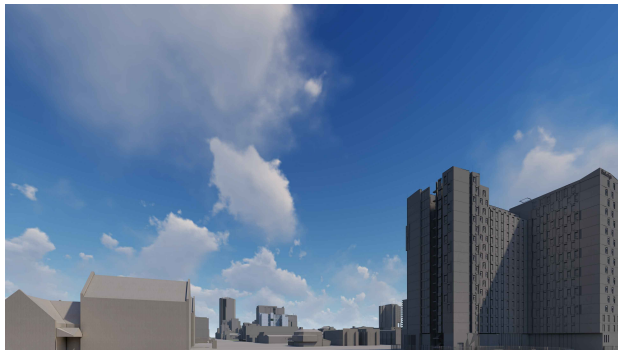
LONG VIEW 3D PERSPECTIVES

LONG VIEW FROM LIGHT SQ. LOOKING EAST

LONG VIEW FROM LIGHT SQ. ON MORPHETT LOOKING SOUTH



LONG VIEW FROM CENTRAL MARKETS



LONG VIEW FROM WEST TERRACE

SUN STUDY

WINTER SOLSTICE - 21st JUNE

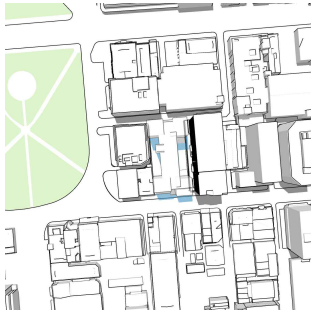
10AM

12PM

2PM

SUMMER SOLSTICE - 22nd DECEMBER

10AM



12PM

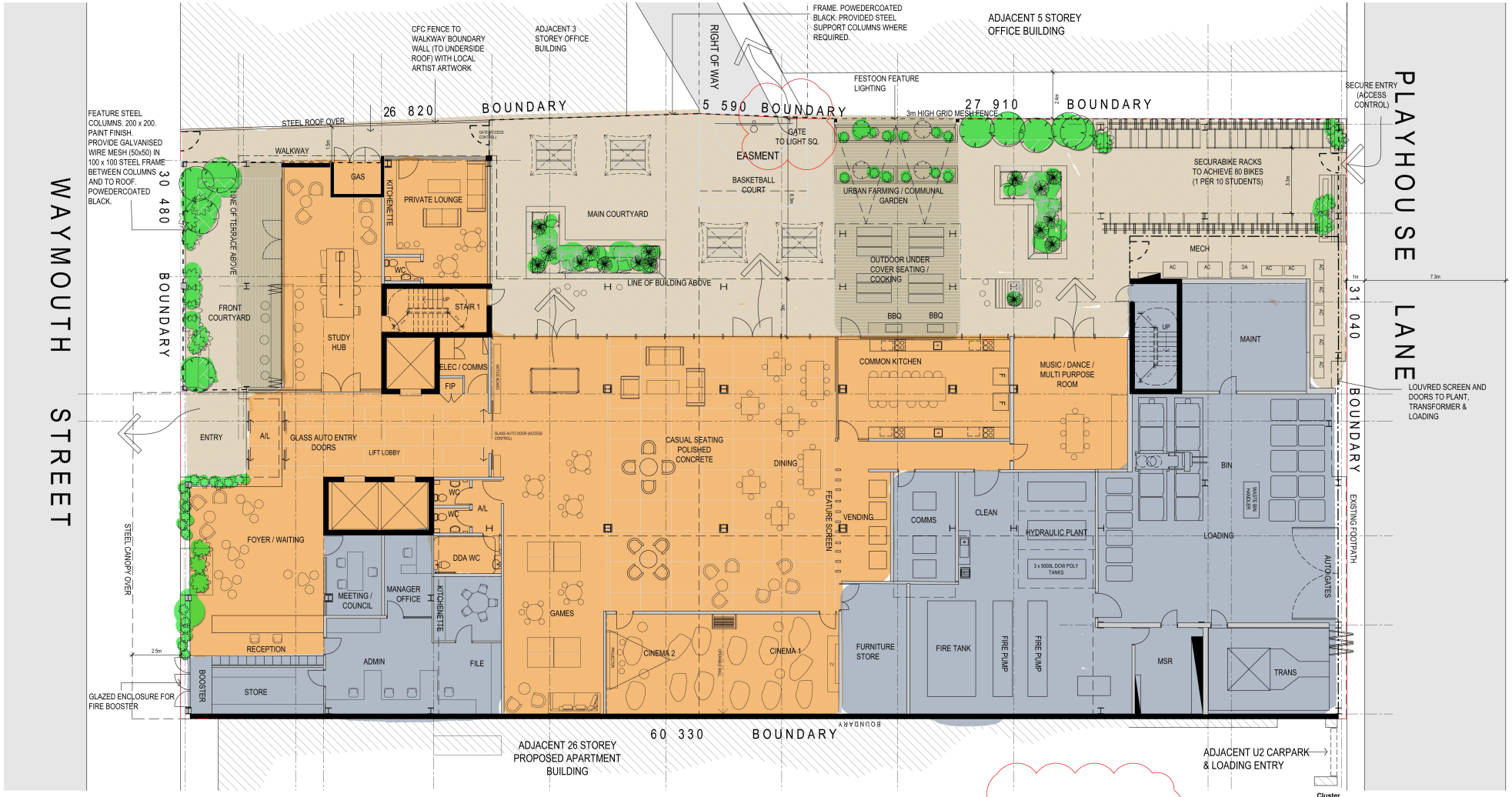
2PM

LOCALITY PLAN

1:500 @ A1

SITE / GROUND FLOOR PLAN

1:100 @ A1



Room	Area (m²)
Ground Floor Common Area - Internal	660
Ground Floor Common Area - External	700
Level 1 Common Area - Internal	280
Level 1 Common Area - External	20
Level 12 Breakout - Internal	35
Level 12 Breakout - Terrace	15
Level 13 Breakout - Internal	15
Level 15 Sky Lounge - Internal	105
Level 15 Sky Lounge - Terrace	11
Level 15 Sky Urban Farm - Terrace	140
Level 15 Sky Lounge Mezzanine - Internal	50
Shared Common Area (Every Floor) - Internal	60
Total Area	**2090**
Common Area per Bed	**2.7**
Percentage of total Area	**10%**

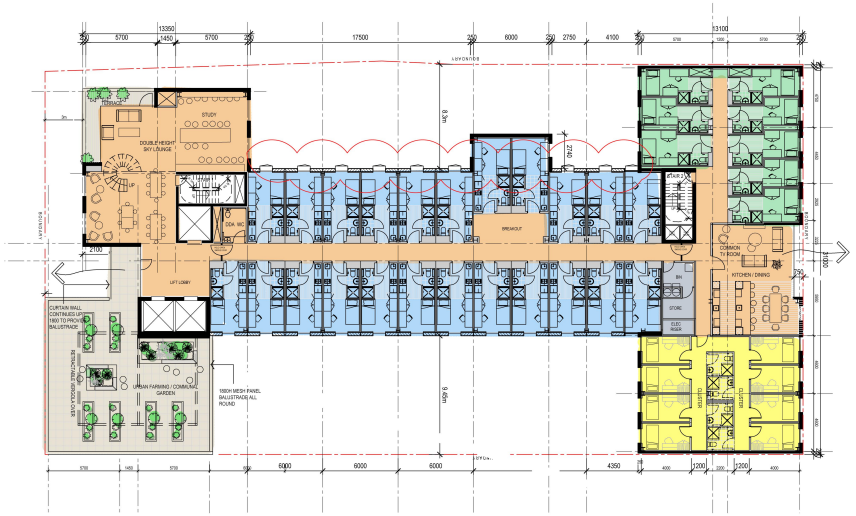
	Studio	DDA	Ensuite	Cluster Beds	Total	GFA
Lv16	23	0	8	8	39	1,060
Lv15	23	0	8	8	39	1,060
Lv14	35	1	8	8	52	1,215
Lv13	33	1	8	8	50	1,215
Lv12	33	1	8	8	50	1,215
Lv11	36	0	8	8	52	1,215
Lv10	35	1	8	8	52	1,215
Lv9	35	1	8	8	52	1,215
Lv8	35	1	8	8	52	1,215
Lv7	35	1	8	8	52	1,215
Lv6	35	1	8	8	52	1,215
Lv5	35	1	8	8	52	1,215
Lv4	35	1	8	8	52	1,215
Lv3	35	1	8	8	52	1,215
Lv2	35	1	8	8	52	1,215
Lv1	20	1	8	8	37	1,250
Ground	-	-	-	-	-	1,300
TOTAL BEDS	518	13	128	128	787	20,465
	84%			16%		26.0 m2/bed

FLOOR PLANS

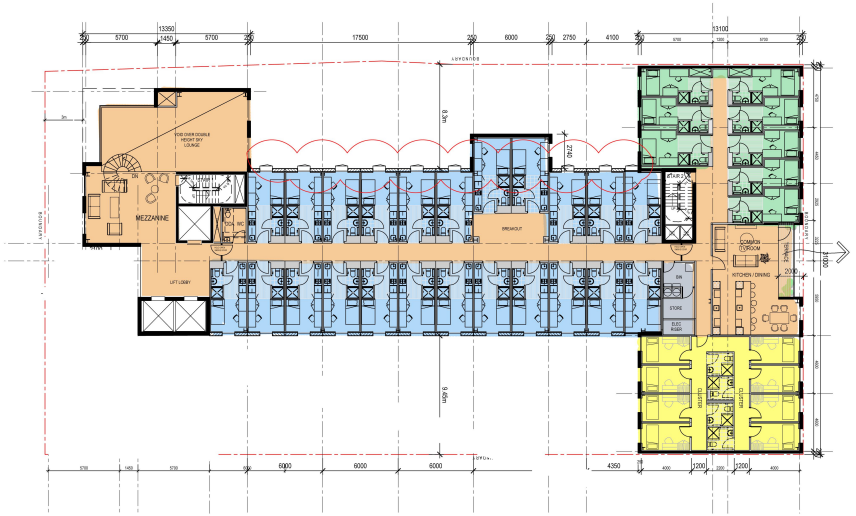
1:200 @ A1

LEVEL 1

LEVEL 2-14 TYPICAL

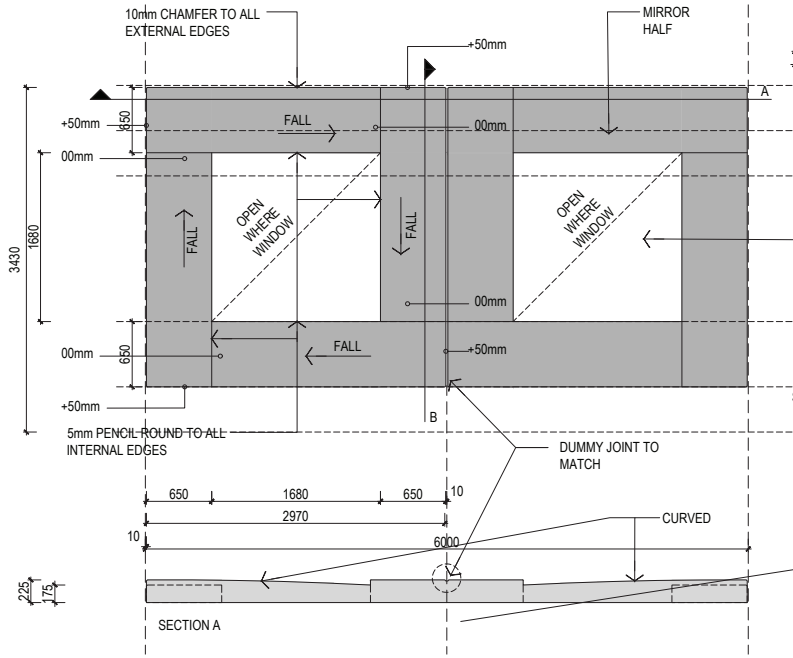


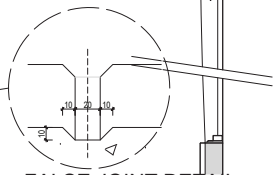
LEVEL 15



LEVEL 16

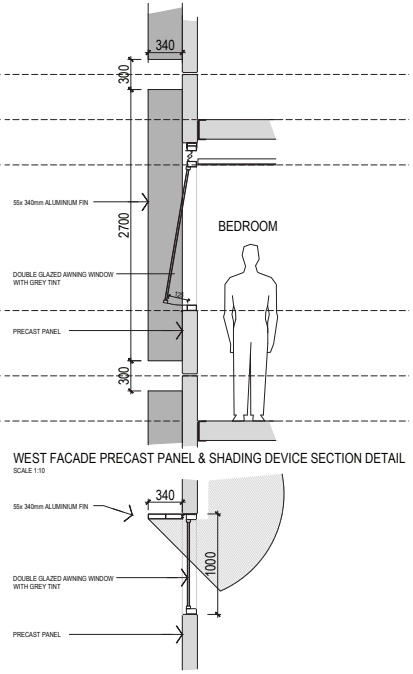
DETAILS





FALSE JOINT DETAIL

1:2



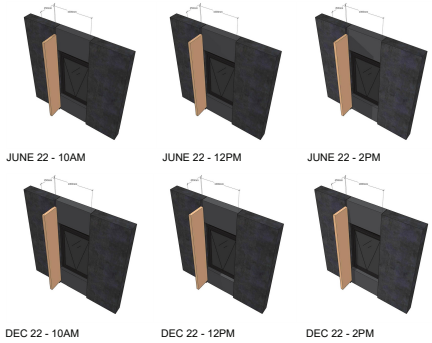
WEST FACADE PRECAST PANEL & SHADING DEVICE SECTION DETAIL

SCALE 1:10

WEST FACADE PRECAST PANEL & SHADING DEVICE PLAN DETAIL

SCALE 1:10

FIN SHADING DIAGRAMS



JUNE 22 - 10AM | JUNE 22 - 12PM | JUNE 22 - 2PM

DEC 22 - 10AM | DEC 22 - 12PM | DEC 22 - 2PM

PRECAST PANEL

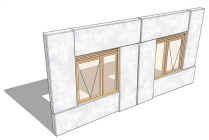
PANEL SIZE NOM 3m HIGH X 6m WIDE

175mm MINIMUM THICKNESS.
225 MAXIMUM THICKNESS. (THICKER IF ACHIEVABLE AT HIGH POINTS)
AVERAGE THICKNESS OF PANEL APPROX. 200mm

ALL EXTERNAL EDGES 10mm CHAMFER
ALL INTERNAL EDGES MIN PENCIL ROUND
- Nom 5mm

DUMMY JOINT TO MATCH ACTUAL JOINTS WITH 10mm CHAMFER.

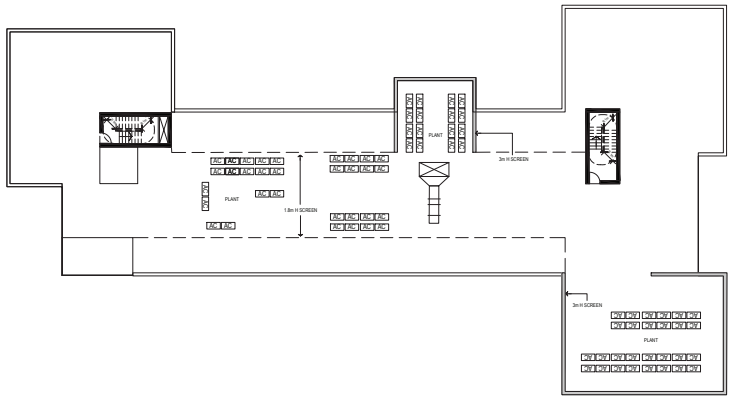
CONCRETE TO BE BRIGHTONLITE - ARCHITECT TO CONFIRM FINAL COLOUR BASED ON SAMPLE REVIEW.



3D PANEL

PRECAST FACADE PATTERN

THE 'WEAVE'



ROOF

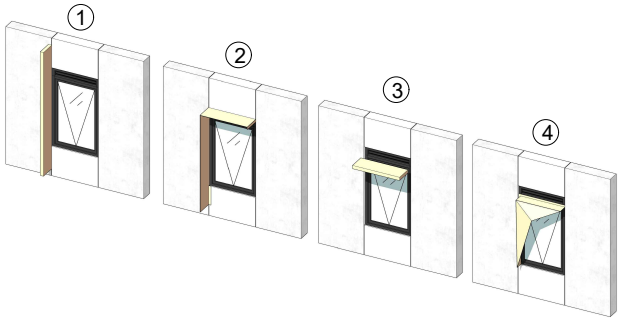
TYPICAL ADAPTIVE RE-USE FLOOR PLAN

APARTMENT LAYOUT

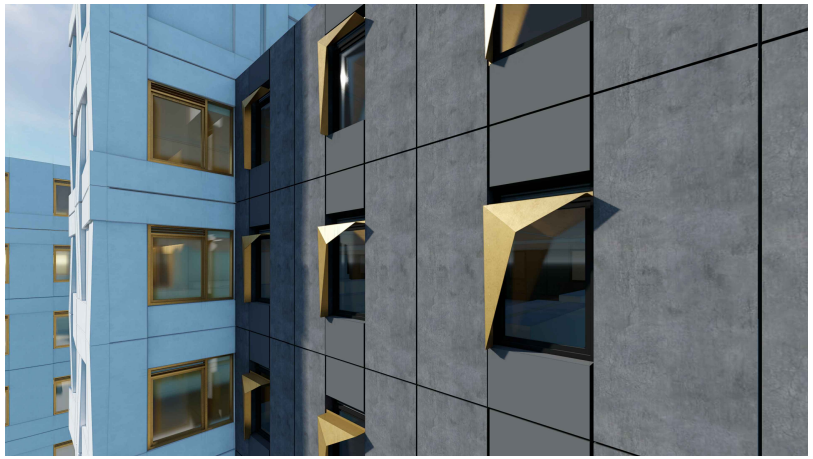
SHADING DEVICE ANALYSIS

SHADING DIAGRAMS

COMPARISON OF HORIZONTAL, VERTICAL AND HOOD DEVICES



3D PERSPECTIVE



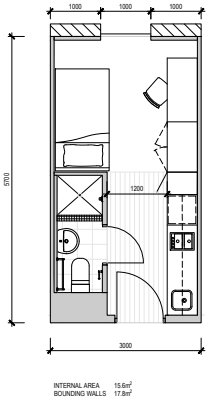
OPTION ④ WINDOW HOOD

We believe that the currently nominated vertical fins are effective in reducing direct solar loads throughout portions of the afternoon, however acknowledge that in late afternoon scenarios, direct sunlight will be unavoidable to Western facing windows.
Further analysis of shading devices shows that Option 4 window hood provides the best shading.
To further assist in reduction of solar loads in these scenarios, the project is intended to implement a well performing glazing product with low a solar heat gain coefficient (SHGC) to assist in minimising solar heat gain into spaces. It is our belief that this will assist in minimising air conditioning loads, and improve occupant thermal comfort within these spaces.

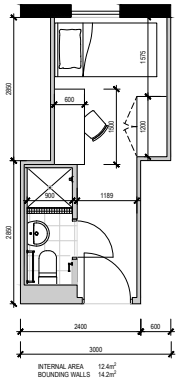
ROOM TYPES & COMMON AREAS

1:50 @ A1

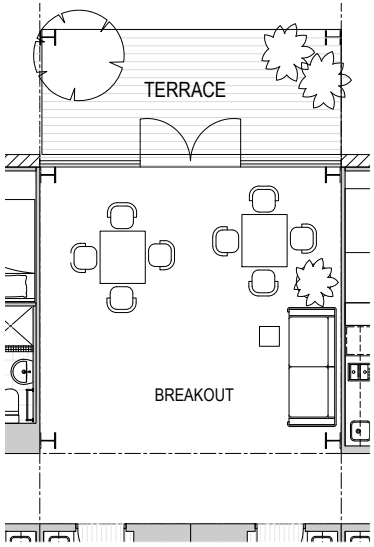
TYPICAL STUDIO



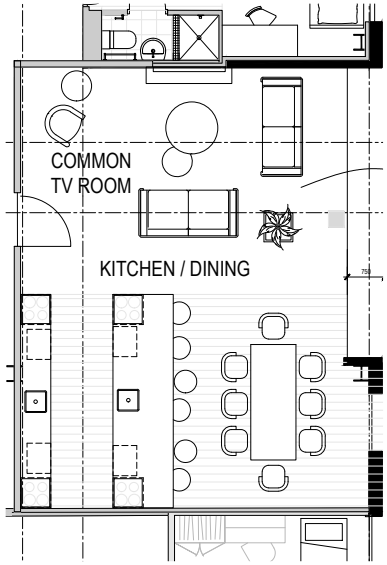
TYPICAL ENSUITE



BREAK-OUT SPACE - LEVEL 12-13

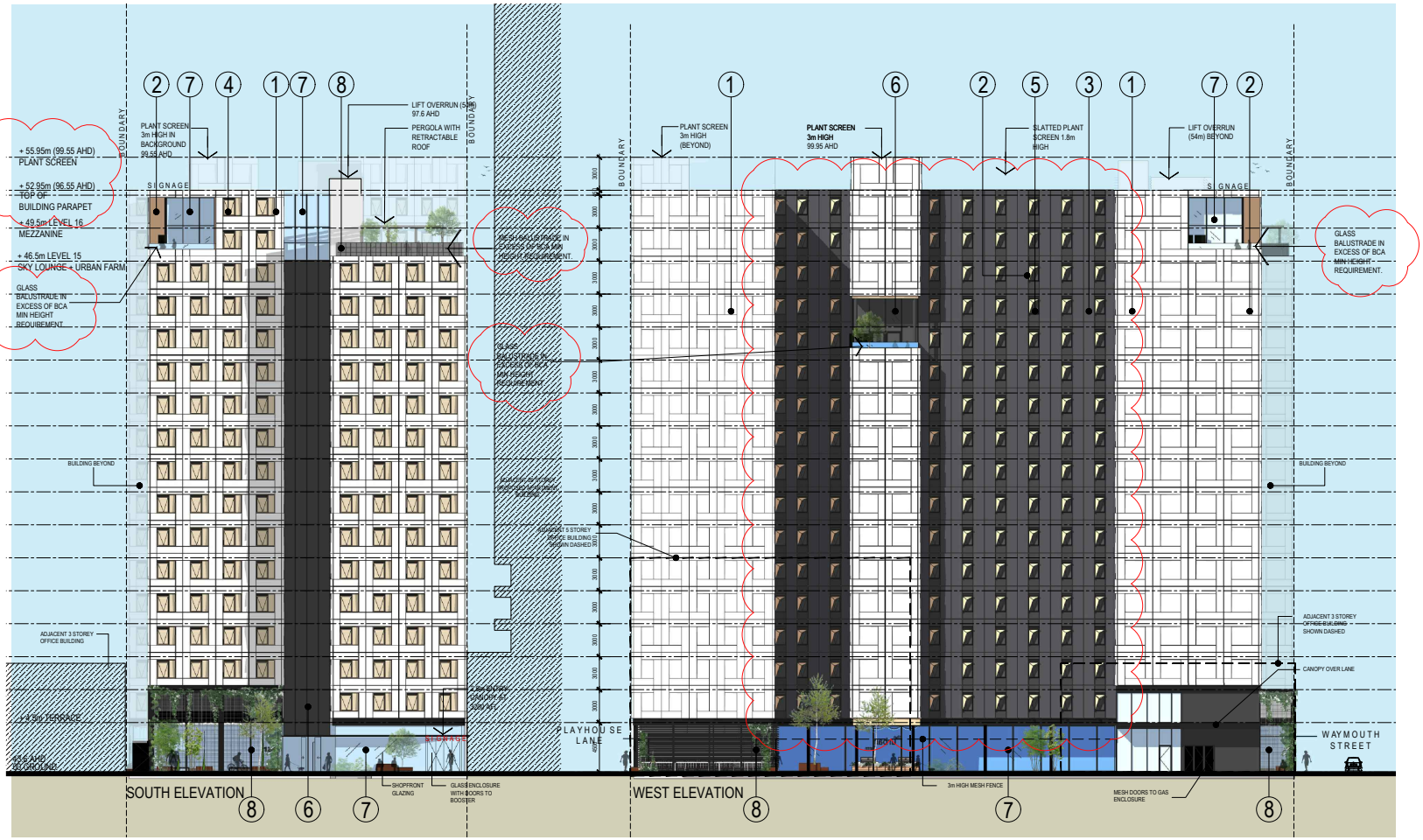


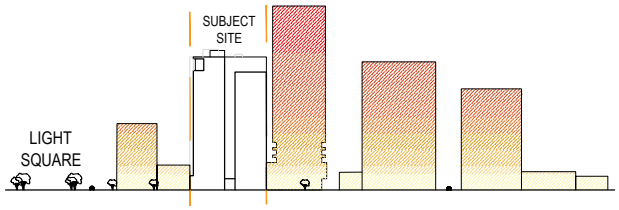
CLUSTER KITCHEN / LOUNGE



ELEVATIONS

1:200 @ A1



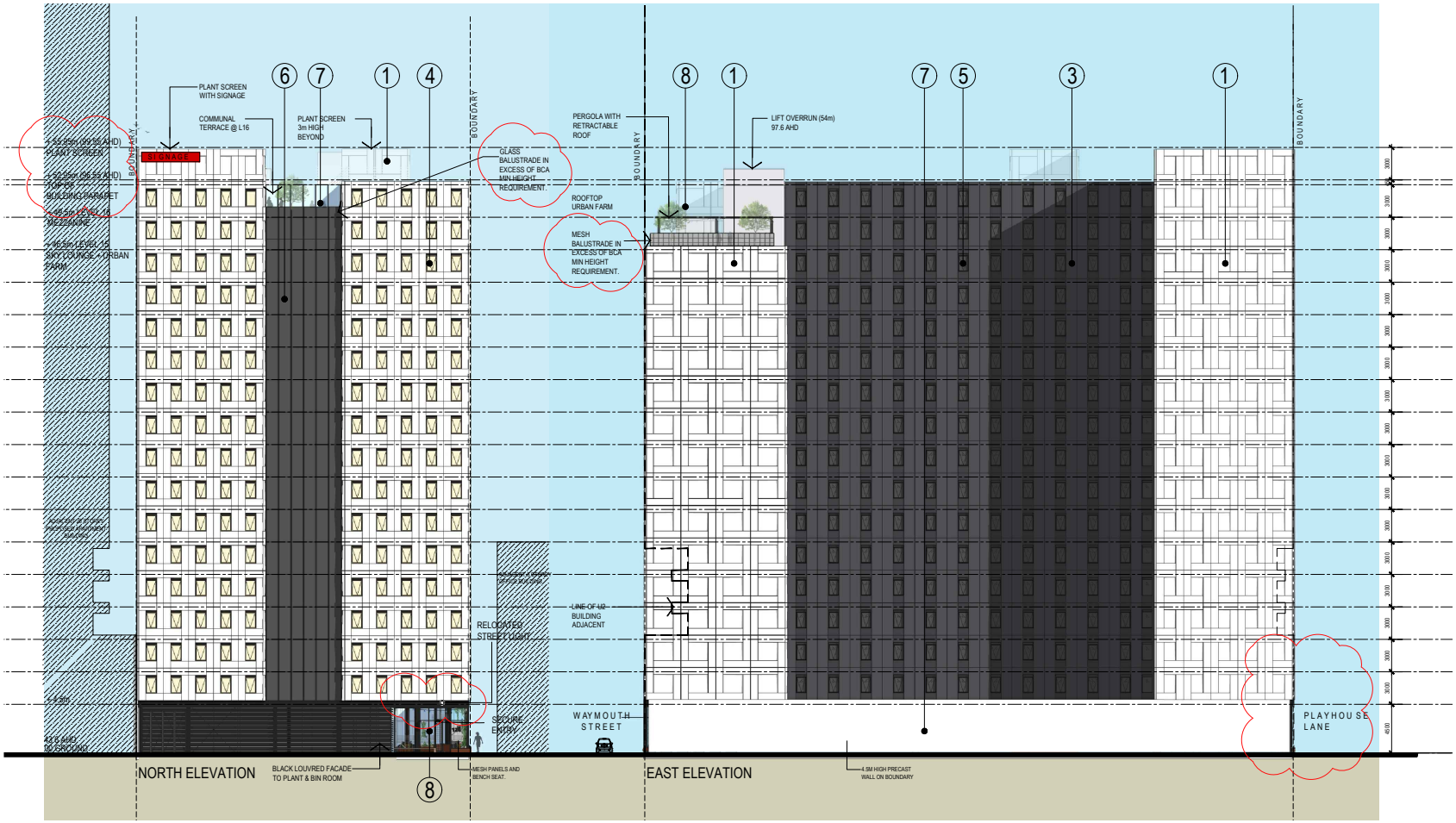


WAYMOUTH ST ELEVATION

1:1000

ELEVATIONS

1:200 @ A1



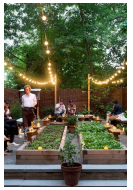
SECTIONS

A - SECTION THROUGH PODIUM
1:50

B - SITE SECTION
1:200

STUDY COURTYARD

SKY LOUNGE



ROOF TOP URBAN FARM

MASTERPLAN
TOWN + COUNTRY PLANNERS

8 January 2019

Ms Lauren Talbot
Senior Planning Officer
Planning and Development Directorate
Department of Planning, Transport and Infrastructure
PO Box 1815
ADELAIDE SA 5001

Email: lauren.talbot@sa.gov.au

Dear Lauren

Re: Proposed Multi-Storey Student Accommodation at 124 Waymouth Street Adelaide

We act for the Trust Company (Australia) Limited as Trustee for WH Waymouth Trust.

On behalf of our client we have pleasure in submitting this application for Development Plan Consent to construct a multi-storey student accommodation building on the above site. The proposed development is shown on the accompanying set of drawings prepared by Brown Falconer Group and is described in further detail in our Planning Report.

Following registration and receipt of a development number for this application, a separate application will be made to the City of Adelaide for approval to demolish existing improvements on the site. This approach mirrors the approach taken for a similar development now under construction at 89-109 Gray Street, Adelaide (DA 020/A053/17).

We also enclose a Development Application Form and an Electricity Declaration Form.

Kindly generate a Tax Invoice for the fees associated with the development including referral to the Government Architect/Associate Government Architect and we will arrange for payment to be made.

Please contact the writer if you have any queries in relation to this matter.

Yours faithfully

Graham Burns
MasterPlan SA Pty Ltd

Encl: Development Application Form
Electricity Declaration Form
Planning Report
Brown Falconer Group Drawings

DEVELOPMENT APPLICATION FORM

COUNCIL: ADELAIDE CITY COUNCIL

APPLICANT: MASTERPLAN SA PTY LTD ON BEHALF OF THE TRUST COMPANY (AUSTRALIA) LIMITED AS TRUSTEE FOR WH WAYMOUTH TRUST

Postal Address: 33 CARRINGTON STREET

ADELAIDE SA 5000

OWNER: UNDER CONTRACT TO THE TRUST COMPANY (AUSTRALIA) LIMITED AS TRUSTEE FOR WH WAYMOUTH TRUST

BUILDER: TBA

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:

OFFICE BUILDING WITH ASSOCIATED OFF STREET PARKING

FOR OFFICE USE

Development No:

Previous Development No:

Assessment No:

❑ **Complying**	**Application forwarded to DA**
❑ **Non-complying**	**Commission/Council on:**
❑ **Notification Cat 2**	/ /
❑ **Notification Cat 3**	**Decision:**
❑ **Referrals/Concurrence**	**Type:**
❑ **DA Commission**	**Date:** / /

	Decision	Fees	Receipt No	Date
Planning:				
Building:				
Land Division:				
Additional:				
Dev Approval:				

DESCRIPTION OF PROPOSED DEVELOPMENT: STAGED DEVELOPMENT OF MULTI STOREY STUDENT ACCOMMODATION BUILDING

LOCATION OF PROPOSED DEVELOPMENT:

House No: 124 Lot No: 101 Street: WAYMOUTH STREET Town/Suburb: ADELAIDE

Section No (full/part): NA Hundred: ADELAIDE Volume: 5610 Folio: 549

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): $70.9 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: **Dated:** 11 JANUARY 2019

GRAHAM BURNS (MASTERPLAN SA PTY LTD) FOR WH WAYMOUTH TRUST

ATTACHMENT A

CERTIFICATE OF TITLE

Government of South Australia
Department of Planning, Transport and Infrastructure

Product	Register Search (CT 5610/549)
Date/Time	18/09/2018 10:14AM
Customer Reference	2018076
Order ID	20180918002408
Cost	$28.75

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 5610 Folio 549

Parent Title(s)	CT 4274/719				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	04/01/1999	**Edition**	8	**Edition Issued**	07/02/2013

Estate Type

FEE SIMPLE

Registered Proprietor

GOLDFINGER CASINO PTY. LTD. (ACN: 066 315 026)
OF PO BOX 1 WOODCROFT TOWN CENTRE WOODCROFT SA 5162

Description of Land

ALLOTMENT 101 FILED PLAN 199658
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE MINISTER FOR INFRASTRUCTURE (T 6162005 AND T 6162006)

TOGETHER WITH RIGHT(S) OF WAY OVER THE LAND MARKED B APPURTENANT ONLY TO THE LAND MARKED Y (TT 8589890)

Schedule of Dealings

Dealing Number	Description
11878477	MORTGAGE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD.
12787437	LEASE TO BUILT ENVIRONS PTY. LTD. (ACN: 008 125 111) COMMENCING ON 27/02/2017 AND EXPIRING ON 26/10/2018 OF PORTION (TENANCY 11 IN F252766)
12985466	CAVEAT BY THE TRUST COMPANY (AUSTRALIA) LTD. (ACN: 000 000 993)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

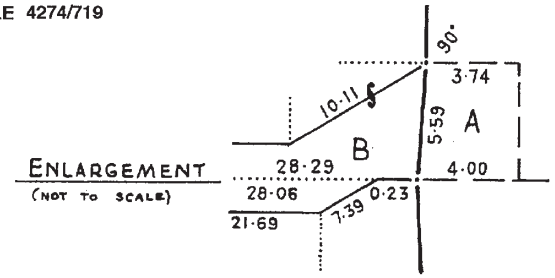
Registrar-General's Notes

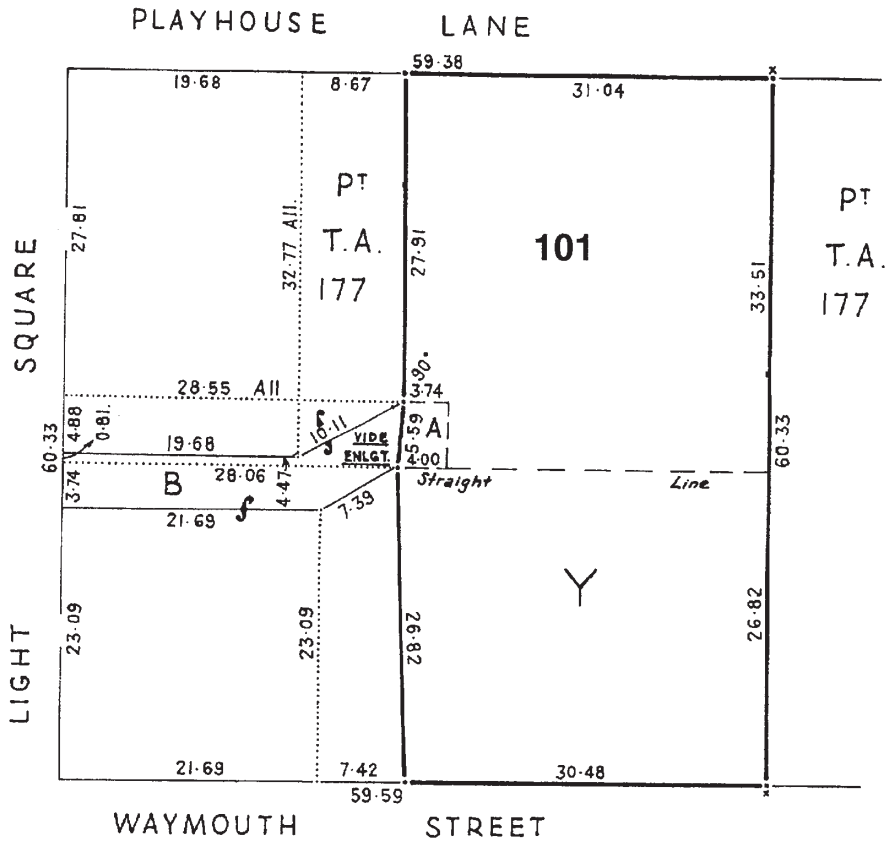
PLAN FOR LEASE PURPOSES VIDE G244/1995
PLAN FOR LEASE PURPOSES VIDE G317/1990
PLAN FOR LEASE PURPOSES VIDE G799/2000
APPROVED FILED PLAN FOR LEASE PURPOSES FX252766
APPROVED FILED PLAN FOR LEASE PURPOSES FX53460
APPROVED FX27573

Government of South Australia
Department of Planning, Transport and Infrastructure

Product	Register Search (CT 5610/549)
Date/Time	18/09/2018 10:14AM
Customer Reference	2018076
Order ID	20180918002408
Cost	$28.75

THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 4274/719
SEE TITLE TEXT FOR EASEMENT DETAILS





0 4 8 12 16 Metres

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

DEVELOPMENT REGULATIONS 2008

Form of Declaration

(Schedule 5, Clause 2A)

To:	STATE PLANNING COMMISSION
From:	MASTERPLAN SA PTY LTD
Date of Application:	7 JANUARY 2019

Location of Proposed Development:

House Number:	124	Lot Number:	101
Street:	WAYMOUTH STREET	Town/Suburb:	ADELAIDE
Section No (full/part):	-	Hundred:	-
Volume:	5610	Folio:	549

Nature of Proposed Development:

Construct a 17 storey student accommodation building for student accommodation purposes with associated facilities at ground floor level, with frontage to Waymouth Street and Playhouse Lane.

I, MasterPlan SA Pty Ltd, being the agent acting for the applicant in 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*.

7 January 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.

PLANNING REPORT

Proposed Multi-Storey Student Accommodation

at 124 Waymouth Street, Adelaide

Prepared by
MasterPlan SA Pty Ltd
ABN 30 007 755 277, ISO 9001:2015 Certified
33 Carrington Street, Adelaide SA 5000
Telephone: 8193 5600, masterplan.com.au

7 January, 2019

Contents

1.0 INTRODUCTION

MasterPlan SA Pty Ltd has been engaged by The Trust Company (Australia) Limited as trustee for WH Waymouth Trust ("our client") to assist with the preparation of a development application for the construction of a multi-storey student accommodation building at 124 Waymouth Street, Adelaide.

Our client's related entity (The Trust Company (Australia) Limited as trustee for WH Gray Street Trust) is currently constructing a multistorey student accommodation building, associated amenities and ground floor tenancies at 89-109 Gray Street Adelaide.

This report has been prepared in collaboration with Brown Falconer Architects. It contains a description of the development site, the locality and the proposed development, as well as our assessment of the proposed development against the relevant provisions of the Adelaide (City) Development Plan.

Our Planning Report is supported by:

- the relevant Certificate of Title;
- a compendium of architectural drawings by Brown Falconer Architects;
- a Landscape Concept Plan prepared by Hemisphere Design;
- an architectural Design Statement by Brown Falconer Architects;
- a Sustainability Management Plan by Lucid Consulting;
- an Acoustic Services Concept Design Report by BESTEC;
- a Bicycle, Parking and Refuse Vehicle Assessment by GTA Consultants;
- a Waste Management Plan by Colby Phillips Advisory; and
- a Preliminary Site Investigation by AGON Environmental.

We have concluded from our detailed and balanced assessment of the proposed development that it sufficiently accords with the relevant provisions of the Adelaide City Development Plan for the reasons set out herein, and is deserving of Development Plan Consent.

2.0 BACKGROUND AND PRE-LODGEMENT DISCUSSIONS

2.1 Pre-lodgement

Our client voluntarily participated in the State Planning Commission's Pre-Lodgement Panel (PLP) Process, including the Design Review Panel (DRP) Process with the Office for Design and Architecture South Australia (ODASA).

Through our client's project team, feedback was obtained from the key stakeholders and this information was then incorporated into the proposed development at the following Pre-Lodgement and ODASA Design Review meetings:

- Pre-Lodgement Panel Meeting #1 held on 9th November 2018; and
- Design Review Panel Meeting #1 held on 28th November 2018.

Through the pre-lodgement process, general stakeholder support for the following aspects of the design were noted:

- the proposed land use is highly envisaged;
- the building height is supported in principle;
- no concern was expressed with the north, east and west setbacks proposed;
- the setback at the base of the south west tower from Waymouth Street is supported as an alternative to a podium;
- the design direction which expresses the building as a collection of visually separated slender built forms;
- encouragement for the proposed double level communal space at Waymouth Street level and corresponding street activation;
- encouragement given for the inclusion of a canopy to Waymouth Street to provide pedestrian shelter; and
- general support for the proposed three dimensional façade and for the differentiation of height.

Elements identified by DPTI staff and ODASA through the PLP and DRP process, in addition to the requests for further clarification, were:

- further development of built form composition to deliver a bold and coherent outcome that convincingly reflects the design intent with particular reference to the symmetrical composition of the two northern towers;
- a review of courtyard screening treatment on the Waymouth Street frontage at the base of the south west tower to improve visual connection with the street;
- the layout and functionality of the eastern courtyard due to its size and limited solar access;
- rear access arrangements on Playhouse Lane as a principal access point leading to and from the tertiary education precinct to the north;
- lack of easily accessible communal spaces from the mid-level units;
- the location of the laundry in the north east corner of the 1st floor was considered to be less than optimal;
- the 1500mm wide corridor running north/south with a solid fire door is proposed. Options to create further relief and light within the corridor should be explored; and
- further details of ESD strategies;

In the development of the final plans the above matters have been considered and where relevant amendments to the design have been made in response to the comments made.

The design team has considered the preliminary comments and redesigned the proposal accordingly as detailed in the Design Statement prepared by Brown Falconer.

3.0 DEVELOPMENT SITE AND LOCALITY

3.1 Development Site

The development site is located on the northern side of Waymouth Street, extending through to a secondary frontage with Playhouse Lane. The site has a frontage of 30.48 metres to Waymouth Street and 31.04 metres to Playhouse Lane, yielding a total area of approximately 1,855 square metres.

The development site for the purpose of the proposed development is currently contained within a single land parcel:

CT VOLUME/FOLIO	PARCEL	PLAN
Volume 5610, Folio 549	Lot 101	File Plan 199658

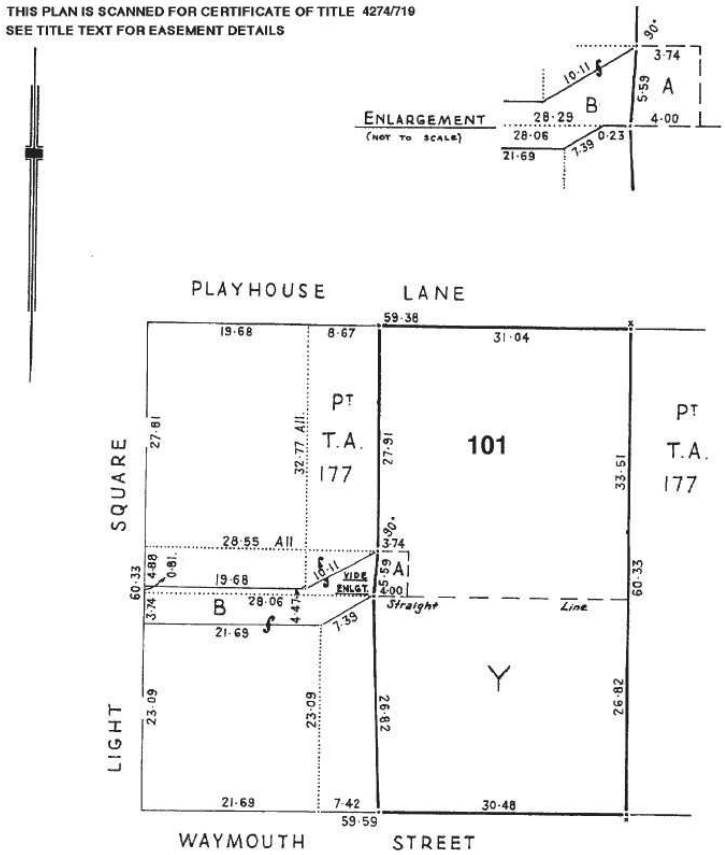


Figure 1: Lot 101 in CT Volume 5610, Folio 549

The development site is subject to an easement marked 'A' over the subject land in favour of the Minister for Infrastructure. The easement is approximately 4 metres by 5.59 metres and is positioned 26.82 metres north along the western boundary of the site from Waymouth Street.

The land exists together with right(s) of way over the land on the adjacent allotment marked 'B' but only in respect to the area marked "Y" on the title. The right-of-way runs from the western boundary of the site at a width of 3.74 metres through to and connecting with Light Square.

A red brick three-storey office building currently occupies the site with an at-grade car park at the rear abutting Playhouse Lane. The office building is set back 2.4 metres from Waymouth Street, 21.0 metres from Playhouse Lane, 4.5 metres from the western boundary and 2.2 metres from the site's eastern boundary.

Vehicle access is available via Waymouth Street along the western boundary of the site, together with direct access from Playhouse Lane.

Photo 1: Development Site from Waymouth Street facing north east

Photo 2: Development Site from Waymouth Street facing north west

Photo 3: Development Site from Playhouse Lane at the rear

3.2 Nature of the Locality

The locality primarily comprises of a mix of commercial tenancies and various forms of short term accommodation.

The development site and wider locality are part of the Capital City Zone. Whilst the site does not sit within a specific Policy Area, adjacent sites to the east and north are located within Central Business Policy Area 13.

Notable land uses in the immediate locality include:

- a three storey commercial and office building to the west of the site at 134 Waymouth Street;
- an eight storey commercial and office building to the west of the site at 76 Light Square;
- a five storey commercial building with ground floor café to the west of the site at 70-72 Light Square;
- an eight storey commercial and office building to the north west of the site at 60 Light Square;
- an eight storey car park to the north east of the site at 2 Playhouse Lane (Playhouse Lane Car Park);
- an approved and under construction 26 storey mixed use building to the east of the site at 114 Waymouth Street which shields the proposed building in respect to Airport Building Height;
- a two storey State Heritage Place (The Old Queen's Theatre) to the east of the site at Playhouse Lane & Gilles Arcade;
- a single storey commercial and retail building to the south east of the site at 119 Waymouth Street;

- a two storey Local Heritage Place used for short term accommodation (backpacker hostel accommodation) to the south of the site at 123 Waymouth Street;
- a two storey commercial and retail building to the south west of the site at 133 Waymouth Street; and
- a three storey accommodation building (Adelaide Central YHA) to the south west of the site at 135-137 Waymouth Street.

Playhouse Lane is a relatively short two-way public road that connects with Gilles Arcade. Playhouse Lane and Gilles Arcade connect Light Square with Currie Street. This L-shaped road incorporates on-street parking along one side.

On street parking along the northern section of Waymouth Street (fronting the site) is limited to two hours between 8.00 am-6.00 pm Monday to Friday, and three hours between 8.00 am-12.00 pm Saturday. Parking is unrestricted at all other times of the day.

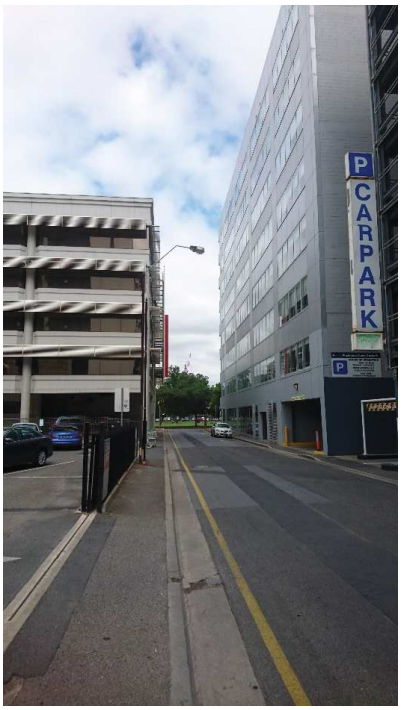
On street parking along the southern section of Waymouth Street (fronting the site) is restricted between 6.00 am-9.00 am and 5.00 pm-8.00 pm on any day. This portion of Waymouth Street is a loading zone between 9.00 am-5.00 pm on any day. Parking is unrestricted at all other times of the day.

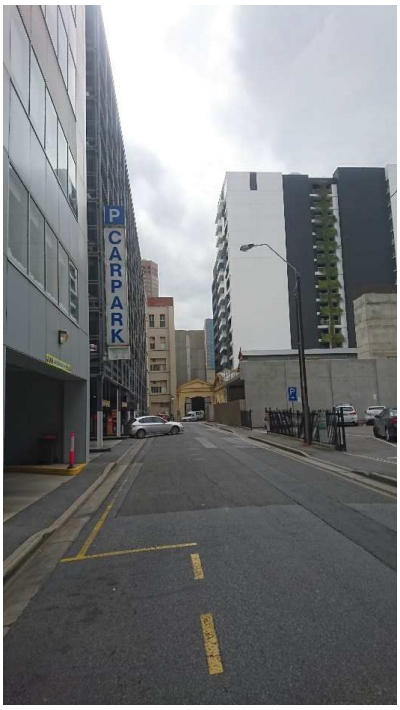
On street parking along Playhouse Lane is limited to one hour between 8.00 am-6.00 pm Monday to Saturday and limited on street parking is available on Gilles Arcade for one hour between 9.00 am-5.00 pm Saturday, with loading zone times between 8.00 am-5.00 pm Monday to Friday. Parking is unrestricted during all other times of the day along Playhouse Lane and Gilles Arcade.

Waymouth Street has two lanes for two-way vehicle movement, a bike lane on each side of the road and a moderate width footpath on both the northern and southern side of the road. Playhouse Lane has a narrow footpath on both sides of the road that is suitable for single file pedestrian movement.

No vegetation or street trees front the site on Waymouth or Playhouse Lane.

Light Square (*Wauwi*) is located approximately 50 metres west of the site and comprises of landscaped public space and pedestrian paths. The Square is also the burial site of Colonel William Light, and is marked with a monument consisting of a theodolite on top of a tall column.





Photos 4 and 5: Playhouse Lane looking west and east

Photo 6: Light Square looking towards the site

Photo 7: Waymouth Street looking east

4.0 PROPOSED DEVELOPMENT

Our client seeks Development Plan Consent from the State Planning Commission to construct a 17 storey student accommodation building. The new building will contain:

- a foyer and reception, communal student facilities, communal kitchen, cinema, courtyard, bicycle storage, service infrastructure and waste storage with an associated onsite vehicle loading bay at Ground Level;
- communal student facilities including fitness and wellbeing room, private study and laundry at Level 1;
- communal student amenities including a breakout space on Levels 12 and 13 and a sky lounge across Levels 15 and 16 and a communal roof top garden on Level 15;
- a total of 787 purpose built student accommodation beds comprising a mix of single occupancy studios (including DDA compliant rooms), single occupancy en-suite rooms and cluster accommodation with shared bathrooms; and
- a communal kitchen, dining and lounge area on each accommodation level.

The proposed development is represented across the compendium of architectural drawings at **Appendix A**.

The proposed development is described in detail below in the following sections and more fully illustrated in the compendium of plans accompanying the application prepared by Brown Falconer, identified in Table 1 – Architectural Drawing Schedule.

Table 1: Architectural Drawing Schedule

SHEET NUMBER	SHEET NAME
00	Cover Sheet
01	Context Plan and Analysis
02	Form and Massing
03	Perspectives
04	Perspectives
05	Long Views and Sun Study
06	Locality Plan
07	Site and Ground Floor Plan
08	Floor Plans
09	Roof Plan, Adaptive Re-use Plan and Details
10	Room Types and Common Areas

SHEET NUMBER	SHEET NAME
11	Elevations
12	Elevations
13	Sections
14	Details
	Demolition Plan

4.1 Land Use

The proposed development is best described as a 17 storey purpose built student accommodation building with a retail tenancy at ground floor level.

The communal facilities associated with the student accommodation are subservient and ancillary to that use, and form part of the services provided as part of the overall accommodation experience.

4.2 Accommodation Mix

The proposed student accommodation rooms provide four different types of accommodation typologies with variations therein, namely:

- typical studio;
- DDA compliant studio;
- typical en-suite; and
- cluster accommodation.

The details and breakdown of the student accommodation rooms are outlined in Table 2 below:

Table 2: Accommodation rooms breakdown

Unit Type	# of Units	# of Beds	Description
Studio	518	518	Single Bed Studio with en-suite kitchenette, desk and wardrobe
DDA Studio	13	13	DDA Compliant Single Bed Studio with en-suite kitchenette, desk and wardrobe
En-suite	128	128	Single Bed Studio with en-suite kitchenette, desk and wardrobe
Cluster	16	128	Eight single bedrooms with desk and wardrobe with shared access to four bathrooms.
TOTAL	**675**	**787**	

4.2.1 Student Breakout/Amenity Spaces

Student break out and amenity areas are conveniently located vertically throughout the building with designated communal areas located at Ground Floor, Level 1, break out rooms on Levels 12 and 13 and across Levels 15 and 16.

Situated centrally to the northern wing of the building on all accommodation levels, between the 'En-suite' and the 'Cluster' rooms, is a communal kitchen, dining and lounge for residents of these room types.

The amenity spaces provide different activity opportunities for the students as detailed below:

- Ground Floor:
  - study hub with direct access to a private landscaped courtyard fronting Waymouth Street;
  - private lounge;
  - communal open plan seating / dining and games room opening onto a large internal courtyard;
  - communal kitchen;
  - cinema room(s); and
  - music/ dance / multi-purpose room.
- Level 1:
  - fitness and wellbeing room overlooking Waymouth Street;
  - private study rooms with a terrace overlooking Waymouth Street; and
  - laundry.

- Level 12:
  - breakout room off the central corridor with a west facing double height terrace;
- Level 13:
  - breakout room off the central corridor facing west across a double height terrace;
- Level 15:
  - double height sky lounge over level 15 and 16 with study space; and
  - roof top communal garden.
- Level 16:
  - mezzanine to double height sky lounge overlooking the Level 15 sky lounge below.

4.3 Built Form

4.3.1 Building Height

The Adelaide(City) Development Plan provides a definition of "building level" in Schedule 1 of the Development Plan. This term is defined as:

> ***building level:*** *that portion of a building which is situated between the top of any floor and the top of the floor next above it and if there is no floor above, that portion between the top of the floor and the ceiling above it. It does not include a floor located more than 1.5 metres below the median natural or finished ground level or the roof top location of plant and mechanical equipment.*

Accordingly, the proposed built form comprises the construction of a multi-storey building comprising 17 building levels with a maximum building height to the top of parapet of 52.95 metres above the Waymouth Street finished ground level. Plant screens forming part of the roof top plant and equipment contribute an additional 3.0 metres but are not part of the building height.

4.3.2 Setbacks

Setbacks at all levels of the building vary from the respective front and side boundaries of the site as a direct result of the building massing as follows:

Table 3 : Building set backs

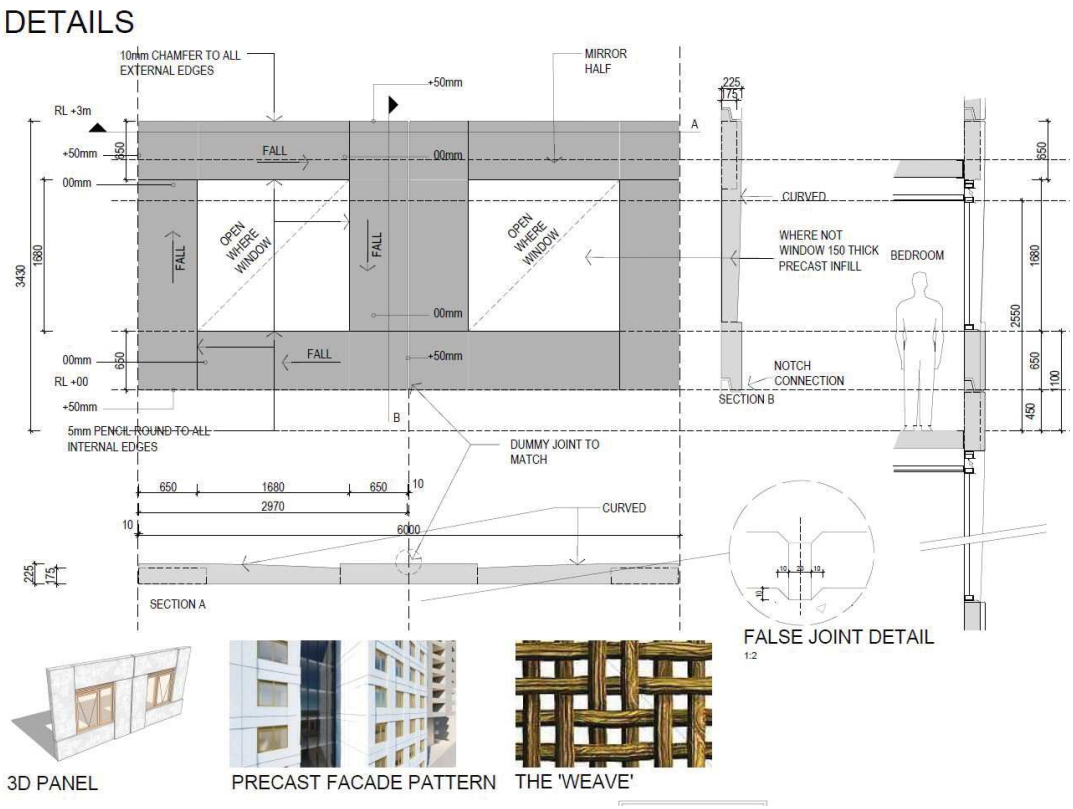
BUILDING ELEMENT	SETBACK
Ground Level Foyer / Reception	Nil to Waymouth / Nil to eastern side boundary
Ground Level Entry	3.0 metres to Waymouth Street
Ground Level Study Hub	5.0 metres to Waymouth / 1.6 metres to western side boundary
Main Courtyard Ground Level	8.3 metres to building façade from western side boundary
Rear Façade (all levels)	Nil setback to Playhouse Lane* (750mm to 2.0 metre setback to glazing of common area centrally located to façade at the upper levels)
Level 1 Fitness and Wellbeing Room	Nil to Waymouth Street / Nil to eastern side boundary
Level 1 Private Study	5.0 metres to building façade from Waymouth Street / 3.0 metres to terrace from Waymouth Street / 1.6 metres to western side boundary
Central accommodation rooms (all Levels)	8.3 metres to building façade from western side boundary* (breakout section projections into setback) / 9.4 metres to building façade from eastern side boundary)
Level 2-16 Accommodation Rooms Waymouth Street	Nil to Waymouth Street and built to the eastern side boundary / 3.0 metres to Waymouth Street and 1.6 metres to western side boundary
Level 2-16 Accommodation Rooms Playhouse Lane	Nil side setbacks and nil rear setback

4.3.3 Architectural Design Statement

The Architectural Design Statement prepared by Brown Falconer accompanying the lodgement documents provides:

- a desire to remain within the prescribed building height for this part of the Capital City Zone;
- a roof top urban farm for residents' use;
- inclusion of a roof top screen around roof top plant and equipment;
- a larger courtyard space on the western side of the building and consequent removal of the smaller courtyard on the eastern side;

- direct solar access to the roof top urban farm;
- site access available from Waymouth Street, Playhouse Lane and Light Square;
- resolution of the screening material and landscaping to the Waymouth Street frontage;
- a façade 'weave' to improve the external appearance of the building façade;
- larger common areas with glazing to the northern facades;
- a direct link to the urban farm from the common sky lounge;
- relocation of the laundry and gym to a more central location at Level 1; and
- detailing of the vertical shade fins to demonstrate their effectiveness to combat afternoon solar penetration.



4.3.4 Materials and Finishes

The palette of external materials and finishes is detailed within the Design Architectural Statement.

4.3.5 Signage

Signage zones are proposed at the parapet on all façades. No specific graphics or sign form has been identified at this stage.

4.4 Pedestrian / Bicycle Access, Traffic and Parking

The proposed development provides secure pedestrian access at three locations, specifically the main entrance from Waymouth Street, the side gate access to the central courtyard from Waymouth Street and through the bicycle storage area off Playhouse Lane. The latter two access points also offer accessible cyclist access external to the building.

On site manoeuvrability is accommodated from Playhouse Lane to enable service delivery vehicles and waste collection to reverse into the site and exit in a forward motion.

No onsite parking is proposed in association with the use.

Provision for the secure parking of 80 bikes is accommodated within the development. External access is provided to the bike store from Playhouse Lane and is also available from Waymouth Street through the central ground floor courtyard.

4.5 Waste Management

The details of the Waste Management Strategy are outlined in the report prepared by Colby Philips Advisory.

In summary, waste generated by the proposed development is to be managed as follows:

- at ground level through the provision of mobile waste bins and external waste bin storage at the rear of the site;
- waste is to be delivered to the ground level through a dual chute system, with general and recyclable waste being separated by the user at each floor in the bin room when placed in the chute. Green and e-waste is to be manually disposed of at ground level;

- chute discharge area with 2 x 3-bin linear automatic bin conveyers for general waste and recycling 1100L skip bins; and
- a private contractor will be employed to undertake waste removal three times a week.

4.6 Services

Lucid Consulting has provided building services input into the design of the proposed development which includes:

- Electrical and communication services noting;
  - the proposed transformer is located at the rear of the site with direct access from Playhouse Lane; and
  - the main Switch Room backs onto the Transformer;
  - a separate electrical and communications room is located behind a lift shaft.
- Fire services;
  - Fire tanks and the Pump Room are located on the ground floor co-located with the Hydraulic Plant directly adjacent the Transfer and MSR;
  - a Fire Booster is integrated into the primary façade of the building fronting Waymouth Street; and
  - the Fire Indicator Panel sits adjacent the Electrical and Communications room within the entry.
- Hydraulic services including sewer, water and gas;
  - the gas meter and equipment are integrated into the rear elevation with direct access to Playhouse Lane;
  - the Hydraulic Plant is located at ground level co-located with the Fire Pumps and Fire tanks.
- Mechanical services;
  - individual Air Handling Units at both ground level and on roof top platforms sufficiently screened from view.
- Vertical transportation services
  - three (3) separate lifts and two fire stairs have been provided to meet the required demand for a building of this class of accommodation.

The development site is provided with sufficient access to public infrastructure services to accommodate the anticipated demand. The architectural drawings appropriately accommodate the spatial requirements for the internal service infrastructure of the building.

4.7 Staging

The construction of the building is to occur in four consecutive stages for the purposes of issuing staged Building Rules Consents. The staging of the proposed development is as follows:

- Stage 1: Demolition;
- Stage 2: Substructure construction;
- Stage 3: Superstructure construction; and
- Stage 4: Architectural fit-out and external façades.

A separate application is being made to the City of Adelaide to demolish existing improvements and prepare the site so that it is fit for purpose. The demolition application will be accompanied by adequate security. This same approach was used for the student accommodation project now under construction at 89-109 Gray Street.

5.0 DEVELOPMENT PLAN ASSESSMENT

The relevant version of the Adelaide (City) Development Plan for procedural and assessment purposes is the version which was consolidated on 7 June 2018.

The development site, under this version of the Development Plan, is situated entirely within the Capital City Zone as shown on Adel/18. The site is not located within any specific Policy Area.

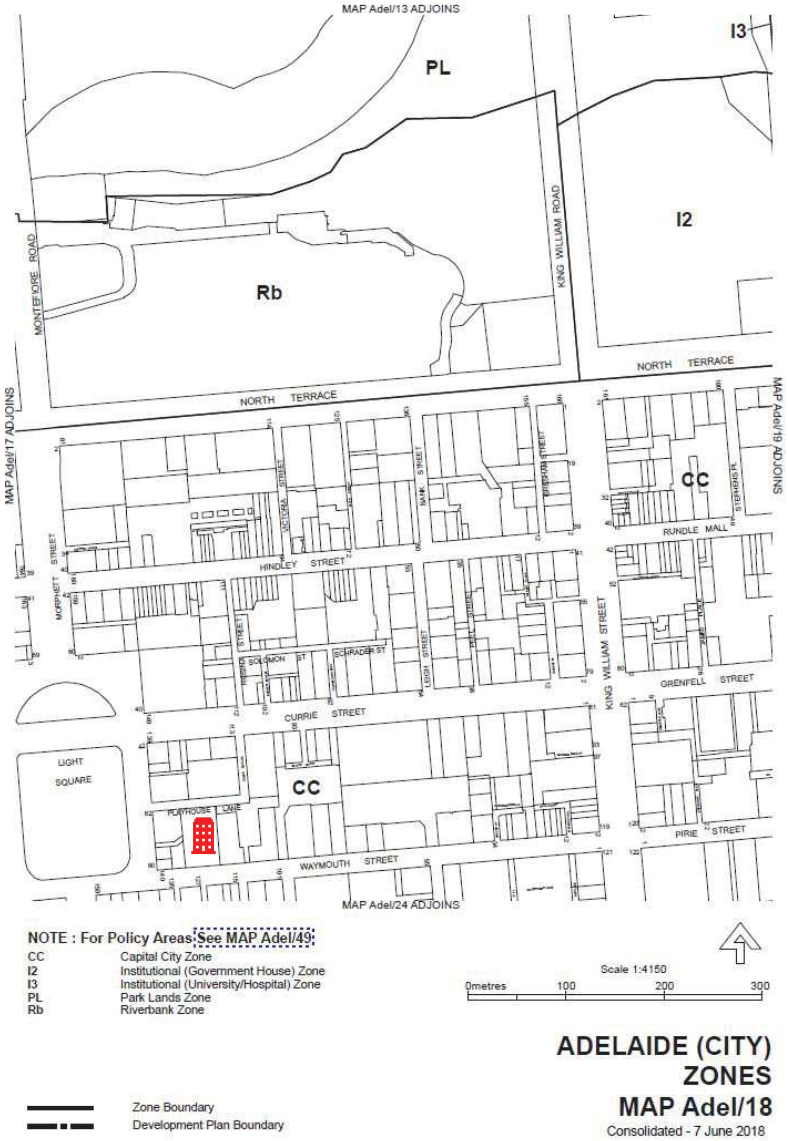


Figure 2: Zone Map Adel/18 Extract

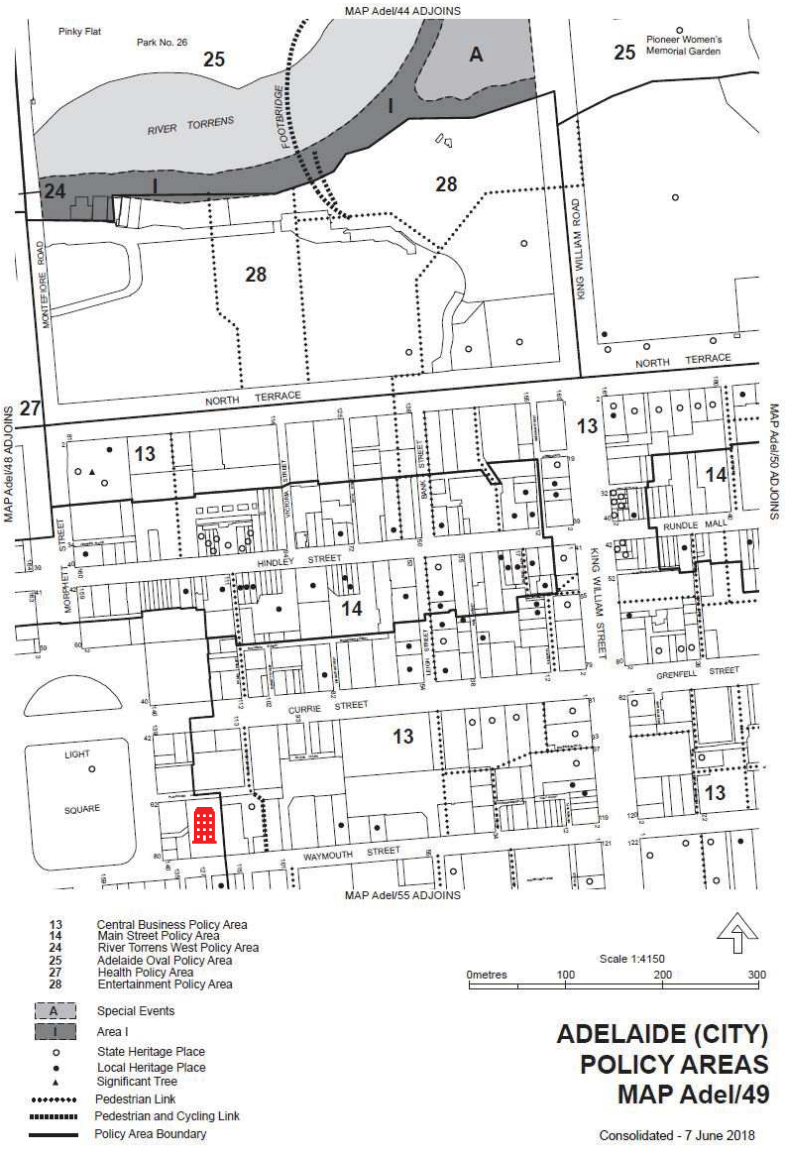


Figure 3: Policy Area Map Adel/49 Extract

5.1 Procedural Matters

5.1.1 Relevant Authority

The relevant authority for the purpose of the assessment of the application is the State Commission Assessment Panel in accordance with Schedule 10 Part B. In accordance with Section 34 (1)(b) of the *Development Act, 1993* the Development Assessment Commission is constituted by the regulations as the relevant authority.

> *4B—City of Adelaide—developments over $10m*
>
> *(1) Development in the area of The Corporation of the City of Adelaide where the total amount to be applied to any work, when all stages of the development are completed, exceeds $10 000 000.*
>
> *(2) Subject to subclause (3), development— (a) under an application to vary a development authorisation given by the Development Assessment Commission under this clause; or (b) which, in the opinion of the Development Assessment Commission, is ancillary to or in association with a development the subject of an authorisation given by the Development Assessment Commission under this clause.*
>
> *(3) Subclause (2) does not apply to development involving a building in relation to which a certificate of occupancy has been issued.*

The proposed development comprises the construction of a building with an estimated development cost of $80.0 million.

5.1.2 Nature of Development

The proposed development of a multi-storey student accommodation building is neither listed as Complying Development nor Non-complying Development under Capital City Zone Principles 38 and 39 respectively. Accordingly, the application is required to be assessed on its merits.

5.1.3 Category of Development

Capital City Zone Principle of Development Control 40 identifies those developments that are listed as Category 1 or Category 2 for the purpose of public notification in addition to those expressed in Schedule 9 of the *Development Regulations 2008*.

All forms of development are listed as Category 1, except those classified as non-complying or Category 2.

The proposed development is not listed as non-complying or Category 2 and accordingly is Category 1 for the purpose of Public Notification.

5.1.4 Statutory Referrals

The following agencies have been identified as requiring referrals under Section 37 of the *Development Act, 1993*:

- Government Architect or Associate Government Architect (ODASA):

  24—Certain development in City of Adelaide

  Development in the area of the Corporation of the City of Adelaide for which the Development Assessment Commission is the relevant authority under Schedule 10 clause 4B (excluding variations of applications—see clause 1(5a) of this Schedule).

- Commonwealth Secretary for the Department of Transport and Regional Services:

  9—Airports

  If the relevant Development Plan contains a map entitled Airport Building Heights, development within the area shown on the map which would exceed a height prescribed by the map.

5.2 Land Use

We are of the opinion that the proposal, with the incorporation of ground level retail facilities, is appropriate on the basis that:

- student accommodation is explicitly listed as an envisaged land use under PDC 1 of the Capital City Zone; and
- all of the rooms have been designed in a manner which would allow for adaptive re-use of the building (as discussed further below).

5.3 Character and Setbacks

The Desired Character Statement for the Capital City Zone specifies the built form and desired character sought.

The following extracts from the Capital City Zone Desired Character statement in addition to PDC 11 are relevant to the assessment of the application:

> *"High-scale development is envisaged in the Zone with high street walls that frame the streets.*
>
> *However an interesting pedestrian environment and human scale will be created at ground floor levels through careful building articulation and fenestration, frequent openings in*

building façades, verandahs, balconies, awnings and other features that provide weather protection.

In important pedestrian areas, buildings will be set back at higher levels above the street wall to provide views to the sky and create a comfortable pedestrian environment. In narrow streets and laneways the street setback above the street wall may be relatively shallow or non-existent to create intimate spaces through a greater sense of enclosure. In the Central Business Policy Areas, upper level setbacks are not envisaged.

Non-residential land uses at ground floor level that generate high levels of pedestrian activity such as shops, cafés and restaurants will occur throughout the Zone. Within the Central Business Policy Area, residential land uses at ground level are discouraged. At ground level, development will continue to provide visual interest after hours by being well lit and having no external shutters.

There will also be a rich display of art that is accessible to the public and contextually relevant.

Exemplary and outstanding building design is desired in recognition of the location as South Australia's capital. Contemporary juxtapositions will provide new settings for heritage places.

Innovative forms are expected in areas of identified street character, referencing the past, but with emphasis on modern design-based responses that support optimal site development."

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

The ground floor of the building incorporates floor to ceiling glazing on the streetscape façade and a recessed but defined entrance point to the public lobby using a canopy over the footpath leading the main entrance for wayfinding purposes. The location of the primary entrance/reception to the Student Accommodation and associated Student Hub and Courtyard Garden will reinforce the interesting pedestrian environment and human scale envisaged along Waymouth Street, while also providing a high degree of pedestrian permeability.

All building components are positioned regularly to both Waymouth Street and Playhouse Lane.

5.4 Built Form

5.4.1 Design and Appearance

The following Built Form and Townscape Council-wide Objectives and PDCs outline the intent to be attained by development within the City of Adelaide. These provisions also directly reflect the importance of the built form and architectural expression contemplated in the CBD.

Capital City Zone

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

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

Materials, Colours and Finishes

PDC 187 The design, external materials, colours and finishes of buildings should have regard to their surrounding townscape context, built form and public environment, consistent with the desired character of the relevant Zone and Policy Area.

PDC 188 Development should be finished with materials that are sympathetic to the design and setting of the new building and which incorporate recycled or low embodied energy materials. The form, colour, texture and quality of materials should be of high quality, durable and contribute to the desired character of the locality. Materials, colours and finishes should not necessarily imitate materials and colours of an existing streetscape

PDC 189 Materials and finishes that are easily maintained and do not readily stain, discolour or deteriorate should be utilised.

PDC 190 Development should avoid the use of large expanses of highly reflective materials and large areas of monotonous, sheer materials (such as polished granite and curtained wall glazing).

The importance of the proposed built form quality in the Capital City Zone is recognised in the relevant Zone and Council-wide Principles of Development Control that variously seek:

"high standard of architectural design and finish which is appropriate to the City's role and image as the capital of the State"

"Development which incorporates a high level of design excellence"

The proposed development was the subject of the Design Review Process with the Office of Design and Architecture South Australia where the quality of the design was critiqued, reviewed and recognising site constraints, site context and the prominence of a building of this height.

At ground level, the innovative design and contemporary architectural presentation of the building does not seek to mimic or copy existing buildings but responds subtly to their design cues.

The Architectural Statement prepared by Brown Falconer Architects accompanying the lodgement documents provides a detailed description of the design philosophy and the contextual reference for the design.

5.4.2 Building Height

PDC 21 of the Capital City Zone advises that development should not exceed the maximum building height shown in Concept Plan Figures CC/1 and 2 unless particular circumstances are met, and specific design criteria have been incorporated into the design of the building.

PDC 22 of the Capital City Zone and Council Wide PDC 172 provide specific guidance with respect to the height of buildings. Together, these provisions encourage:

PDC 22: Development should have optimal height and floor space yields to take advantage of the premium City location and should have a building height no less than half the maximum shown on Concept Plan Figures CC/1 and 2, or 28 metres in the Central Business Policy Area, except where one or more of the following applies:

- **(a) a lower building height is necessary to achieve compliance with the Commonwealth Airports (Protection of Airspace) Regulations;**
- **(b) the site is adjacent to the City Living Zone or the Adelaide Historic (Conservation) Zone and a lesser building height is required to manage the interface with low-rise residential development;**
- **(c) the site is adjacent to a heritage place, or includes a heritage place;**
- **(d) the development includes the construction of a building in the same, or substantially the same, position as a building which was demolished, as a result of significant damage caused by an event, within the previous 3 years where the new building has the same, or substantially the same, layout and external appearance as the previous building.**

PDC 172 Buildings and structures should not adversely affect by way of their height and location the long-term operational, safety and commercial requirements of Adelaide International Airport. Buildings and structures which exceed the heights shown in Map Adel/1 (Overlay 5) and which penetrate the Obstacle Limitation Surfaces (OLS) should be designed, marked or lit to ensure the safe operation of aircraft within the airspace around the Adelaide International Airport.

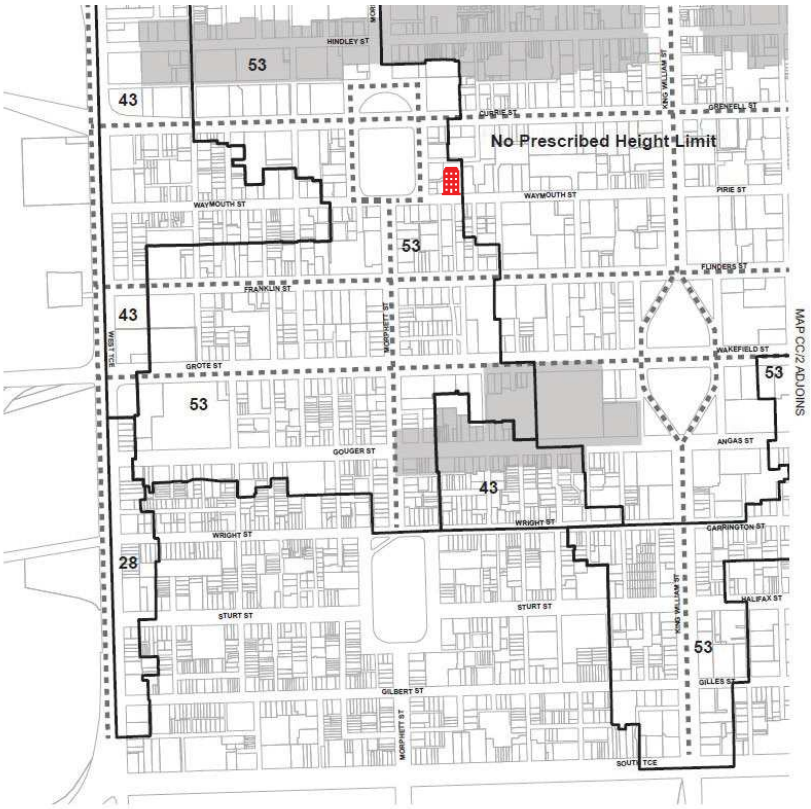


Figure 4: Building Heights Concept Plan Figure CC/1 extract

The proposed building will be 17 storeys or 52.95 metres above the Waymouth Street finished ground level. It will therefore comply with the prescribed maximum height limit of 53 metres expressed in Concept Plan Figure CC/2, and will satisfy the minimum building height requirement of 26.5 metres expressed by Council wide PDC 22.

While the proposed roof top plant incorporates screens of 3.0 metres in height which will result in structures exceeding the maximum prescribed building height of 53 metres, for the following reasons we do not consider this warrants the trigger for the "Over height" provisions to come into effect:

- The relevant phrase used in the City of Adelaide Development Plan is "maximum building height". In the Capital City Zone that is the term used on Building Heights Concept Plans CC/1 and CC/2, and in PDC's 16, 21 and 25.
- The definition of building height in the Regulations is a measurement to finished roof height. Accordingly, this raises the question: is "building height" the same as "maximum building height"?

- The answer to the above question boils down to whether the proposal's maximum building height includes the parapet. If the parapet is included, the maximum building height is 52.95 metres. We accept that the parapet's design is such that it does 'read' as a meaningful part of the overall building height, and therefore could be included as part of the maximum building height from a practical, common-sense point of view.
- If the parapet is excluded, the maximum building height (to finished roof height) is 52.50 metres.
- Those elements of the building on the roof, such as the plant screen and lift over-run, are not part of the maximum building height by reference to the definition of 'building height' in the Regulations. The screen in particular should not be treated as part of the building height because it is not part of the parapet – see Roof Plan showing the screen outlined with a broken line and set back 3.0 metres from the building edge/parapet. The screen falls under the same category as the lift over-run and other roof-top plant and equipment. Under the definition of 'building height' the screen should be excluded because it is captured by the last phrase used in the definition, namely: ". . . any antenna, aerial, chimney, flagpole or the like".
- Whether the parapet is included or not, the building height does " . . . not exceed the maximum building height shown in Concept Plan Figures CC/1 and CC/2 . . . " (Capital City Zone PDC 21). In the event that the building height is measured to the top of the parapet will be of no consequence on this occasion, because the maximum building height will still only be 52.95 metres inclusive of the parapet.

For these reasons we submit that the roof top plant screen should not be included as part of the building height.

It is also of relevance to note that:

- the site of the of the proposed development abuts land immediately to the east which is in an area with 'No Prescribed Height Limit";
- the roof top plant screens are set well back from primary façade of the building; and
- the extent of roof top plant screen encroachment is of minor consequence in the overall assessment of building height.

The building will exceed the relevant Obstacle Limitation Surface (OLS) Contour shown on Map Adel/1 (Overlay 5) of approximately 90 metres AHD.

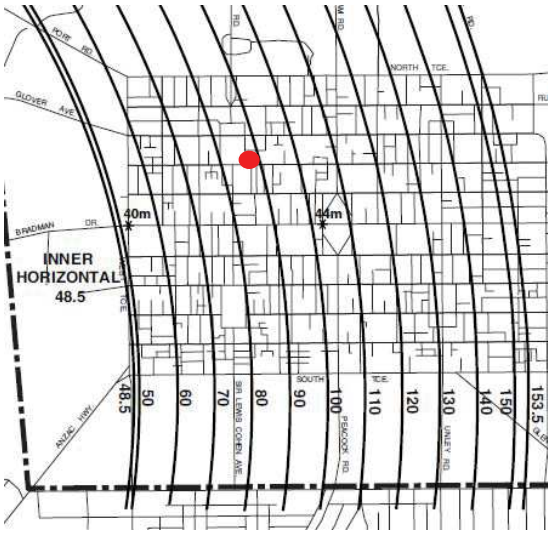
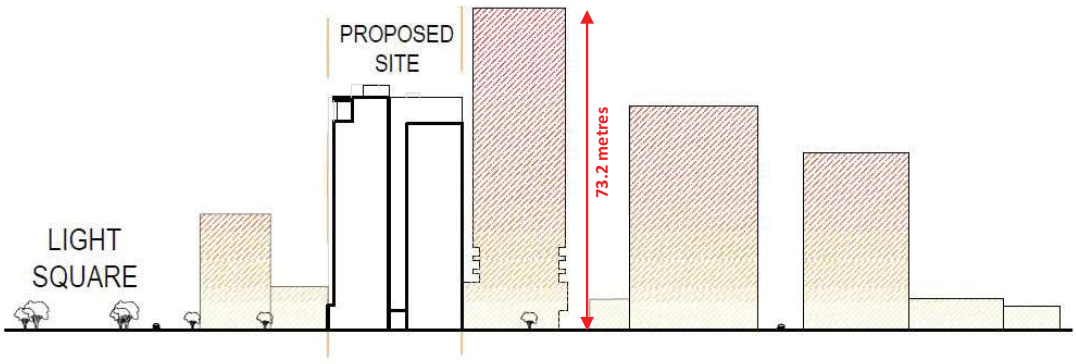


Figure 5: Airport Building Heights map Adel/1 (Overlay 5) Extract

However the building will be lower (by approximately 20 metres) than the existing, approved and under construction building located abutting the eastern boundary of the site which has an approved height of 73.2 metres as shown on the cross section of building heights below.



WAYMOUTH ST ELEVATION

The intent of development within the Capital City Zone is to 'optimise' floor space yields through the provision of tall buildings to ensure an appropriate density is achieved. The proposal is considered to support the intent of providing appropriate residential density within this strategically important CBD location with the provision of an appropriate development height.

Notably, ODASA has considered the height of the building in the context of its surrounds and has provided its endorsement of the height in the context of the locality, but also recognising the potential for

the building to exceed the prescribed maximum building height due to the context of the adjacent 27 storey building currently under construction in a part of the Capital City Zone where no prescribed building height applies.

5.4.3 Building Composition

The following Capital City Zone Principles provide guidance with respect to the composition of buildings:

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

PDC 7 **Buildings should present an attractive pedestrian-oriented frontage that adds interest and vitality to City streets and laneways.**

PDC 8 **The finished ground floor level of buildings should be at grade and/or level with the footpath to provide direct pedestrian access and street level activation.**

PDC 9 **Providing footpath widths and street tree growth permit, development should contribute to the comfort of pedestrians through the incorporation of verandahs, balconies, awnings and/or canopies that provide pedestrian shelter.**

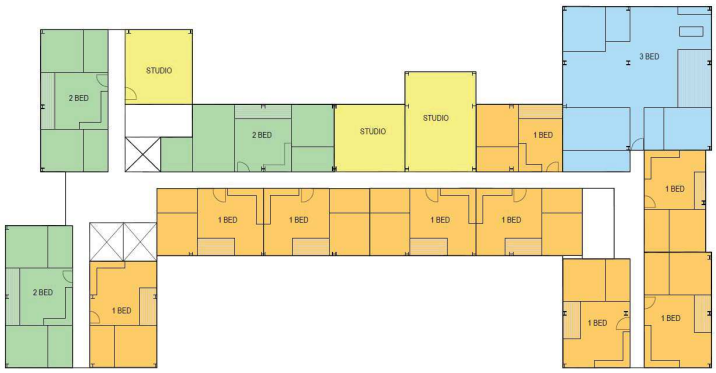
PDC 10 **Buildings should be positioned regularly on the site and built to the street frontage, except where a setback is required to accommodate outdoor dining or provide a contextual response to a heritage place.**

The architectural form of the proposed development has been designed to prevent the massing of blank façades and provide an identifiable ground and upper level to the building. The ground level active frontage to Waymouth Street establishes an open and permeable base, while the student accommodation levels above present a clearly defined top section of the building.

The composition and nature of the land use activities at ground level, together with the upper levels of the building, combine with the architecture to respond to and enhance the desired character of the locality.

5.4.4 Building Adaptability

The following image represents a typical structural floor plate configured within the load bearing structures to accommodate 3 x 2-bedroom dwellings, 3 studio dwellings, 9 x 1-bedroom and 1 x 3-bedroom dwelling. It is important to note that the internal walls are light weight structures and readily provide for an adaptable floor plate configuration that can accommodate a range of alternate land uses including various configurations of residential accommodation. The floor plate configuration allows for a functional arrangement of dwellings, further enhanced by the front-of-house format at ground level. The ability to convert the entire building into a residential flat building is achievable, functional and practically manageable.



TYPICAL ADAPTIVE RE-USE FLOOR PLAN
APARTMENT LAYOUT

5.5 Student Accommodation Configuration

Council-wide Objective 9 and Council-wide Principles 10, 11, 12 and 13 provide guidance with respect to the configuration of student accommodation. Together, these provisions seek to achieve:

Objective 9: **High-quality student accommodation that creates an affordable, safe, healthy and comfortable living environment.**

PDC 10 **Residential development specifically designed for the short-term occupation of students may provide reduced internal floor areas, car parking, storage areas and/or areas of private open space provided that:**

- **(a)** **residents have access to common or shared facilities that enable a more efficient use of space (such as cooking, laundry, common rooms or communal open space);**
- **(b)** **every living room has a window that provides an external outlook and maximises access to natural light;**
- **(c)** **the development is designed to enable easy adaptation or reconfiguration to accommodate an alternative use;**
- **(d)** **the development is designed to maximise opportunities to access natural ventilation and natural light;**
- **(e)** **private open space is provided in the form of balconies and/or substituted with communal open space (including rooftop gardens, common rooms or the like) that is accessible to all occupants of the building; and**
- **(f)** **the internal layout and facilities provide sufficient space and amenity for the requirements of student life and promote social interaction.**

PDC 11 **Internal common areas should be capable of being used in a variety of ways to meet the study, social and cultural needs of students.**

PDC 12 **Development should provide secure long-term storage space in both communal and private areas.**

PDC 13 **Student accommodation with shared living areas should ensure bedrooms are of a suitable size to accommodate a single bed, book shelves, a desk and workspace, and a cupboard/wardrobe.**

The fundamental land use for the building is for the purpose of providing high quality student accommodation and associated facilities and services. The presence of an on-site manager, the effective design implementation of CPTED principles, generous communal amenity areas and a high architectural design standard will deliver a pleasant and safe student residential experience.

The location of the proposed development within close proximity to the University of South Australia's City West Campus and the Adelaide University's Health and Medical Sciences Building on North Terrace is pivotal in providing conveniently located student accommodation services. Pedestrian access to each University campus through Light Square to Hindley Street and North Terrace is direct and convenient.

The site will be close to the students' place of education, whilst also providing convenient access to services associated with retail, recreation and entertainment afforded by the proximity to Hindley Street and the Central Market. The outdoor recreation opportunities of Light Square less than 100 metres to the west will also add to the amenity experience for student residents.

The nature of the accommodation will ensure that:

- the rooms provide for and accommodate the fundamental needs of its student occupants including a single/double bed, book shelves, a desk and workspace, and a cupboard/wardrobe;
- there is an appropriate outlook from each of the rooms; and
- natural ventilation is provided through a combination of operable windows and mechanical means.

Furthermore, the development provides for four different typologies of accommodation rooms as detailed in Section 4.2 of this report.

The diversity in accommodation types will ensure that there are a range of options for occupants in both style and price point, including:

- single occupancy studios;
- single occupancy DDA compliant studios;
- single occupancy en-suite rooms with access to communal kitchen, dining and a lounge facility on the respective floor; and
- eight bed share shared bathroom cluster accommodation with access to communal kitchen, dining and lounge facility on the respective floor.

The variety in accommodation typology is expected to deliver a healthy social mix with the general promotion of shared living environments while also providing independent living opportunities. The model of single en-suite and eight-bedroom clusters sharing kitchen facilities will facilitate social cross pollination, adding to the sense of community within the building.

As an integrated student accommodation facility, the proposed development includes a range of indoor and outdoor communal spaces to meet the social, educational and cultural needs of the student population. These spaces are exclusive to the occupants of the building and enhance the comfortable living environment.

Diverse Building Amenity

Strategically spread throughout the building are a range of student services, facilities and common areas that will provide occupants with a variety of spaces and experiences to encourage collaboration and learning. These are summarised as follows;

- Ground Floor:
  - study hub with direct access to a private landscaped courtyard fronting Waymouth Street;
  - private lounge;
  - communal open plan seating / dining and games room opening onto a large internal courtyard;
  - communal kitchen;
  - cinema room(s); and
  - music/ dance / multi-purpose room.
- Level 1:
  - fitness and wellbeing room overlooking Waymouth Street;
  - private study rooms with terrace overlooking Waymouth Street; and
  - laundry.
- Level 12:
  - breakout room off the central corridor with a west facing double height terrace;
- Level 13:
  - breakout room off the central corridor with facing west across a double height terrace;
- Level 15:
  - double height sky lounge over Level 15 and 16 with associated study space; and
  - roof top communal garden.
- Level 16:
  - mezzanine to double height sky lounge overlooking the Level 15 sky lounge below.

5.6 Signage

Capital City Zone Principles of Development Control 33, 34 and 35 provide guidance on appropriate signage displays, as follows:

PDC 33 Other than signs along Hindley Street, advertisements should use simple graphics and be restrained in their size, design and colour.

PDC 34 In minor streets and laneways, a greater diversity of type, shape, numbers and design of advertisements are appropriate provided they are of a small-scale and located to present a consistent message band to pedestrians.

PDC 35 There should be an overall consistency achieved by advertisements along individual street frontages.

Four signage locations have been identified to provide an integrated approach to the design including on the streetscape façade at ground level beneath the canopy and on the top left corner of the southern elevation, the top right corner of the western elevation and the top left corner of the northern elevation. The signage provides building identification typical of a building of this nature and scale. Each sign will be consistent and simple in design and style. The signs are considered to be of appropriate size, scale and number for a building of this size, providing effective proportions, a simple presentation and easy identification from numerous ground level view points.

5.7 Access, Parking and Traffic

5.7.1 Pedestrian Access

Capital City Zone Principles of Development Control 27 and 28 together with Council-Wide PDC 239 provide guidance with respect to pedestrian access and movements. They recommend that:

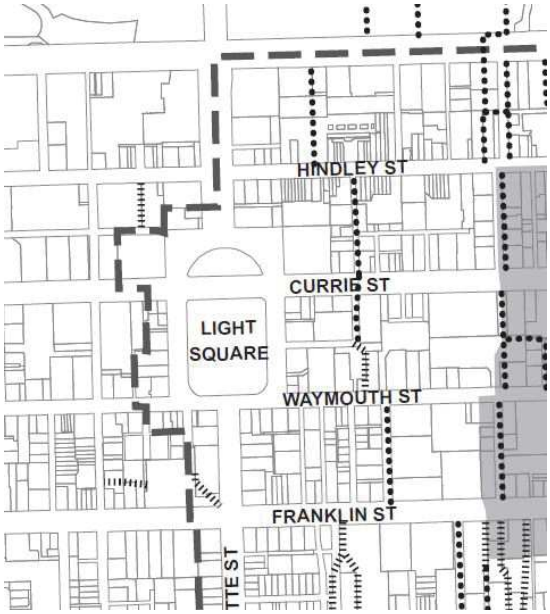
PDC 27 Development should provide pedestrian linkages for safe and convenient movement with arcades and lanes clearly designated and well-lit to encourage pedestrian access to public transport and areas of activity. Blank surfaces, shutters and solid infills lining such routes should be avoided.

PDC 28 Development should ensure existing through-site and on-street pedestrian links are maintained and new pedestrian links are developed in accordance with Map Adel/1 (Overlay 2A).

PDC 239 Development along high concentration public transport routes identified in Map Adel/1 (Overlay 4) should:

- **(a) ensure there are pedestrian links through the site if needed to provide access to public transport;**
- **(b) provide shelter (e.g. verandahs) for pedestrians against wind, sun and rain;**
- **(c) provide interest and activity at street level; and**
- **(d) where possible, avoid vehicle access across high concentration public transport routes identified in Map Adel/1 (Overlay 4). Where unavoidable, vehicle access should be integrated into the design of the development whilst retaining active street frontages.**

Map-Adel/1 (Overlay 4) does not identify any pedestrian links either adjacent to or through the development site however the site is in close proximity to take advantage of the north-south pedestrian link along Gilles Arcade, as illustrated on the following extract:



5.7.2 Vehicular Access

Council-wide Objective 70 and Council-wide PDCs 240 and 241 provide guidance with respect to access, as well as the loading and unloading of goods. Together, they recommend that:

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

PDC 240 **Development should be designed so that vehicle access points for parking, servicing or deliveries, and pedestrian access to a site, are located to minimise traffic hazards and vehicle queuing on public roads. Access should be safe, convenient and suitable for the development on the site, and should be obtained from minor streets and lanes unless otherwise stated in the provisions for the relevant Zone or Policy Area and provided residential amenity is not unreasonably affected.**

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

While it is acknowledged that trucks will be required to reverse into the site from Playhouse Lane, contrary to the intent of PDC 241, given the low speed and low traffic volume environment along this road this is not considered to represent an unsafe manoeuvre. The delivery and waste management truck movements associated with the use have been considered in the GTA Consultants Traffic Impact Assessment who consider that such movements can be undertaken in a safe and convenient manner given the unique site circumstances and Playhouse Lane's characteristics.

5.7.3 Car Parking

PDC 26 of the Capital City Zone provides guidance with respect to the provision of on-site car parking. It recommends that:

> **PDC 26 Car parking should be provided in accordance with Table Adel/7.**

According to Table Adel/7 of the Adelaide (City) Development Plan, there is no minimum statutory car parking requirement for student accommodation in the Capital City Zone. Given the excellent pedestrian access to the adjacent North Terrace educational institutions and the public transport options within close proximity on Grenfell Street, no on-site car parking has been provided.

5.7.4 Bicycle Parking and Facilities

Council-wide Principles of Development Control 234, 235 and 236 are most relevant for the assessment of on-site bicycle parking

> **PDC 234 An adequate supply of on-site secure bicycle parking should be provided to meet the demand generated by the development within the site area of the development. Bicycle parking should be provided in accordance with the requirements set out in Table Adel/6.**
>
> **PDC 235 Onsite secure bicycle parking facilities for residents and employees (long stay) should be:**
>
> **(a) located in a prominent place;**
> **(b) located at ground floor level;**
> **(c) located undercover;**
> **(d) located where passive surveillance is possible, or covered by CCTV;**
> **(e) well lit and well signed;**
> **(f) close to well used entrances;**
> **(g) accessible by cycling along a safe, well lit route;**
> **(h) take the form of a secure cage with locking rails inside or individual bicycle lockers; and**
> **(i) in the case of a cage have an access key/pass common to the building access key/pass.**

Table Adel/6 does not include a bike parking rate for student accommodation. GTA have considered an appropriate bike parking rate for this form of development in referencing recently approved and operating student accommodation buildings across Australia. The GTA Consultant report suggests a rate of 1 space per 38.6 beds as being appropriate.

The proposal incorporates a rate of one space per 10 beds with the provision of 80 secure spaces within the bike storage area at ground level. Given the history of recently constructed student accommodation throughout Adelaide's CBD, the provision of 80 bike parking spaces at an effective rate of 1 space/10 students is considered to well exceed the requirements. Further, the design and location of the internal bicycle parking facility satisfies all of the clauses (a) to (i) recommended in PDC 235.

5.8 Services

Council-wide Objective 41 and Council-wide PDCs 132, 133 and 135 provide guidance with respect to the provision of services. Together, they encourage:

Objective 41: **Provision of services and infrastructure that are appropriate for the intended development and the desired character of the Zone or Policy Area.**

PDC 132 **Provision should be made for utility services to the site of a development, including provision for the supply of water, gas and electricity and for the satisfactory disposal and potential re-use of sewage and waste water, drainage and storm water from the site of the development.**

PDC 133 **Service structures, plant and equipment within a site should be designed to be an integral part of the development and should be suitably screened from public spaces or streets.**

PDC 135 **Development should only occur where it has access to adequate utilities and services, including:**

(a) **electricity supply;**
(b) **water supply;**
(c) **drainage and stormwater systems;**
(d) **effluent disposal systems;**
(e) **formed all-weather public roads;**
(f) **telecommunications services; and**
(g) **gas services.**

The location and spatial allocation of floor area for Infrastructure has been considered by the architects and the application documentation accommodates all of the mechanical, electrical, vertical transportation, hydraulic and fire protection services that will be provided as part of the proposed development. It is also particularly relevant to note that:

- the building will have adequate access to the existing electricity, water, sewerage, gas and communications infrastructure along Waymouth Street and Playhouse Lane;
- the waste, transformer, plant, gas and power on the ground floor level of the building will fully integrated into the building with little impact on the active street frontage along Waymouth Street; and
- the fire water storage tank, dual diesel fire pump set and DCW break tank are to be located at the ground level within the building footprint.

5.9 Environmental Considerations

5.9.1 Crime Prevention Through Urban Design

Inherent in good design is the need to ensure that development provides for a safe, secure and crime resistant environment as envisaged in the relevant Council-wide CPTED objectives and principles.

This is further reinforced through the nature of the proposed accommodation for students where the feeling of a safe and secure environment is likely to add to their experience of the accommodation facility during their time in Adelaide.

Objective 24: **A safe and secure, crime resistant environment that:**

- **(a)** **ensures that land uses are integrated and designed to facilitate natural surveillance;**
- **(b)** **promotes building and site security; and**
- **(c)** **promotes visibility through the incorporation of clear lines of sight and appropriate lighting.**

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

- **(a)** **promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:**
  - **(i)** **orientating windows, doors and building entrances towards the street, open spaces, car parks, pedestrian routes and public transport stops;**
  - **(ii)** **avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;**
  - **(iii)** **arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;**
  - **(iv)** **positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;**
  - **(v)** **creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;**
  - **(vi)** **locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;**
  - **(vii)** **ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and**
  - **(viii)** **ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.**
- **(b)** **provide access control by facilitating communication, escape and path finding within development through legible design by:**
  - **(i)** **incorporating clear directional devices;**
  - **(ii)** **avoiding opportunities for concealment near well travelled routes;**
  - **(iii)** **closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;**
  - **(iv)** **use of devices such as stainless steel mirrors where a passage has a bend;**

(v) **locating main entrances and exits at the front of a site and in view of a street;**

(vi) **providing open space and pedestrian routes which are clearly defined and have clear and direct sightlines for the users; and**

(vii) **locating elevators and stairwells where they can be viewed by a maximum number of people, near the edge of buildings where there is a glass wall at the entrance.**

(c) **promote territoriality or sense of ownership through physical features that express ownership and control over the environment and provide a clear delineation of public and private space by:**

(i) **clear delineation of boundaries marking public, private and semi-private space, such as by paving, lighting, walls and planting;**

(ii) **dividing large development sites into territorial zones to create a sense of ownership of common space by smaller groups of dwellings; and**

(iii) **locating main entrances and exits at the front of a site and in view of a street.**

(iv) **provide awareness through design of what is around and what is ahead so that legitimate users and observers can make an accurate assessment of the safety of a locality and site and plan their behaviour accordingly by:**

(v) **avoiding blind sharp corners, pillars, tall solid fences and a sudden change in grade of pathways, stairs or corridors so that movement can be predicted;**

(vi) **using devices such as convex security mirrors or reflective surfaces where lines of sight are impeded;**

(vii) **ensuring barriers along pathways such as landscaping, fencing and walls are permeable;**

(viii) **planting shrubs that have a mature height less than one metre and trees with a canopy that begins at two metres;**

(ix) **adequate and consistent lighting of open spaces, building entrances, parking and pedestrian areas to avoid the creation of shadowed areas; and**

(x) **use of robust and durable design features to discourage vandalism.**

The internal and external design of the proposed development considers the fundamental principles of CPTED and therefore satisfies the afore-quoted Development Plan provisions through the following design and operational measures:

- the ground floor frontage to Waymouth Street has an extensive glazed shopfront to the foyer reception and student hub, with extensive glazing to avoid potential areas of entrapment;
- the student accommodation reception desk is clearly visible with clear lines of sight to the primary entrance;
- CCTV coverage will be provided to the public areas and communal spaces within the building; and
- the internal circulation corridors on each student accommodation level provide clear lines of sight and are of an appropriate width. They will also be illuminated with movement activated lighting systems.

Further to the above design and operation techniques is the fundamental passive benefit derived from the accommodation of up to 787 residents, and their associated comings and goings and presence within the adjacent street network.

5.9.2 Waste Management

Council-wide PDCs 101 and 103 provide guidance with respect to the management of waste. Together, they recommend that:

> **PDC 101 A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.**
>
> **PDC 103 Development greater than 2000 square metres of total floor area should manage waste by:**
>
> **(a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;**
> **(b) on-site storage and management of waste;**
> **(c) disposal of non-recyclable waste; and**
> **(d) incorporating waste water and stormwater re-use including the treatment and re- use of grey water.**

Full details of the waste management solutions to be implemented throughout the proposed development are contained within the Waste Management Plan accompanying the application documentation.

It is relevant to note that the waste associated with the proposed development is to be managed as follows:

- at ground level through the provision of mobile waste bins and external waste bin storage at the rear of the site;
- waste is to be delivered to the ground level through a dual chute system, with general and recyclable waste being separated at the point of disposal on each floor level. Green and e-waste is to be manually disposed of at ground level; and
- a private contractor will be employed to undertake waste removal three times a week.

5.9.2 Contaminated Land

Council-wide Objective 29 and PDC 105 provide guidance with respect to the determining the suitability of the land where there is reasonable potential for contamination to exist.

> **Objective 29: A safe and healthy living and working environment.**
>
> **PDC 105 Where there is evidence of, or reasonable suspicion that land, buildings and/or water, including underground water, may have been contaminated, or there is evidence of past potentially contaminating activity/ies, development should only occur where it is demonstrated that the land, buildings and/or water can be made suitable for its intended use prior to commencement of that use.**

Note: Information of the suitability of land for the proposed land use should be provided as part of the development application and should include:

(a) the provision of a report of the land use history and condition of the site;

(b) where the report reveals that contamination is suspected or identified, a detailed site assessment report that determines whether site contamination poses an actual or potential risk to human health and the environment, either on or off the site, of sufficient magnitude to warrant remediation appropriate to the proposed land use;

(c) where remediation is warranted, a remediation and/or management strategy prepared in consultation with an independent Environmental Auditor, Contaminated Land, endorsed by the EPA;

(d) a site audit report, prepared by an independent Environmental Auditor, Contaminated Land, endorsed by the EPA, that states that in the opinion of the Auditor, the site is suitable for the intended uses(s), or for certain stated uses(s) and also states any conditions pertaining to the use(s).

Agon Environmental have undertaken a preliminary site investigation to:

- identify potentially contaminating activities which may have occurred at the site; and
- provide a preliminary assessment of potential risks to human health and the environment associated with any contamination which may have been caused by the identified PCA's at the site.

From their investigations, Agon Environmental conclude that:

> *"The risk to site occupants from any site contamination resulting from these potentially contaminating activities is considered to be low under the current commercial land uses conducted at the site (offices).*
>
> *However, if the site is redeveloped, it is recommended that further environmental investigations, including soil sampling beneath the building slab and carpark, be conducted to determine if the PCAs have caused site contamination at the property."*

Having regard to the nature of the proposed development and the likely capping of the site, there is reasonable prospect to conclude that the land is, or can be made suitable for the proposed development following remediation if necessary.

5.9.4 Stormwater Management

Council-wide PDCs 128, 129, 130 and 131 provide guidance with respect to the management of stormwater. Together, they recommend that:

PDC 128 Development should incorporate appropriate measures to minimise any concentrated stormwater discharge from the site.

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

PDC 130 Development should not cause deleterious effect on the quality or hydrology of groundwater.

PDC 131 Development should manage stormwater to ensure that the design capacity of existing or planned downstream systems are not exceeded, and other property or environments are not adversely affected as a result of any concentrated stormwater discharge from the site.

Since the development site is substantially covered by either the existing building or a sealed car park, stormwater received from the proposed development:

- will not increase the amount of runoff generated by the development which it is set to replace;
- the existing stormwater infrastructure surrounding the subject land is unlikely to experience increased post-development flows;
- on-site detention to reduce peak flows before entering the existing stormwater infrastructure surrounding the subject land is not required; and
- it will not be necessary to treat any of the runoff generated by the proposed development.

With this in mind, the proposed development is considered to satisfy Council-wide PDCs 128, 129, 130 and 131.

5.9.5 Wind Effects

Council-wide PDCs 119 and 125 seek to minimise the micro-climatic impact of buildings on their immediate surrounds. Together, they recommend that:

PDC 119 Development should be designed and sited to minimise micro-climatic and solar access impact on adjacent land or buildings, including effects of patterns of wind, temperature, daylight, sunlight, glare and shadow.

PDC 125 Development that is over 21 metres in building height and is to be built at or on the street frontage should minimise wind tunnel effect.

Whilst the full effects of the proposed building have not been modelled in a Wind Assessment report, it is important for the Commission to note that:

- given the height of the building, there will be some effect on the local wind environment;
- the impacts on pedestrian comfort and safety are not expected to be significant, now that a canopy is proposed over the Waymouth Street footpath at ground level to mitigate any down draft off the southern façade; and
- the split setback of the southern façade will disrupt the general pattern of the predominate wind from the south west.

Having regard to these observations, the proposed development is considered to satisfy Council-wide PDC's 119 and 125.

5.10 Building Services

The design of the proposed development has been informed by detailed services engineering input regarding the positioning and spatial arrangements for building services.

Objective 40: **Minimisation of the visual impact of infrastructure facilities.**

Objective 41: **Provision of services and infrastructure that are appropriate for the intended development and the desired character of the Zone or Policy Area.**

PDC 132 **Provision should be made for utility services to the site of a development, including provision for the supply of water, gas and electricity and for the satisfactory disposal and potential re-use of sewage and waste water, drainage and storm water from the site of the development.**

PDC 133 **Service structures, plant and equipment within a site should be designed to be an integral part of the development and should be suitably screened from public spaces or streets.**

The services infrastructure is located away from the primary street frontage and designed as an integral part of the building. Plant and equipment is located to the rear of the site at ground level and contained within Level 17 (in place of the rooftop location). The design and location of the building's infrastructure is considered to be an effective design outcome separating these elements from public view while being functionally practical, consistent with the intent of Council-wide Objective 40, 41 and PDC 132 and 133.

5.11 Environmentally Sustainable Design

Council-wide Objective 30 and Council-wide PDC 108 combine to call for environmentally sustainable development. Together, they recommend that:

Objective 30: **Development which is compatible with the long term sustainability of the environment, minimises consumption of non-renewable resources and utilises alternative energy generation systems.**

PDC 108 **Energy reductions should, where possible, be achieved by the following:**

- **(a)** **appropriate orientation of the building by:**
  - **(i)** **maximising north/south facing facades;**
  - **(ii)** **designing and locating the building so the north facade receives good direct solar radiation;**
  - **(iii)** **minimising east/west facades to protect the building from summer sun and winter winds;**
  - **(iv)** **narrow floor plates to maximise the amount of floor area receiving good daylight; and/or**
  - **(v)** **minimising the ratio of wall surface to floor area.**
- **(b)** **window orientation and shading;**
- **(c)** **adequate thermal mass including night time purging to cool thermal mass;**
- **(d)** **appropriate insulation by:**
  - **(i)** **insulating windows, walls, floors and roofs; and**
  - **(ii)** **sealing of external openings to minimise infiltration.**
- **(e)** **maximising natural ventilation including the provision of openable windows;**

(f) **appropriate selection of materials, colours and finishes; and**

(g) **introduction of efficient energy use technologies such as geo-exchange and embedded, distributed energy generation systems such as cogeneration*, wind power, fuel cells and solar photovoltaic panels that supplement the energy needs of the building and in some cases, export surplus energy to the electricity grid.**

Lucid Consulting Australia have been engaged to provide a sustainability report outlining the ESD strategies incorporated within the building design, which summarises the sustainability initiatives as incorporating:

- high performance building envelope, wall, floor and roof insulation R-values to meet/exceed best practice guidelines;
- high performance glazing with solar control to mitigate solar heat gains in summer;
- architectural facades which feature external shading fins to west facing windows;
- energy efficient massing with minimal exposed ceilings and floors;
- LED lighting throughout;
- motion sensors for efficient lighting control within common areas;
- water efficient fixtures and fittings;
- adequate and secure bicycle storage;
- a rooftop communal 'urban farming' garden for residents' use;
- low volatile organic compound (VOC) paints; and
- amenities provided to deliver a high quality living environment (gym and yoga studios).

Accordingly, the Council-wide Objectives and Principles of Development Control listed above relating to infrastructure are considered to be satisfied.

6.0 CONCLUSION

We conclude that the proposed development of an integrated student accommodation facility, together with retail tenancy and pedestrian thoroughfare at ground level, complies with the relevant Capital City Zone and Council-wide provisions of the Adelaide (City) Council Development Plan.

In particular, the proposed development:

- delivers a land use that is expressly envisaged within the Zone;
- will support existing tertiary education institutions in close proximity to the site;
- establishes a building that exhibits design excellence and will make a positive contribution to the Waymouth Street streetscape and the sky line of the broader CBD;
- reinforces and enhances the active street frontage to Waymouth Street;
- incorporates facilities and services as part of the integrated student accommodation facility that will enhance the experience building occupants;
- incorporates generously sized communal recreation areas distributed throughout the building, providing a high level of amenity for resident students with the provision of space, access to sun light and breezes;
- is ideally located within close proximity to adjacent Hindley Street, North terrace and Light Square, providing high amenity communal open space and safe and direct access to shopping opportunities for student residents;
- provides for a diversity in accommodation options available to students through the provision of different accommodation rooms that will deliver affordable accommodation;
- incorporates a construction methodology that allows for the adaptive re-use of the building in the event that an alternate land use is warranted; and
- provides for the necessary services and operation functions without detriment to the locality.

Accordingly, the proposal meets the land use, design and functional expectations of the Development Plan.

We conclude that the proposed development is not seriously at variance with the provisions of the Development Plan, and invite the State Commission Assessment Panel to agree that the proposal meets the provisions of the Development Plan in a manner sufficient to enable the application to be approved.

Graham Burns FPIA
B/A in Planning

8 January 2019

ATTACHMENT F

ACOUSTIC SERVICES CONCEPT DESIGN REPORT

BESTEC

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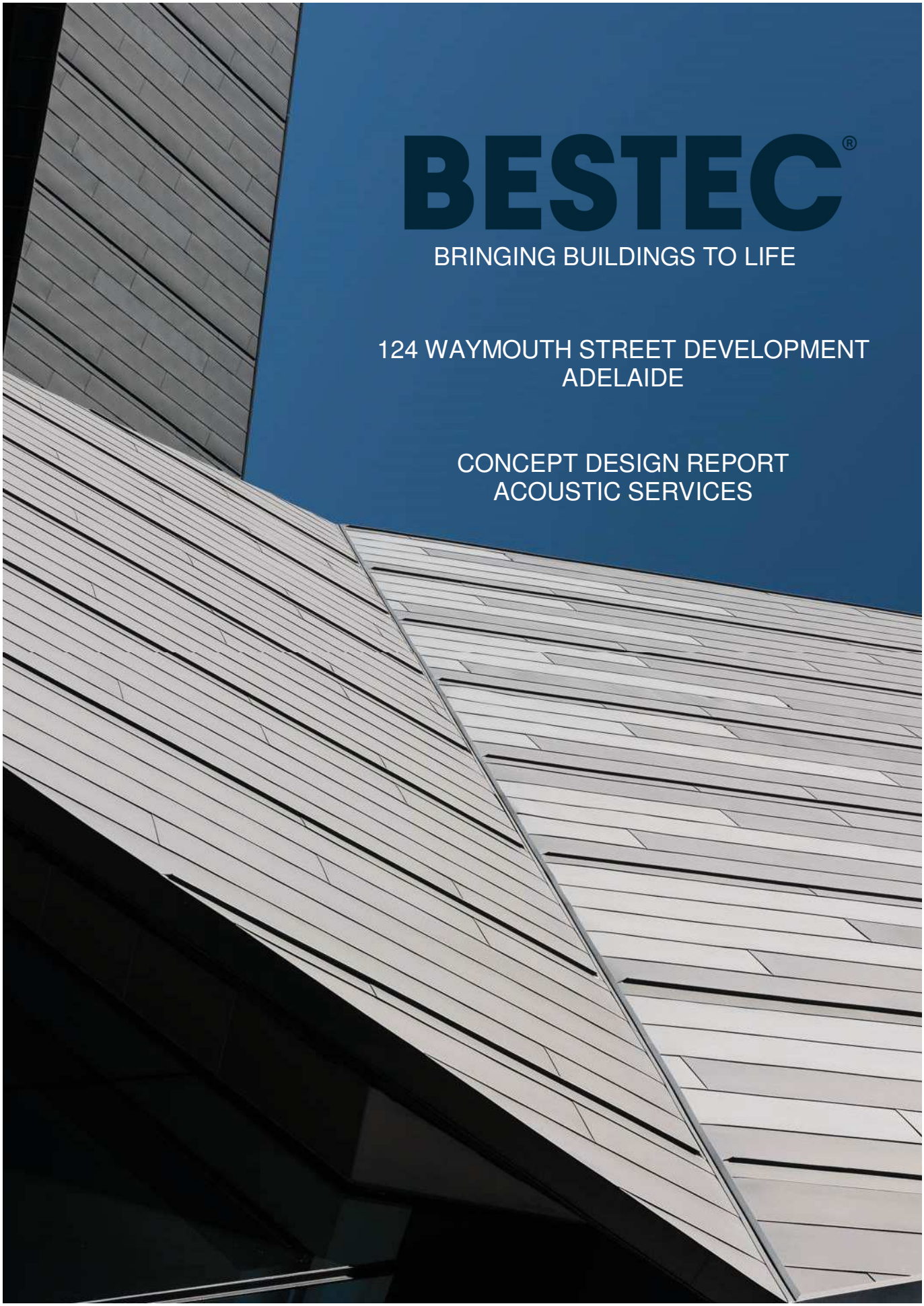
124 WAYMOUTH STREET DEVELOPMENT ADELAIDE

CONCEPT DESIGN REPORT ACOUSTIC SERVICES



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SGA:HAC
56177/6/1
21 December 2018

Brown Falconer
28 Chesser Street
ADELAIDE SA 5000

Attention: Mr R Barbary

Dear Sir

124 WAYMOUTH STREET DEVELOPMENT
ACOUSTIC SERVICES

As requested, we enclose a copy of our acoustic design report for the Acoustic Services for the above project.

We trust that the report provides sufficient information for your immediate purpose and we would be most pleased to further discuss any aspect upon your request.

Yours faithfully
BESTEC PTY LTD

SAKSHAM GARG
ACOUSTIC SERVICES ENGINEER

Encl

REPORT ISSUE REGISTER

Report Issue Register					
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CONTENTS

Introduction

BESTEC Pty Ltd was engaged to provide acoustic engineering services during the concept design, design development and construction of the student accommodation at 124 Waymouth Street, Adelaide 5000. This document presents the proposed acoustic design criteria and acoustic design recommendations for acoustic treatment to achieve the selected design criteria and satisfy the planning conditions imposed on the development by Adelaide City Council.

Executive Summary

In summary:

- An attended acoustic survey was conducted on the site of the proposed development to measure the existing noise conditions.
- Appropriate acoustic design criteria have been nominated in accordance with the Adelaide (City) Development Plan, SA EPA Environment Protection (Noise) Policy 2007 and other relevant Standards and Regulations.
- Acoustic design recommendations to achieve the selected criteria have been provided, including:
  - Appropriate alternative constructions of the building façade and glazing in order to provide sufficient attenuation to noise from traffic and music and venue noise from the Edinburgh Castle Hotel.
  - Appropriate alternative constructions of walls and floors separating the sole occupancy units and the communal accommodation from the adjacent spaces to achieve compliance with the requirements of NCC 2016.
  - Appropriate constructions for the separation of communal and ancillary spaces to Ground floor of the development, to achieve recommended acoustic criteria
- Generic recommendations to control noise from mechanical services plant were provided.

Acoustic Analysis

References

The following documents have been referenced within the preparation of this report:

[1] Adelaide (City) Development Plan, consolidated 07 June 2018.

[2] SA Environment Protection (Noise) Policy 2007.

[3] World Health Organisation (1999) "Guidelines for Community Noise".

[4] Environmental criteria for road traffic noise, NSW Environment Protection Agency, May 1999.

[5] AS/NZS 2107:2016 "*Acoustics - Recommended design sound levels and reverberation times for building interiors"*.

[6] National Construction Code Series 2016, Building Code of Australia, Class 2 to Class 9 Buildings.

[7] AS ISO 16283 – 2014 "*Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation*".

[8] Minister's Specification SA 78B February 2013, "*Construction requirements for the control of external sound"*.

[9] Technical Information Sheet 8, Noise and air emissions – Overlay 3, South Australian Planning Policy Library, April 2013.

[10] Concept architectural drawing layouts as provided by Brown Falconer, in their correspondence on 17 December 2018.

[11] Technical Information Sheet 8, Noise and air emissions – Overlay 3, South Australian Planning Policy Library, April 2013.

[12] The City of Adelaide Smart Move – Transport and Movement Strategy 2012-22, November 2012.

[13] Development proposal assessment for venues where music may be played, EPA Guidelines, September 2003.

Existing Conditions

The site is located in a zone designated Capital City Zone (CC) in the Adelaide (City) Development Plan [1] with the following boundaries:

- North – 8-storey carpark and 8-storey commercial, separated by Playhouse Lane.
- East – Adjacent multi-storey building (currently under construction).
- South – Commercial buildings separated by Waymouth Street.
- West – Existing adjacent commercial developments.

Currently the site is occupied by a 3 -storey commercial building with a public carpark facing Playhouse Lane.

Proposed Development and Conditions

It is proposed a new multi-story student accommodation building, to be developed at 124 Waymouth Street site, with the following components:

- Ground Floor – Study hub, casual seating area, games area, foyer/waiting, private lounge, 2-off cinemas, common kitchen, multipurpose room, comms room, bike racks, loading bay, refuse area, meeting room, Manager's office, admin area and services plant rooms.
- Level 1 – Gymnasium, laundry, private study, kitchen/dining, student accommodation units (combination of studio type and cluster type).
- Levels 2 to 14 – Student accommodation apartments throughout each floor (combination of studio type with cluster type) and kitchen/dining area.

- Level 15-16 – Sky lounge, communal garden, student accommodation apartments throughout each floor (combination of studio type with cluster type) and kitchen/dining area.
- Roof – Engineering plant infrastructure and vertical transport overrun

Attended Noise Survey

For an explanation of acoustic terms, please refer to the Glossary of Acoustic Terminology attached to this document (Appendix D).

An attended noise survey was conducted between 22:00 and 22:30 on 14 December 2018 and between 23:00 and 23:15 on 15 December 2018, in order to determine the existing noise environment (and identify the dominant noise sources, i.e., music and patron noise from Queens Theatre) in the vicinity of the development site.

Attended measurements were undertaken using a Brüel and Kjær Hand-held Analyser Type 2270 Sound Level Meter (Serial Number: 3006966, last calibrated on the 17 September 2018, due for calibration 17 September 2019), with an approved windshield fitted at all times. The calibration of the analyser was spot checked before and after the measurements and no drift was detected.

Figure 1 below shows the attended survey location with respect to the proposed development site and Queens Theatre, with the survey results presented within Table 1 below.

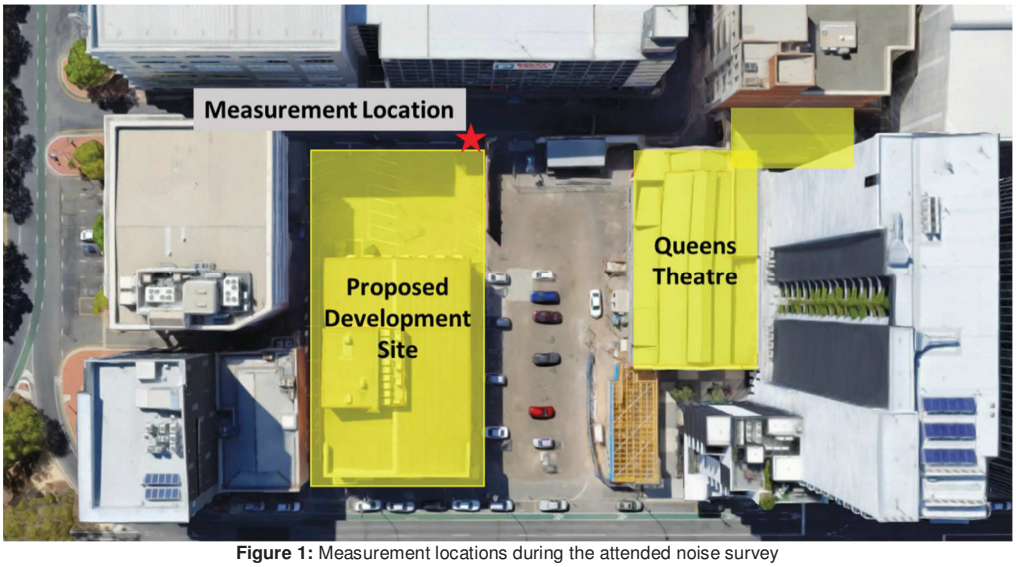


Figure 1: Measurement locations during the attended noise survey

Time	L_{Aeq}, dB(A)	L_{Amax}, dB(A)	L_{A10}, dB(A)	L_{A90}, dB(A)	Notes
14 December 2018, 22:10	61.0	76.4	63.3	57.1	Music and patron noise from Queens Theatre with occasional car pass by.
14 December 2018, 22:25	61.7	75.5	63.2	59.3	
15 December 2018, 23:00	64.2	82.7	66.1	60.3	

Table 1: Result summary of the attended noise survey for music and patron noise from Queens Theatre

The dominant source of noise during the surveys on 14 December 2018 was music played within the Theatre and the occasional traffic noise event from Playhouse Lane (cars accessing the opposite multi-level carpark). However, noise from the patrons at and outside the theatre were the dominant source of noise during the survey on 15 December 2018.

Design Criteria

Environmental Noise

Continuous Noise

This criterion will be relevant to noise emitted from the proposed development resulting from operation of engineering services infrastructure, noise associated with commercial component of the development etc.

The continuous noise emissions will be assessed against the criteria set EPA Environment Protection (Noise) Policy 2007 [2] and the principles of development control in the Adelaide City Council Development Plan [1].

The Adelaide City Council principle of development control 93 sets the criteria for continuous noise in accordance with the Zone where the proposed development is located as follows:

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

(a) 55 dB(A) during daytime (7.00am to 10.00pm) and 45dB(A) during night time (10.00pm to 7.00am) when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.

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

The Environment Protection (Noise) Policy 2007 [2] sets out the maximum allowable continuous noise in terms of A-weighted Equivalent Continuous Noise Level (L_{Aeq}) based on the time of day and zoning / use of land in which the noise source and receiver are located.

With reference to the Adelaide City Council Development Plan [1], we note that the proposed development is located within the Capital City Zone. The Capital City Zone is an essentially Mixed-Use zone comprising a mixture of Commercial and Residential uses. Table 2 shows the indicative noise factors based on time of day and land-use as stipulated in Table 2 of the Environment Protection (Noise) Policy 2007 [2].

Land Use Category	Day Time (7:00 to 22:00)	Night Time (22:00 to 7:00)
Commercial	62	55
Residential	52	45

Table 2: Indicative noise factors based on time of day and land use

Since the Mixed-Use area is intended for commercial and residential purposes, the Environment Protection (Noise) Policy 2007 [2] states that the indicative noise level is the average of the indicative noise factors for the land use categories.

In addition, the Environment Protection (Noise) Policy 2007 states that the predicted continuous noise due to the proposed development (for application for development authorisation) should not exceed the indicative noise level, minus 5dBA. Based on the average of the "Commercial" and "Residential" land use categories, minus 5dBA for planning purposes, the applicable day and night time noise criteria would be as follows:

- Day-time (7:00 a.m. to 10:00 p.m.): 52dBA
- Night-time (10:00 p.m. to 7:00 a.m.): 45dBA

Note that if noise emitted by the proposed development contains any tones, modulation, impulsive or low frequency characteristics, the continuous noise level of the noise source must be adjusted as follows:

- Noise containing 1 characteristic – 5dBA penalty added to source continuous noise level.
- Noise containing 2 characteristics – 8dBA penalty added to source continuous noise level.
- Noise containing 3 or 4 characteristics – 10dBA penalty added to source continuous noise level.

Intermittent Noise

This criterion will be relevant to noise emitted from the proposed development resulting from short term or transient noise events such as refuge vehicles, commercial delivery trucks, loading/unloading activities etc.

The criteria provided in the above sections relate to continuous noise sources, and do not cater for intermittent noise events, such as impacts during loading/unloading, car horns sounding, etc. We recommend the use of the World Health Organisation (WHO) Guidelines [3], which recommends a maximum A-weighted noise level L_{Amax}, of 45dBA in a bedroom, which is equivalent to approximately 55dBA to 60dBA at the façade of the residential building with windows partially open.

It should be noted that the Adelaide City Council principle of development control 94 regulates the intermittent emissions from a proposed development and makes a reference to the WHO Guidelines as follows:

"94 To ensure minimal disturbance to residents:

(a) ancillary activities such as deliveries, collection, movement of private waste bins, goods, empty bottles and the like should not occur:

(i) after 10.00pm; and

(ii) before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.

(b) typical activity within any car park area including vehicles being started, doors closing and vehicles moving away from the premises should not result in sleep disturbance when proposed for use after 10.00pm as defined by the limits recommended by the World Health Organisation."

In addition, the Environment Protection (Noise) Policy 2007 provides assessment criterion of L_{Amax} of 60dBA for night-time for the proposed development (for application for development authorisation) [2], which agrees with the criterion stipulated by the WHO [3].

We note that the WHO internal criteria of L_{Amax} 45dBA as referenced in Adelaide City Council Development Plan Principle 94, is widely accepted as overly conservative. A report published in May 1999 by the NSW EPA entitled "Environmental Criteria for Road Traffic Noise" [4] has compared the results of a number of studies on sleep disturbance criteria and concluded the following:

- Maximum internal noise levels below 50 – 55dBA are unlikely to cause awakening reactions;
- One or two noise events per night with maximum internal noise levels of 65 – 70dBA are not likely to affect health and wellbeing significantly.

We also note that the above approach have been used by the NSW Environment Protection Agency and the Victorian Civil and Administrative Tribunal.

Therefore, we recommend criterion for intermittent noise of *maximum A-weighted noise level L_{Amax}, of 50dBA in a bedroom* within the nearest noise sensitive development.

Building Acoustics

The level of background and transient/intermittent noise, the speech privacy rating and the room acoustics define the quality of the acoustics within a building. The recommended criteria for each space are shown in Table 3 below. Please refer to each individual section below for interpretation of the criteria.

Type of occupancy/activity	Background Noise L_{Aeq}, dBA	Reverberation Time, sec	Weighted Sound Reduction Index with Spectrum Adaptation Term, R_W+C_{tr}	Speech Privacy Rating, D_W
Apartments and Studios			50[1]	
Bedrooms	30 - 40		-	-
Work Areas	35 - 45		-	-
Single rooms (within Cluster)	30 - 40		-	40 - 45
Study Hub and Private Study	40 - 45	0.4 - 0.6	-	40 - 45
Gymnasium (Fitness & Wellbeing)	45 - 55	Minimise as practical	-	40 - 45
Cinema	30 - 35	< 1.0[2]	-	40 - 45[3] 45 - 50[4]
Multipurpose	35 - 40			
Laundry Area	< 55	N/A	-	40 - 45
Kitchen/Dining, Common Kitchen	40 - 45	N/A	-	35 - 40
Sky Lounge	< 50	Minimise as practical	-	N/A
Private Lounge	40 - 45	Minimise as practical	-	40 - 45
Games and Casual seating	40 - 45	< 1.0	-	-
Reception / Foyer	40 - 45			
Corridors	45 - 50	Minimise as practical	-	-
Offices	-	-	-	-
Manager	35 - 40	0.4 - 0.6	-	40 - 45
Meeting	35 - 40	< 0.6	-	40 - 45
Reception	40 - 45	0.6 - 0.8	-	-
Administration Area	40 - 45	0.6 - 0.8	-	35 - 40
Amenities	45 - 55	N/A	-	40 - 45
Services Plant Rooms	N/A	N/A	-	45 - 50[5]

Table 3: Proposed building acoustic design criteria

[1] *Between sole occupancy units.*
[2] *Subject to change, once the complete details of the cinema are available.*
[3] Cinemas to the adjoining areas
[4] Between the cinemas
[5] *Subject to change once the complete services plant details and specifications are available.*

Background Noise

These criteria will be relevant to the assessment of continuous noise from sources such as traffic, engineering services etc.

Residential Component

AS 2107-2016 [5] sets the criteria for background noise in terms of A-weighted equivalent continuous sound pressure level over 15-minute intervals ($L_{Aeq, 15min}$) in accordance with the use of the spaces and the location of the buildings. For apartments and houses located near major roads, the Standard recommends criteria for background noise levels for bedrooms, living areas and work areas with no reference to the time of the day.

In addition, the Minister's Specification SA 78B [8] stipulates that the attenuation provided by the building envelope must be sufficient to provide sufficient attenuation of traffic noise so the internal sound levels do not exceed the internal sound criteria values stated in Table 2 of the Specification [8] as follows:

Type of room	Internal sound criteria		Applicable time period
	Building design target averaged over the total number of such rooms in the building	Maximum allowable for individual rooms in the building	
Bedroom	30dBA $L_{eq, 9hr (transport)}$ 30dBA $L_{eq, 15min (people)}$	35dBA $L_{eq, 9hr (transport)}$ 35dBA $L_{eq, 15min (people)}$	Night (10pm to 7am)
Habitable rooms other than bedroom	35dBA $L_{eq, 15hr}$	40dBA $L_{eq, 15hr}$	Day (7am to 10pm)

Table 4: Minister's Specification SA 78B criteria for noise intrusion (Table 2 of Specification SA 78B reproduced)

The Specification also specifies the traffic noise levels to be used in the assessment (Minister's Specification SA 78B, Table 3: Road source levels) in accordance with the road type, determined in by the relevant Development Plan. The Adelaide (City) Development Plan [1] does not specify any particular classification for Waymouth Street.

The Technical Information Sheet regarding noise and air emissions [11] states that there are several criteria that can be used to determine a road's classification type. For a road traffic density of 50,000 vehicles per day, a road is given Type A and for 25,000 – 50,000 vehicles per day, Type B. The City of Adelaide Smart Move Transport and Movement Strategy 2012-2022 [12] indicate the daily average traffic estimates of up to 9,000 vehicles on Waymouth Street, which does not fall in Type-A or Type-B road classification. Therefore, we consider that there is limited applicability of the Minister's Spec 78B [8] and consider in-situ noise measurements in conjunction with the background noise criteria set by AS/NZS 2107:2016 [5] to be appropriate.

Table 5 details the subjective response of individuals to the proposed sound levels for interpretation of the recommendations.

Average Sound Pressure Levels (dBA)	Subjective Rating
35 - 40	Audible but unobtrusive
40 - 45	Moderate but unobtrusive
45 - 50	Unobtrusive with low levels of surrounding activities
50 - 55	Unobtrusive with high levels of surrounding activities

Table 5: Subjective ratings for various average sound pressure levels

Room Acoustics

AS 2107-2016 [5] sets out the design criteria for reverberation times within occupied spaces. The reverberation time defines the time taken for sound to decay within a space and thus the degree of intelligibility of both unassisted speech and sound reinforcement systems. The criterion for a given space depends on the volume of the space, with Table 6 outlining the subjective impression for spaces with varying volume. Criteria considered appropriate for the various spaces within the development are listed in Table 3.

Reverberation Time (sec)			Subjective Rating
Small (100m^3)	Medium (1,000 m^3)	Large (10,000m^3)	
< 0.3	0.3 - 0.5	0.6 - 0.8	Dead
0.3 - 0.5	0.5 - 0.7	0.8 - 1.0	Medium dead
0.5 - 0.7	0.7 - 1.0	1.0 - 1.5	Average
0.7 - 1.0	1.0 - 1.5	1.5 - 2.5	Medium live
1.0 - 2.0	1.5 - 2.5	2.5 - 4.5	Live

Table 6: Subjective response to various reverberation times and room volumes

Music Noise

These criteria will be relevant to the assessment of music emissions (live or pre-recorded) from entertainment venues.

We note that noise from venue in question, incident on the development, will be from the Queens Theatre. EPA provides guidelines for assessment of music emissions from entertainment venues [13], which is used for acoustic assessment for development approval purposes as well as for acoustic design of residential developments in the vicinity of existing entertainment venues. The criterion is set as follows:

> *"The music noise ($L_{10,15min}$) from an entertainment venue when assessed at the nearest noise sensitive location should be:*
>
> - *less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum, and*
> - *less than 5 dB(A) above the level of background noise ($L_{A90,15min}$) for the overall (sum of all octave bands) A-weighted levels."*

Typical background noise levels (L_{90}) in an apartment bedroom with air-conditioning operating are provided in AS/NZS 2107-2016, Appendix C [5] as detailed in below along with the calculated relevant music noise criteria.

	Octave band sound pressure level dB re 20µPa									Overall level, dBA
	31.5	63	125	250	500	1000	2000	4000	8000	
Background noise level $L_{90, 15min}$ (AS/NZS 2107-2016)	70	52	42	34	28	25	22	20	18	30
Maximum allowable exceedance	8	8	8	8	8	8	8	8	8	5
Maximum allowable music noise level, $L_{10,15min}$	78	60	50	42	36	33	30	28	26	35

Table 7: Typical background noise level $L_{90,15min}$ in apartment with the air-conditioning on (AS/NZS 2107-2016) and the relevant music noise criteria

In addition, Adelaide City Council principle of development control 91 states

"91 Development of licensed premises or licensed entertainment premises or similar in the Capital City, Main Street, Mixed Use and City Frame Zones should include noise attenuation measures to achieve the following when assessed at:-

(a) the nearest existing noise sensitive location in or adjacent to that Zone:

(i) music noise ($L_{10, 15 min}$) less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum; and

(ii) music noise ($L_{A10, 15 min}$) less than 5 dB(A) above the level of background noise ($L_{A90,15 min}$) for the overall (sum of all octave bands) A-weighted levels; or

(b) the nearest envisaged future noise sensitive location in or adjacent to that Zone:

(i) music noise ($L_{10,\ 15\ min}$) less than 8dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum and music noise ($L_{10,\ 15\ min}$) less than 5dB(A) above the level of background noise ($L_{A90,15\ min}$) for the overall (sum of all octave bands) A-weighted levels; or

(ii) music noise ($L_{10,\ 15\ min}$) less than 60dB (Lin) in any octave band of the sound spectrum and the overall ($L_{A10,15\ min}$) noise level is less than 55 dB(A)."

Sound Insulation

Residential Component

For enclosed spaces, the noise from activities in the adjacent rooms transmitted through walls, floors, ceilings etc. increase the background noise level similarly to the noise intrusion from any outside sources. The level of noise transmitted from the adjacent rooms and the level of sound insulation/speech privacy is controlled by the design of building elements and providing adequate level of sound attenuation through specifying appropriate construction types for walls, floors, doors, ceilings etc.

The minimum requirements for sound insulation for the residential component (Buildings Class 3) are set by the National Construction Code Series 2016, Building Code of Australia [6] stipulates the required weighted sound reduction index (R_w), weighted sound reduction index with spectrum adaptation term ($R_w + C_{tr}$) and weighted normalised impact sound pressure level ($L_{n,w}$) for building elements separating sole-occupancy units. We note that the proposed student accommodation would be classified as Class 2 or 3 building, and therefore note the following criteria are applicable to the proposed development:

"A floor in a Class 2 or 3 building must have R_W+C_{tr} (airborne) not less than 50 and an $L_{n,w}$ not more than 62 (impact) if it separates –

(i) Sole occupancy units; or

(ii) A sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of different classification"

"A wall in Class 2 or 3 building must –

(i) Have an $R_W + C_{tr}$ (airborne) not less than 50, if it separates sole-occupancy units; and

(ii) Have an R_W (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification; and

(iii) Is of discontinuous construction if it separates –

(A) A bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than kitchen) in an adjoining unit; or

(B) A sole-occupancy unit from a plant room or lift shaft."

"A door may be incorporated in a wall of Class 2 or 3 building that separates a sole-occupancy unit from a stairway, public corridor, public lobby or the like, provided the door assembly has an R_W not less than 30."

"Where a wall required to have sound insulation rating has a floor above, the wall must continue to-

(i) The underside of the floor above; or

(ii) A ceiling that provides the sound insulation required for the wall."

"If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an $R_W + C_{tr}$ (airborne) not less than –

(i) 40 if the adjacent room is a habitable room (other than a kitchen); or

(ii) 25 if the adjacent room is a kitchen or non-habitable room."

We note that the National Construction Code Series 2016, Building Code of Australia [6] does not provide recommendations for sound insulation between single bedrooms within a communal accommodation facility

with shared amenities. Therefore, the sound insulation/speech privacy criteria nominated in Table 3 are presented in terms of D_W rating (Weighted Sound Level Difference as defined by AS ISO 16283-2015 [7]), which is related to the sound level difference between two spaces.

In order to achieve this level of speech privacy, the *partitions separating the individual rooms within the clusters* will be designed to achieve minimum Weighted Sound Reduction Index R_W 45. The proposed criterion is based on our experience in the acoustic design of similar facilities.

Each cluster of single rooms could be considered as a sole occupancy unit due to the shared kitchen and amenities. Therefore, we consider that the NCC2016 requirements for sound insulation between sole occupancy and public corridor/lobby are applicable to the partitions separating the clusters from adjacent public areas, i.e., $R_W \geq 50$.

Office Component

There is no Australian or International Standard for sound insulation between rooms in commercial buildings. Instead, criteria for sound insulation / speech privacy are based on Client's requirements, budget constraints and experience from previous projects. The criteria for speech privacy between the tenancies proposed in Table 3 are presented in terms of D_W rating (Weighted Sound Level Difference as defined by AS ISO 16283-2014 [7]), which is related to the sound level difference between two spaces. The proposed criteria are based on our experience in the acoustic design of similar facilities. Table 8 details the subjective response of individuals to the proposed privacy ratings for interpretation of the recommendations.

D_W Rating	Subjective Rating
50 - 55	Confidential privacy
45 - 50	Very good privacy. Speech inaudible unless raised
40 - 45	Good privacy. Speech audible but unintelligible
35 - 40	Normal privacy. Neighbouring conversations are audible and may be understood
< 35	Privacy not required

Table 8: Subjective perceptions for various privacy ratings

Assessment and Recommendations

General

Acoustic Sealants

We note that for the acoustic integrity of building elements to be maintained, all gaps and interfaces along the junctions and joints of linings must be sealed with an appropriate acoustic grade sealant. Penetrations for mechanical or electrical services must be properly caulked and sealed around the ductwork and cabling to ensure the intended acoustic rating of the partition is retained.

Appropriate acoustic caulking products include:

- Bostik Firemastic.
- Bostik Seal-n-flex 2637.
- Pyropanel Multiflex.
- Boral Fyreflex.
- Dow-Corning 790 Silicone.
- Dow-Corning 795 Silicone.
- Sika Sikaflex-11 FC.
- Fosroc Flamex 3.

Cavity Infill

Where a cavity infill is recommended, equivalent alternatives are:

- Fibreglass – 50mm, 12kg/m^3.
- Rockwool – 50mm, 38kg/m^3.
- Polyester – 900gsm.

Ceiling Overlay

Where a ceiling overlay is recommended, equivalent alternatives are:

- Glasswool – 100mm, 12kg/m^3.
- Rockwool – 100mm, 38kg/m^3.
- Polyester – 100mm, 32kg/m^3.

Water Resistance and Durability

Where higher durability and/or water resistance is required, the following alternatives are acceptable from an acoustics point of view:

- 6 mm fibre cement in lieu of 13mm plasterboard
- 6 mm compressed fibre cement in lieu of the 13 mm fire-rated plasterboard
- 9mm compressed fibre cement in-lieu of 16 mm fire-rated plasterboard.

Noise Intrusion

Based on the sound levels measured during the attended noise survey we note the following minimum façade and glazing construction:

- Glazing – 10.38mm laminated glass

  Any operable glazing should be fitted with appropriate compressible acoustic seals (Raven or Schlegel ranges).

  The glazing construction is subject to change to meet thermal and structural requirements.

- Solid Façade – A construction of 200mm precast concrete with internal lining of 1 layer of 13mm plasterboard and cavity infill as specified above.

Please note that the constructions provided are preliminary recommendations, therefore, are subject to change once the extent of the glazing is known and the architectural design has sufficiently progressed.

Sound Insulation

Residential Component

To achieve the NCC 2016 requirements, we recommend:

Partitions/Walls

- Walls between sole-occupancy units – 2 layers of 13mm plasterboard to each side of two rows 64mm separate steel studs offset from each other by minimum 20mm air space and extending to the structure above and with cavity infill as specified above.

  Or;

  1 layer of 13 mm fire rated plasterboard over 1 layer of 16mm fire rated plasterboard to one side of 92mm RONDO QuietStud® and 1 layer of 16mm FRPB to the other side extending to the structure above and cavity infill of 75mm, 14kg/m^3 Ultra Acoustic Wall Batts

- Walls between sole-occupancy units and lift shafts – 1 layer of 13mm plasterboard to 64mm steels studs offset from the lift core by minimum 20mm air space and cavity infill of 50mm, 12kg/m^3 glasswool (assuming the core is constructed of 200mm in-situ concrete).

- Walls between sole-occupancy units and stair wells – 28 mm furring channels installed with resilient mounts direct fix to the concrete building core, with 13 mm plasterboard and cavity infill of 25 mm insulation should be used. (This is assuming soft close pistons to stair well doors are installed, to avoid structure-borne noise transfer and assuming the core is constructed of 200mm in-situ concrete)

  If no soft closure mechanisms are installed, we recommend construction as per separation of sole-occupancy units and lift shafts.

- Walls separating sole-occupancy units from corridors and lobbies – 1 layer of 16mm fire rated plasterboard to each side of 64mm staggered steel studs in minimum 92mm track extending to the structure above and cavity infill as specified.

  Or;

  64mm thick Speedpanel (750kg/m^3) with 1 layer of 13mm plasterboard on 35mm tophats to one side and 13mm plasterboard directly fixed to the Speedpanel to the other side with 25mm, 14kg/m3 glasswool in the cavity.

- Walls between the clusters and the adjacent spaces – either:
  - 2 layers of 13mm fire rated plasterboard to each side of minimum 76mm steel studs with cavity infill as specified above extending to the structure above; or
  - 1 layer of 16mm fire rated plasterboard to each side of 64mm staggered steel studs in minimum 92mm track extending to the structure above and cavity infill as specified.

- Partitions between separate bedrooms within the clusters – 1 layer of 13mm fire rated plasterboard to one side of minimum 64mm steel studs and 2 layers of 13mm plasterboard to the other side with cavity infill as specified above and 1 layer of 13mm plasterboard extending to the structure above.
- The walls of garbage chutes could be constructed of 1 layer of 25mm Shaftliner to one side of 104mm C-H studs and 2 layers of 16mm fire rated plasterboard to the other side with cavity infill as specified above. In order to prevent excessive noise in the adjacent apartments from garbage disposal, we recommend the garbage chute be designed as follows:
  - The garbage chute should be internally lined with 25mm, 25kg/m^3 aluminium foil faced glasswool, including the hoppers. Aluminium foil faced Acoustisorb with minimum density of 32kg/m^3 is acceptable.
  - The chute should be resiliently fixed to the concrete walls with rubber mounts (Embelton NR/NRD or equivalent). Care should be taken to ensure no rigid connection between the chute and the building structure for the entire chute run.
  - The hopper doors should be self-closing, fitted with compressible rubber seals around the perimeter.

Floor/Ceiling

- Floor/Ceiling separation of sole-occupancy units – Standard medium pile carpet tiles, on profiled 150mm concrete over steel pan (BONDEK or Kingfloor), with suspended ceiling of 1 layer of 13 mm plasterboard and ceiling overlay as specified above. Where hard floor finishes (tiles or timber) are used above habitable areas (living rooms and bedrooms), resilient underlay (Acoustifloor, Regupol etc.) will be required to comply with the NCC 2016 requirements for impact noise.
- Floor/Ceiling separation between Level 1 gymnasium and ground floor spaces – To avoid transfer of impact noise from the use of weights, weight machines or treadmills to spaces below gymnasium, we recommend a floating floor construction be considered. The construction should consist of minimum 100mm thick reinforced concrete slab, on top of elastomeric material. Required elastomeric material and static deflection will be determined once further details about the gymnasium are provided, as an approximate mass of the system is required for correct natural frequency shifting (layer thickness, system make-up, etc.).

Doors

- Apartments' entry doors – Minimum 45mm thick solid core doors with compressible seals (e.g. Raven or Schlegel ranges).
- Stairwells – We recommend the stairwell doors to be 55 mm solid core. In order to avoid noise from slamming of stairwell doors into the apartment lobbies, we recommend installing a soft closer mechanism (e.g. damping piston) to the stairwell doors.

Offices & Shared Spaces

To achieve the specified speech privacy criterion within the shared spaces and office areas, we recommend the following. Please refer to Appendix A for internal partition mark-ups.

- Normal privacy (D_w 35 - 40), highlighted in yellow colour
  - Partitions – 1 layer of 13mm plasterboard to each side 64 mm steel studs extending to ceiling level and with cavity infill as specified above. This will require ceiling overlay as specified above, extending minimum 1200mm each side of the partition. For partition construction detail, please refer to Detail 1, Appendix B.
  - Internal glazing – 10.38mm laminated glass.
  - Doors – 45mm solid core.
- Good privacy (D_w 40 - 45), highlighted in green colour
  - Partitions – 1 layer of 13mm plasterboard to one side of 64mm steel studs and 2 layers of 13mm plasterboard to the other side with 1 layer of 13mm plasterboard extending to the structure above and with cavity infill as specified above. For partition construction detail, please refer to Detail 2, Appendix B.
  - Internal glazing (Adjacent to trafficable areas) – 12.5mm VLam Hush laminated glass.

- Doors – 55 mm solid core fitted with compressible acoustic seals (Raven RP8, RP10, RP16).

  If sliding doors are used, we recommend acoustic sliders rated at minimum Rw 39.

- Very good privacy (D_w 45 - 50) highlighted in red colour
  - Partitions – 2 layers of 13mm plasterboard to each side of 64 mm steel studs extending to the structure above and with cavity infill as specified above. For partition construction detail, please refer to Detail 3, Appendix B.
  - Internal glazing (Adjacent to trafficable areas) – 12.5mm VLam Hush laminated glass.
  - Doors – Acoustic doors rated at R_w 43. Please note that the acoustic doors come in sets including the door leaf, frame, seals and hardware and are installed by the supplier to guarantee the performance.
- Operable wall separating cinemas (highlighted in blue) – We recommend operable wall with minimum Weighted Sound Reduction Index of R_w 53 (Hufcor or Lotus Series 125) be used to ensure that the speech privacy criterion is achieved. An acoustic baffle consisting of 1 layer of 13mm plasterboard to both sides of 92mm steel studs, with cavity infill as specified above will be required above the operable wall. For construction detail, please refer to Detail 4, Appendix B.

Note: Please note that for shared amenities 40mm solid core would be sufficient from acoustic point of view.

Room Acoustics

In order to control reverberation and achieve the selected room acoustics criteria in the large public spaces, office spaces and shared spaces, we recommend acoustic ceiling tiles or other absorptive ceilings be used, however, detailed recommendations will be provided once the arrangements between base building and fit-out components are advised.

Hydraulics

The following stipulates recommend design in order to reach NCC compliance with hydraulic systems. Where a wall separates a room of a sole-occupancy unit from a duct, soil, waste or water pipe serving or passing through more than one sole-occupancy unit, we recommend the following constructions:

- Where the adjacent room is a habitable room (i.e. bedroom, open plan living room, etc.), the pipes should be lagged with Soundlag 4525C or equivalent and enclosed with 1 layer of 13mm fire-rated plasterboard with cavity infill as specified in the General Recommendations (See Appendix C, Figure C-1 attached).
- Where a waste water pipe is running within the ceiling space of a habitable room or the waste water pipe is running within the ceiling space next to a habitable room, the pipes should be lagged with Soundlag 4525C or equivalent with ceiling overlay of 100mm, 32kg/m^3 polyester extending minimum 1,200mm each side of the pipe. Please note that down lights should be avoided in these areas (See Appendix C, Figure C-2).

We note that the specified constructions above will achieve a rating of $R_w + C_{tr}$ 40, and will meet the NCC requirements for a services riser adjoining a habitable space.

- Where the room is a non-habitable room (See Appendix C, Figure C-3)
  - The pipes should be lagged with Soundlag 4525C or equivalent, and the wall construction would be as per architectural requirements, or
  - The pipes left unlagged and enclosed with 1 layer of 13mm fire-rated plasterboard with cavity infill as specified.

We note that both the constructions specified will achieve a rating of $R_w + C_{tr}$ 25, and will meet the NCC requirements for services riser adjoining a kitchen or non-habitable room.

A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump, as to avoid vibration from pump operation be transmitted into the building structure, which could lead to structure borne noise.

Environmental Noise

Continuous Noise

Noise Associated with Mechanical Plant

Details of the engineering plant that will be serving the development are not available at this stage. However, we note that the airborne noise associated with the engineering services will be controlled by design of appropriate attenuators, duct lagging and acoustic enclosures. This will include noise intrusion from the plant, as well as the environmental noise to the surrounding noise sensitive receivers.

The vibration and structure borne noise will be controlled by design of appropriate vibration isolators (double deflection mounts, spring isolators etc.).

Noise Associated with Rubbish Collection

We understand that the rubbish will be stored in the waste rooms on the Ground floor with the rubbish collection vehicles to access the waste zone via Playhouse Lane, collect the rubbish from the waste collection zone and then leave via thoroughfare along Playhouse Lane. We assessed the noise impact on the adjacent residential building (currently under construction) resulting from noise emissions from typical rubbish collection vehicle including the following activities:

- Rubbish collection vehicle accessing the waste loading zone (including reverse alarm).
- Rubbish collection.
- Rubbish collection vehicle departing.

We calculated the A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval ($L_{Aeq,15min}$) assuming the following activity durations and measured noise levels from similar activities on a previous project:

- Rubbish collection vehicle accessing the waste loading zone (including reverse alarm) – 30 seconds, 70dBA at 5m.
- Rubbish collection – 10 minutes, 65dBA at 5m.
- Rubbish collection vehicle departing – 30 seconds, 73dBA at 5m.
- The balance of a 15-minute interval – 5 minutes, 60dBA (ambient noise level).

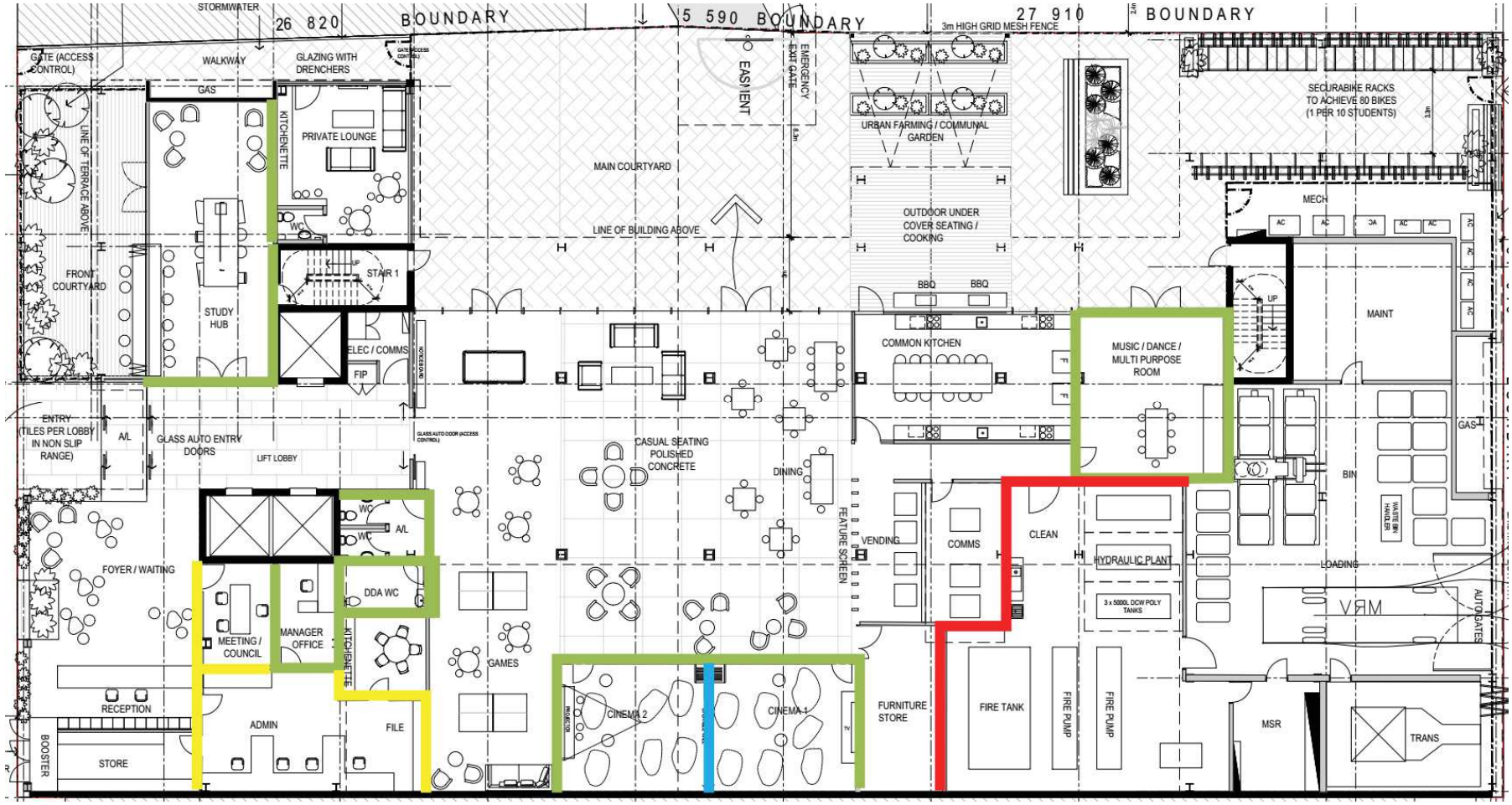
The calculated A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval ($L_{Aeq,15min}$) resulting from loading / unloading activities, which we used in the assessment was 66dBA at 5m.

Taking into account the distance between the nearest residential building and the garbage collection zone (approximately 12m from the waste collection zone), we calculated the A-weighted Equivalent Continuous Noise Level over a typical 15-minute interval ($L_{Aeq,15min}$) of 57 dB(A) at the façade of the nearest residential development and note that the noise emissions to the student accommodation exceed the environmental noise criteria. However, based on the attended noise survey results (refer Table 1), we note that the average noise levels measured consistently exceeded the predicted noise levels of 57 dB(A).

Therefore, we note that the noise emissions resulting due to rubbish collection activities are within the existing noise levels and in order to ensure the amenity of the residents is preserved, we recommend the rubbish collection be restricted to the EPA stipulated day time only (i.e., after 7:00AM) Monday to Friday and after 9:00AM on Saturday and Sunday (if applicable).

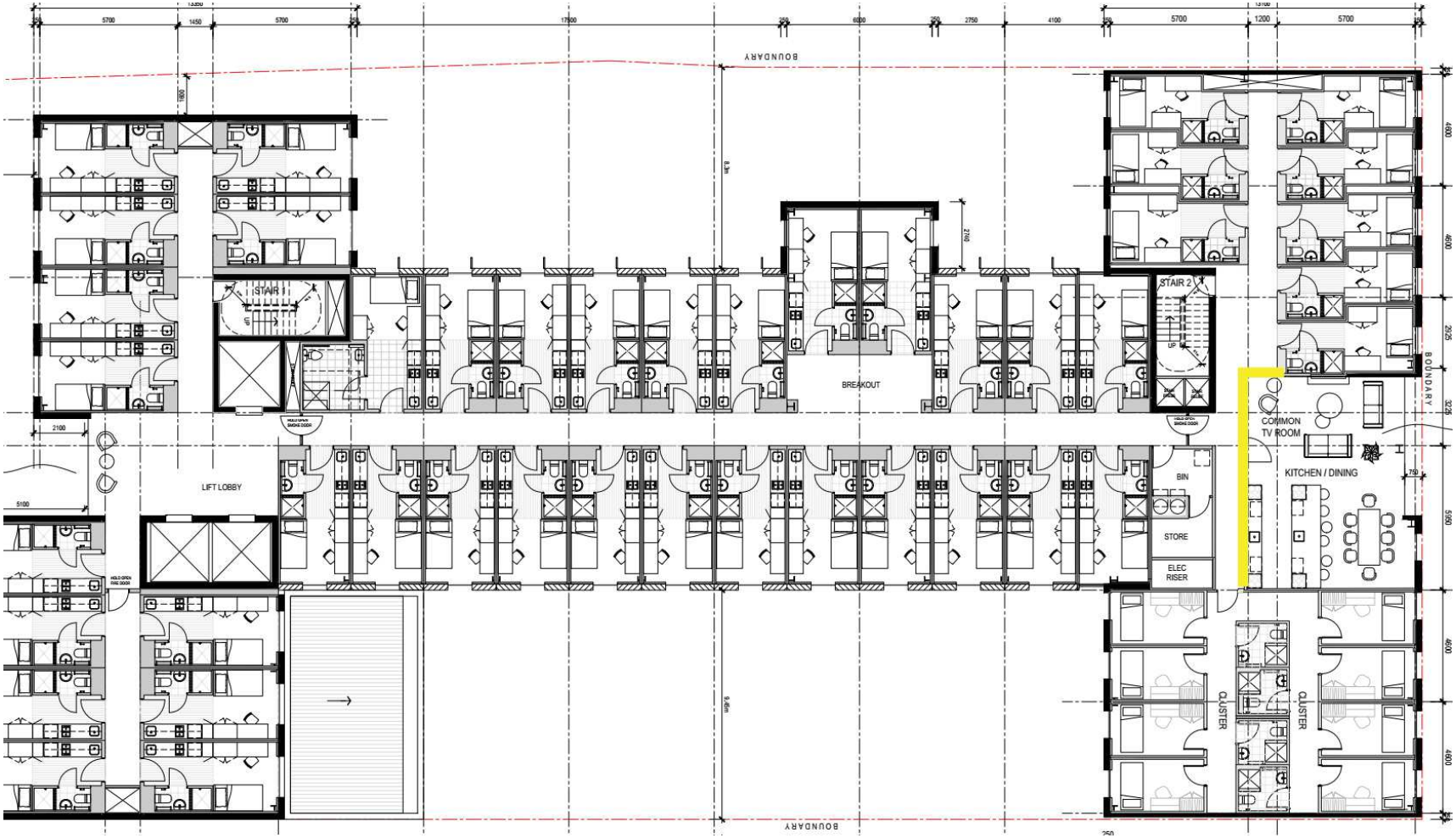
Appendix A – Internal Partitions Mark-ups

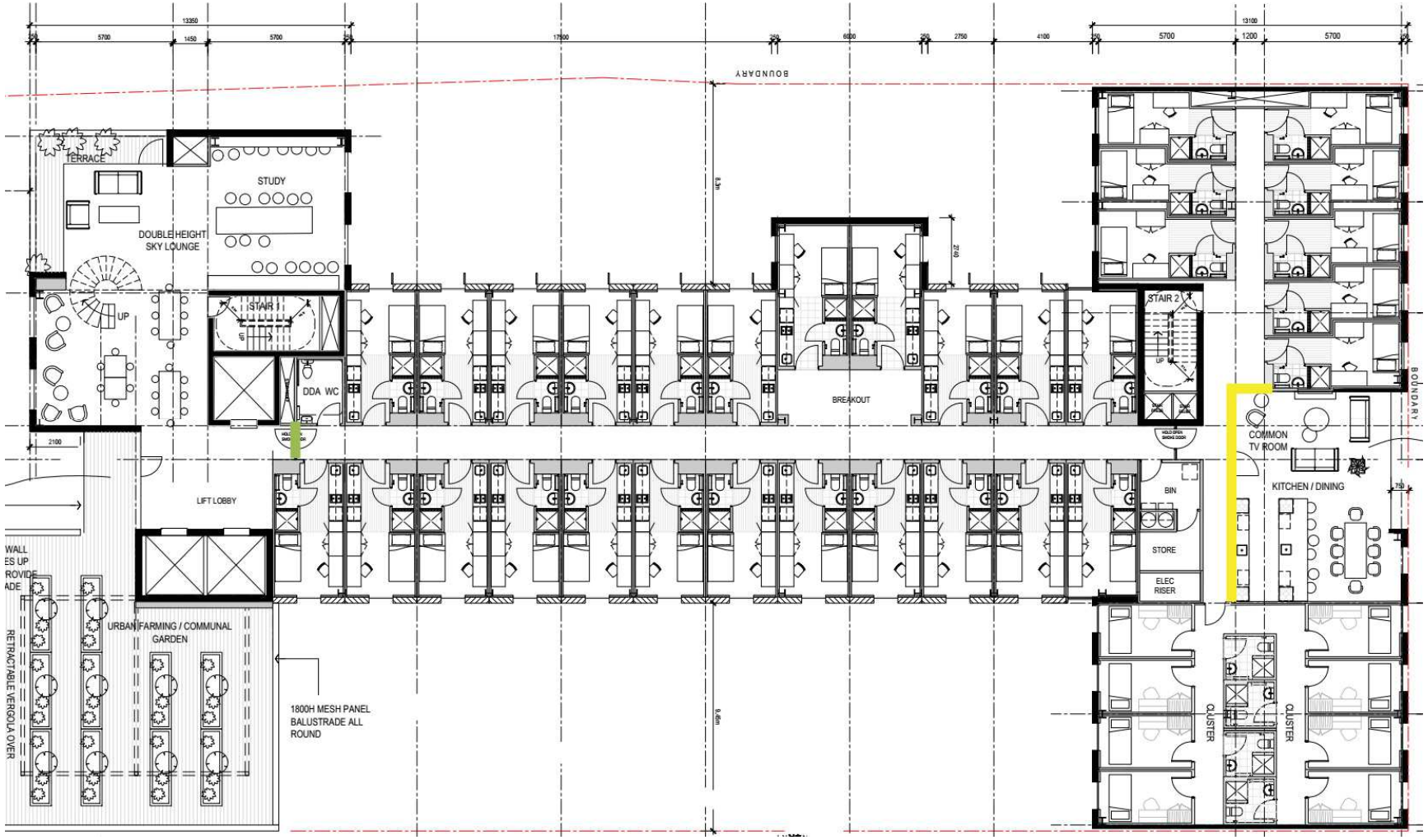
Speech Privacy	D_W Rating	Mark-up Colour
Normal Speech Privacy	35 - 40	
Good Speech Privacy	40 - 45	
Very Good Speech Privacy	45 - 50	
Operable Walls		

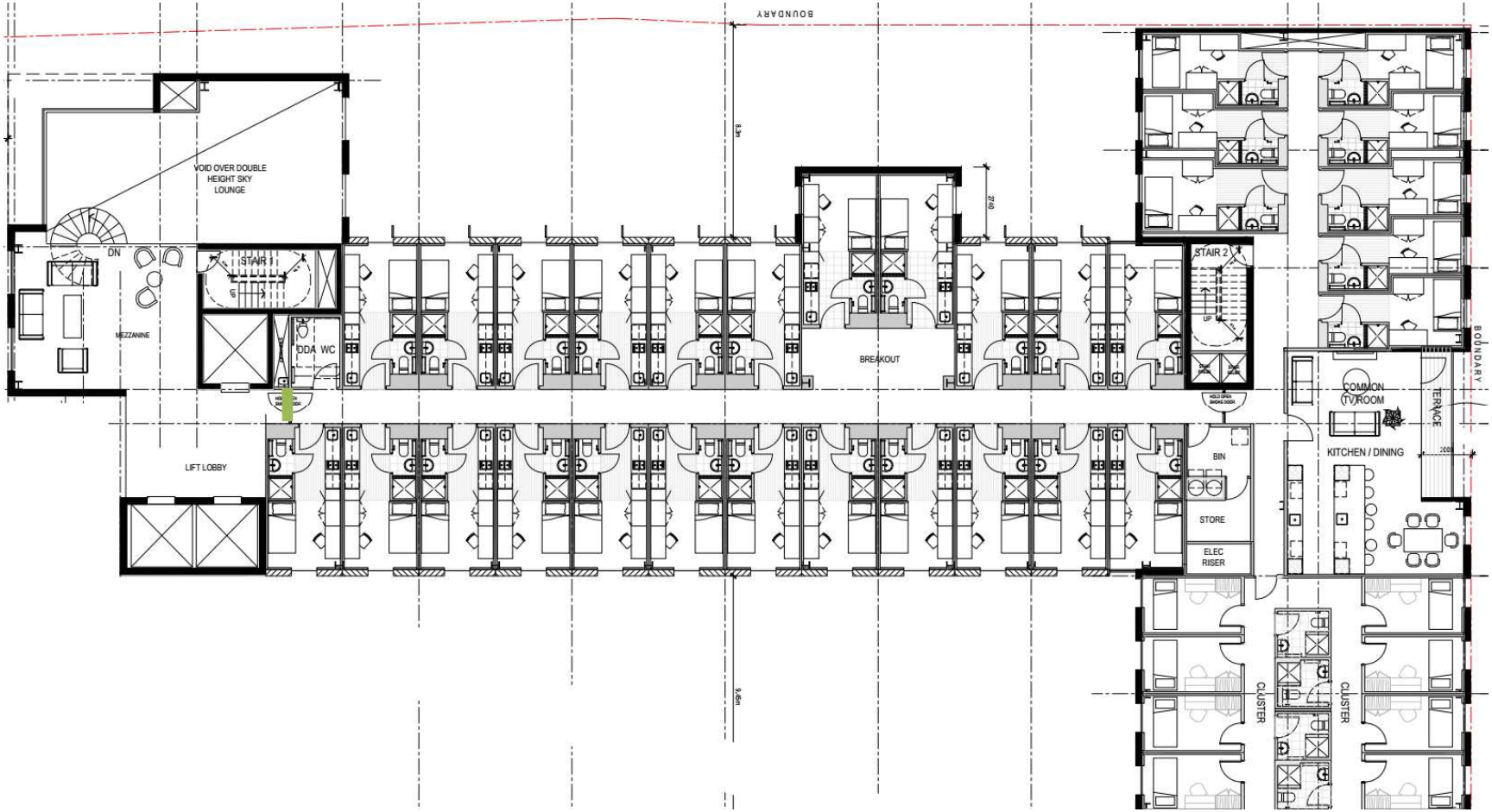

STORMWATER
26 820
BOUNDARY
5 590 BOUNDARY
27 910
BOUNDARY
3m HIGH GRID MESH FENCE
GATE (ACCESS CONTROL)
WALKWAY
GLAZING WITH DRENCHERS
GAS
KITCHENETTE
PRIVATE LOUNGE
WC
EASMENT
EMERGENCY EXIT GATE
URBAN FARMING / COMMUNAL GARDEN
SECURABIKE RACKS TO ACHIEVE 80 BIKES (1 PER 10 STUDENTS)
MECH
MAIN COURTYARD
LINE OF TERRACE ABOVE
LINE OF BUILDING ABOVE
OUTDOOR UNDER COVER SEATING / COOKING
BBQ
BBQ
FRONT COURTYARD
STAIR 1
STUDY HUB
ELEC / COMMS
FIP
COMMON KITCHEN
MUSIC / DANCE / MULTI PURPOSE ROOM
MAINT
ENTRY (TILES PER LOBBY IN NON SLIP RANGE)
A/L
GLASS AUTO ENTRY DOORS
LIFT LOBBY
CASUAL SEATING POLISHED CONCRETE
DINING
GAS
BIN
WC
WC
A/L
FOYER / WAITING
DDA WC
VENDING
COMMS
CLEAN
HYDRAULIC PLANT
LOADING
MEETING / COUNCIL
MANAGER OFFICE
KITCHENETTE
GAMES
FEATURE SCREEN
3 x 5000L DCW POLY TANKS
MRV
AUTOGATES
RECEPTION
ADMIN
FILE
CINEMA 2
CINEMA 1
FURNITURE STORE
FIRE TANK
FIRE PUMP
FIRE PUMP
MSR
TRANS
BOOSTER
STORE


BOUNDARY
GLAZING
LINE OF BUILDING ABOVE
TERRACE
PRIVATE STUDY
STAIR 1
GLAZED PARTITION
2100
LIFT LOBBY
5100
BREAKOUT
STAIR 2
COMMON TV ROOM
KITCHEN / DINING
BIN
MECH VENT
STORE
ELEC RISER
LAUNDRY
FITNESS & WELLBEING
CLUSTER
CLUSTER
8.5m
9.4m
5700
1450
5700
6000
6000
6000
6000
6000
4350
250
4000
1200
2200
1200
4000

BESTEC

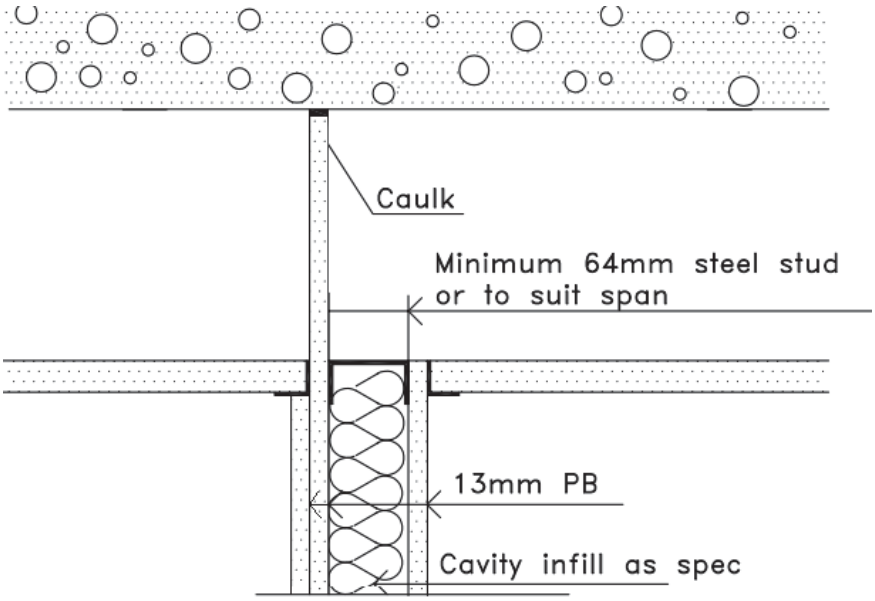

BOUNDARY
STAIR 1
STAIR 2
BREAKOUT
LIFT LOBBY
COMMON
TV ROOM
KITCHEN / DINING
BIN
STORE
ELEC
RISER
CLUSTER
CLUSTER
BOUNDARY
BOUNDARY


BOUNDARY
TERRACE
STUDY
DOUBLE HEIGHT SKY LOUNGE
UP
STAIR 1
DDA WC
BREAKOUT
STAIR 2
COMMON TV ROOM
KITCHEN / DINING
BIN
STORE
ELEC RISER
LIFT LOBBY
URBAN FARMING / COMMUNAL GARDEN
RETRACTABLE VERGOLA OVER
1800H MESH PANEL BALUSTRADE ALL ROUND
CLUSTER
CLUSTER

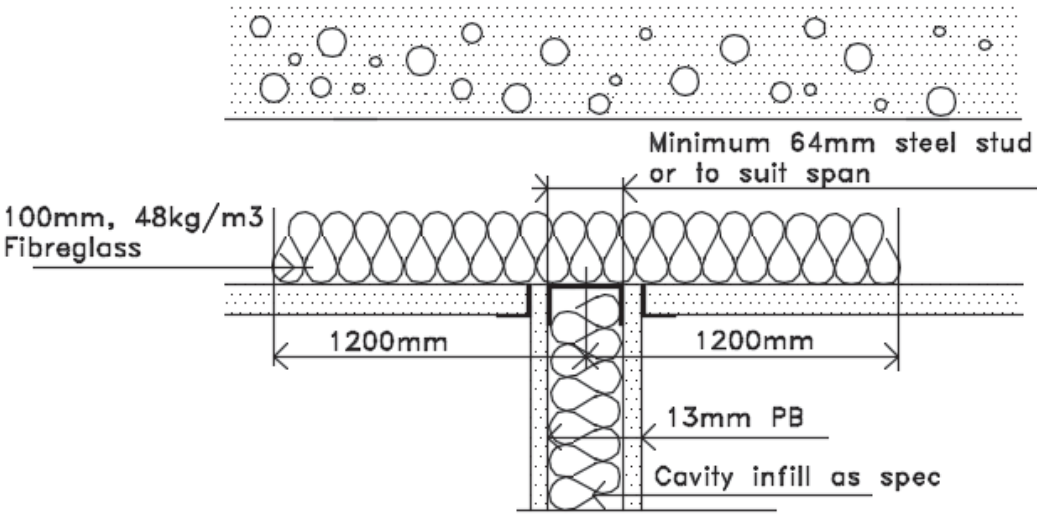

BOUNDARY
VOID OVER DOUBLE HEIGHT SKY LOUNGE
DN
STAIR 1
UP
MEZZANINE
DDA WC
LIFT LOBBY
BREAKOUT
8.3m
2740
STAIR 2
UP
COMMON (TV) ROOM
KITCHEN / DINING
TERRACE
2000
BOUNDARY
BIN
STORE
ELEC RISER
CLUSTER
CLUSTER
9.45m

Appendix B – Internal Partitions Standard Designs

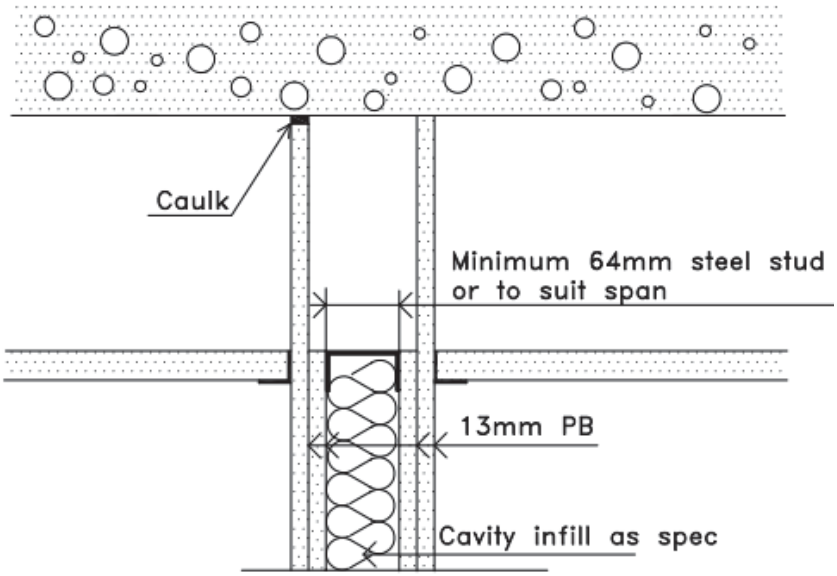
Speech Privacy	D_W Rating	Construction Detail
Normal Speech Privacy	35 - 40	Detail 1
Good Speech Privacy	40 - 45	Detail 2
Very Good Speech Privacy	45 - 50	Detail 3
Operable Wall		Detail 4



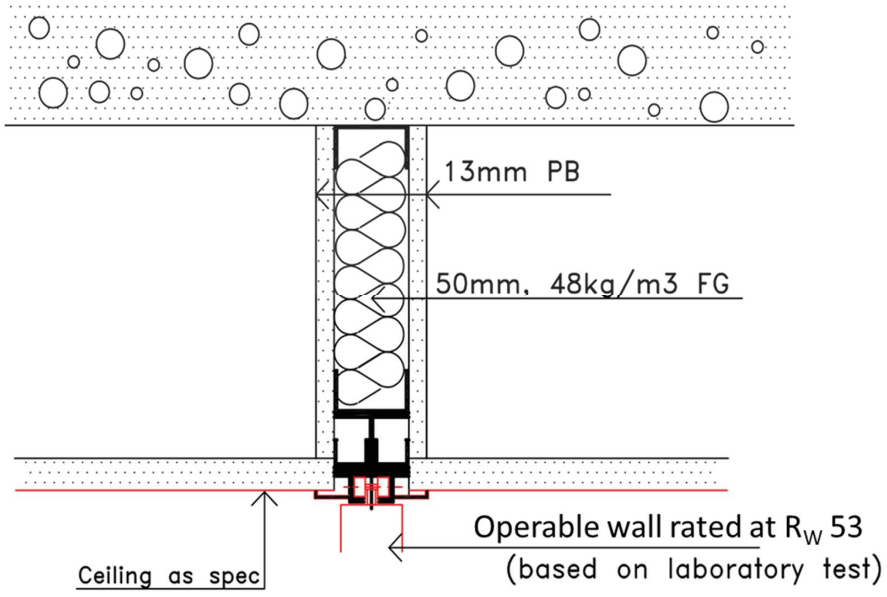
Detail 1 – Good Privacy, D_w 40 - 45



Detail 2 – Normal Privacy, D_W 35 - 40



Detail 3: Very Good Privacy, D_W 45 - 50



Detail 4 – Operable wall treatment

Appendix C – Pipe work details to achieve NCC compliance

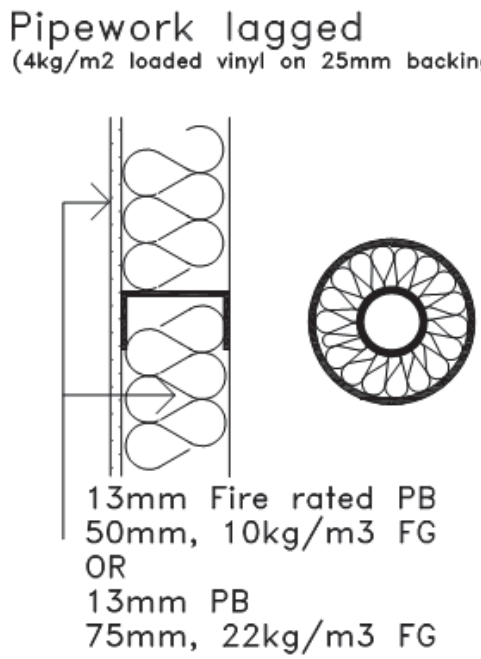


Figure C-1: Construction to achieve R_w+C_{tr} 40, for pipes running adjoining habitable spaces (Bedroom, Living)

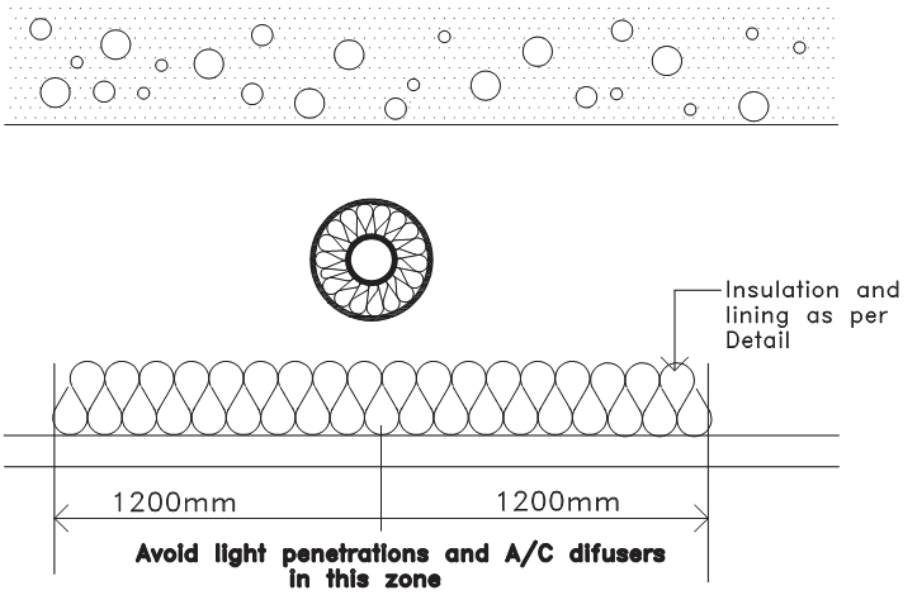


Figure C-2: Construction for pipes running through ceiling of habitable spaces

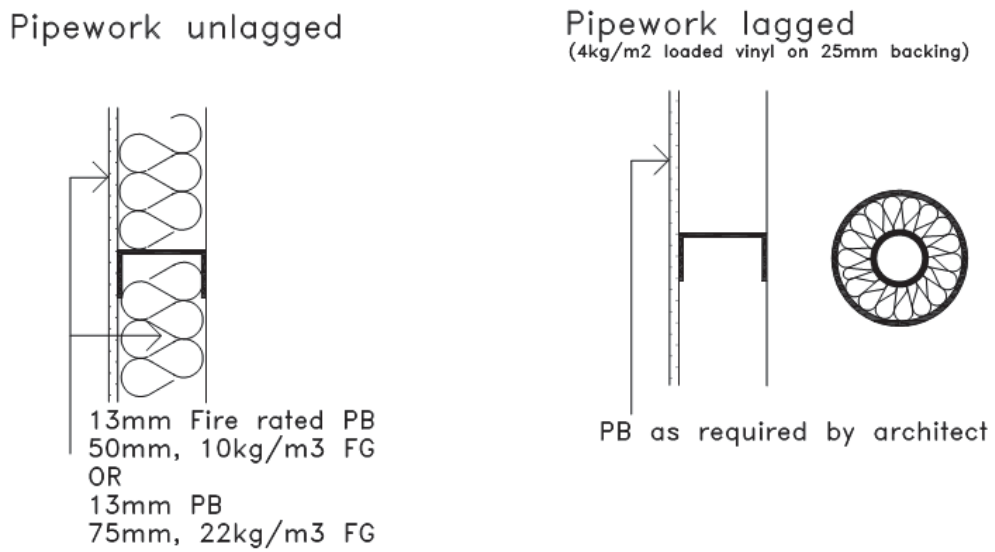


Figure C-3: Construction to achieve R_w+C_{tr} for pipes adjoining non-habitable spaces (e.g. Bathroom, Laundry)

Appendix D – Glossary of Acoustic Terminology

dB(A) Also referred to as dBA. A unit of measurement, decibels (A), of sound pressure level which has its frequency characteristics modified by a filter ("A-weighted") so as to more closely approximate human ear response at a loudness level of 40 phons. The table below outlines the subjective rating of different sound pressure levels.

Noise Level (dBA)	Subjective Rating
25-30	Barely audible and very unobtrusive.
30-35	Audible but very unobtrusive.
35-40	Audible but unobtrusive.
40-45	Moderate but unobtrusive.
45-50	Unobtrusive with low levels of surrounding activity.
50-55	Unobtrusive with high levels of surrounding activity.

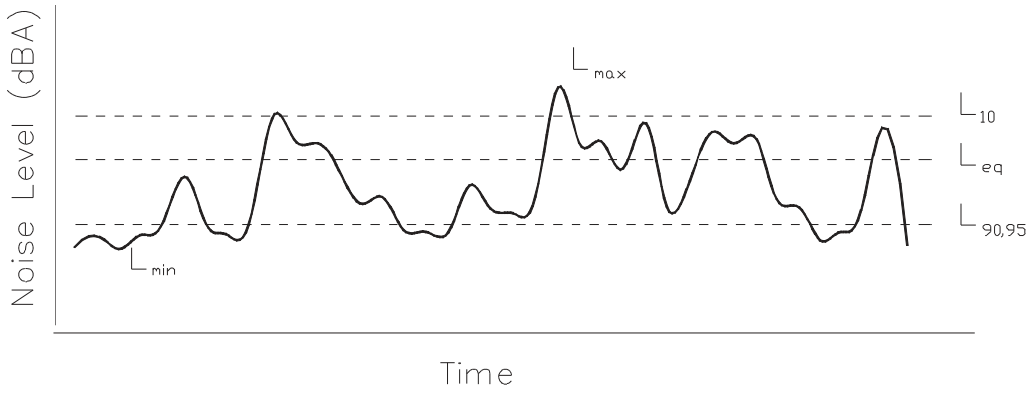
L_1 The noise level which is equalled or exceeded for 1% of the measurement period. L_1 is an indicator of the impulse noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).

L_{10} The noise level which is equalled or exceeded for 10% of the measurement period. L_{10} is an indicator of the mean maximum noise level, and is used in Australia as the descriptor for intrusive noise (usually in dBA).

L_{90}, L_{95} The noise level which is equalled or exceeded for 90% of the measurement period. L_{90} or L95 is an indicator of the mean minimum noise level, and is used in Australia as the descriptor for background or ambient noise (usually in dBA).

L_{eq} The equivalent continuous noise level for the measurement period. L_{eq} is an indicator of the average noise level (usually in dBA).

L_{max} The maximum noise level for the measurement period (usually in dBA).



Note: The subjective reaction or response to changes in noise levels can be summarised as follows: A 3dBA increase in sound pressure level is required for the average human ear to notice a change; a 5dBA increase is quite noticeable and a 10dBA increase is typically perceived as a doubling in loudness.

STC/R_W Sound Transmission Class or Weighted Sound Reduction Index. Provides a single number rating (from the sound transmission loss or sound reduction index for each frequency band) of the sound insulation performance of a partition. The higher the value, the better the performance of the partition. The subjective impression of different ratings is shown in the table below.

Type of noise source	STC/Rw Rating				
	40	45	50	55	60
Normal Speech	Audible	Just Audible	Not Audible		
Raised speech	Clearly Audible	Audible	Just Audible	Not Audible	
Shouting	Clearly Audible	Clearly Audible	Audible	Just Audible	Not Audible
Small television/small entertainment system	Clearly Audible	Clearly Audible	Audible	Just Audible	Not Audible
Large television/large hi-fi music system	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Just Audible
DVD with surround sound	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Audible
Digital television with surround sound	Clearly Audible	Clearly Audible	Clearly Audible	Audible	Audible

FSTC/R_W' The equivalent of STC/R_W, unit for sound insulation performance of a building element measured in the field.

C_I, C_{tr} The ratings (R_W, D_{nTw}, L_{nTw}) are weighted in accordance to a spectrum suited to speech. This term modifies the overall rating to account for noise with different spectra, such as traffic (C_{tr}) or footfalls (C_I). The ratings may be written as R_W+C_{tr}, or $D_{nTw}/L_{nTw}+C_I$.

NNIC/D_{nTw} Normalised Noise Isolation Class, or Weighted Standardised Sound Level Difference. Provides a single number rating of the sound level difference between two spaces, and incorporates the effects of flanking noise between two spaces. This rating is generally accepted to be about 5 points less than the STC/R_W rating.

IIC/L_{nw} Impact Insulation Class, or Weighted Normalised Impact Sound Level. L_{nw} = 110 - IIC. The higher the IIC rating, or the lower the L_{nw} rating the better the performance of the building element at insulating impact noise. The table below gives the subjective impression of different ratings:

IIC	Lnw	Subjective Rating
40	70	Clearly Audible
45	65	Clearly Audible
50	60	Audible
55	55	Audible
60	50	Just Audible
65	45	Inaudible

FIIC/L_{nTw}' The equivalent of IIC/L_{nw}, but the performance is for the building element measured in the field.

ATTACHMENT C

ARCHITECTURAL DESIGN STATEMENT

BROWN FALCONER

BROWN FALCONER

Design Statement

124 Waymouth Street – Student Accommodation

Brown Falconer Group
ABN 65 007 846 586

28 Chesser Street, Adelaide
South Australia 5000
Telephone 08 8203 5800
Facsimile 08 8223 2440
brownfalconer.com.au

The proposed development at 124 Waymouth Street is a multi-storey student housing facility The site is very well located for a development of this type with proximity to the University of South Australia, Adelaide University, North Terrace medical precinct and Light Square as well as good connection to the Central Market hospitality.

The programme of the building is to offer compact individual and cohabited separate bedroom accommodation for students with significant shared common areas particularly focused at the ground level and top 2 levels.

The project has been through the Pre-lodgment Panel Meeting process and an initial Design Review conducted by the Office for Design and Architecture. In order to meet timeframes to open for the 2021 education year, we have undertaken amendments in response to the items raised in the ODASA review and have lodged without a second design review assessment.
Our design statement is structured to note the original proposal and commentary and then the positive iteration currently lodged.

Massing and Arrangement
The initial scheme consisted of an 'I' shaped footprint with massing in each corner to achieve separate tower identities. A 5th 'tower' was incorporated centrally on the western façade to break up the façade facing Light Square. These towers were accentuated by setbacks and varying heights while staying under a total building height of 53m.

The review panel supported this design approach but suggested that to further accentuate these tower identities, these elements could go higher beyond the proposed height.

This comment has been considered however our preference is to stay under the maximum height limit. In response, we have amended the design in 2 ways to further accentuate the variation in height of the tower elements:

- the roof top urban farm (South East Tower) has been lowered by one level to show a 2-level height difference between the front towers
- we have added screening to rooftop services using façade precast to the north – eastern tower.

We believe this achieves the outcome desired whilst staying under the desired height limit.

The panel also suggested a review of the student courtyard areas, both the urban farm on the roof and the ground courtyards with regards to access to light to the eastern courtyard and a suggestion to maximise the western courtyard.

The currently lodged scheme exhibits a fundamental re-think of the ground plane to offer a single, larger western courtyard with greater setbacks in lieu of the 2 smaller courtyards.

Direct solar access is also now achieved to the roof top urban farm by providing a full open terrace rather than south facing which was in shadow by rooms to the north.

Site access is provided at the front (Waymouth St), rear (Playhouse Lane) and west (laneway to Light Sq.). As recommended by the review panel, the rear access from Playhouse Lane has been increased in width to create a more generous and higher amenity entry. Re-planning of the services area at the rear also now provides better site permeability and safety to pedestrians. The result is an improved amenity for students and an enhanced connection to Light Square.

Podium & Facade
The reviewed scheme proposed a screened courtyard space rather than a podium to provide street activation as well as relating to the existing street context. The courtyard and set back of building above was well supported but further review of the screening treatment to improve the visual connection to the street was advised.

The design now shows further resolution of the screening material and the landscaping of the courtyard space showing the intended use for the space.
There is also the addition of a secure walkway for access to the private lounge and the main courtyard.

The precast façade pattern and contrasting colours is supported if ensuring that prototyping of the panels is undertaken to ensure the visual effects can be achieved. These panels have been prototyped using 3d printing and 3d visualisation software and will be further verified in scale and material to guarantee the desired outcome is achieved.

Internal Spaces and Common Areas
To improve the access and amenity of break-out and communal areas, the Cluster and Ensuite arrangements have been reconfigured from having separate common spaces to a larger combined common area with kitchen and lounge facilities. Glazing is provided to the full northern façade of these spaces with a terrace on level 16 providing improved light and ventilation.

3d images have also been provided to show the amenity of these spaces.

Additionally, the Common Sky Lounge has a direct link to the Roof Top Urban Farm which has been expanded and extends further north for a larger terrace and direct northern sun.

The reviewed design showed the laundry at the northern end of level 1. This was considered too far away from lifts and suggested that it be relocated to a more central location. We have reviewed the common areas and the current lodged layout has the laundry and gym clustered on level 1 at the southern end adjacent the lifts.

Shading
Vertical shading fins to the western façade were thought to be inadequate and further development of the façade detailing was encouraged.

The fins have been detailed such that we believe to provide adequate shading where required. Details and 3d images have been provided to support this along with a Sustainability Management Plan that highlights the effectiveness of the designed shading devices in conjunction with narrower windows to the Western façade.

To provide covered outdoor space at ground, the glass line has been set in 3m. This provides significantly more outdoor usable area as well as higher amenity through the landscaped courtyard.

Summary
The application as lodged for assessment demonstrates a high quality, well-articulated student housing proposal with the ability to significantly activate the Waymouth Street precinct particularly at ground level and with strong public interface through multiple access points and permeability.

The proponent has embraced the Design Review process and made significant and progressive alterations to the scheme in direct response to feedback. The proposed development is a well-considered and positive contributor to the City of Adelaide.

Yours sincerely
for **BROWN FALCONER**

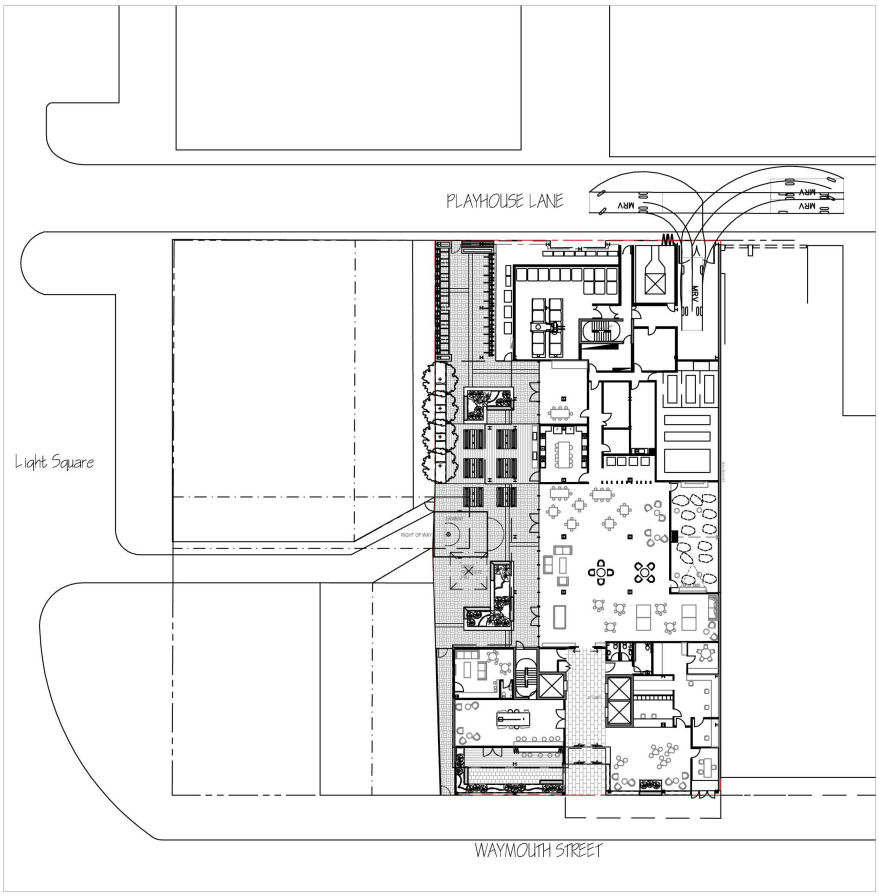
ROWAN BARBARY
Project Architect

Encl.

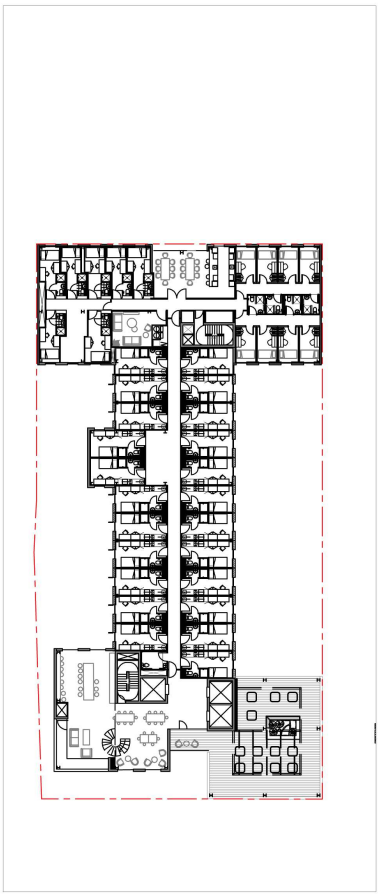
ATTACHMENT D

LANDSCAPE CONCEPT PLAN

HEMISPHERE DESIGN



GROUND FLOOR



LEVEL 15

Suggested Plant Species List

Code	Botanical Name	Spacing	Size	Quantity
Small size tree		(mm)	Height (mm)	
L	Lemon tree -dwarf size	As shown		
P	Pear tree - dwarf size	As shown		
Medium and Small Shrubs			Pot size (mm)	
Fl	Ficus lyrata	400	200	
Ae	Aspidistra elatior	300	200	
Ac	Arthropodium cirratum	400	200	
Pb	Philodendron bipinnatifidum	400	200	
Mp	Murraya paniculata	500	200	
Ground covers and climbers				
Pc	Philodendron cordatum	300	200	
Vh	Viola hederaceae	300	200	
Sa	Schefflera actinophylla	300	200	
Tj	Trachelospermum jasminoides	300	200	
Grasses and sedges				
Dr	Dianella revoluta	300	200	

*Veggie and herb plants to be selected and planted by students.

Aspidistra elatior

Trachelospermum jasminoides

Philodendron bipinnatifidum

HEMISPHERE DESIGN

PROJECT

124 Waymouth Street
Student Accommodation

DRAWING

Landscape Concept

CLIENT

DWG NO	HD_V014_DA01	SHEET NO	cover sheet
DRAWN	SSW	CHECKED	SRH
SCALE	1:500 @ A3	DATE	17.12.2018
		REVISION	

STATUS

For Development Approval

Hemisphere Design (Aust) Pty Ltd.
PO BOX 858 MITCHAM CENTRE, TORRENS PARK SA 5062
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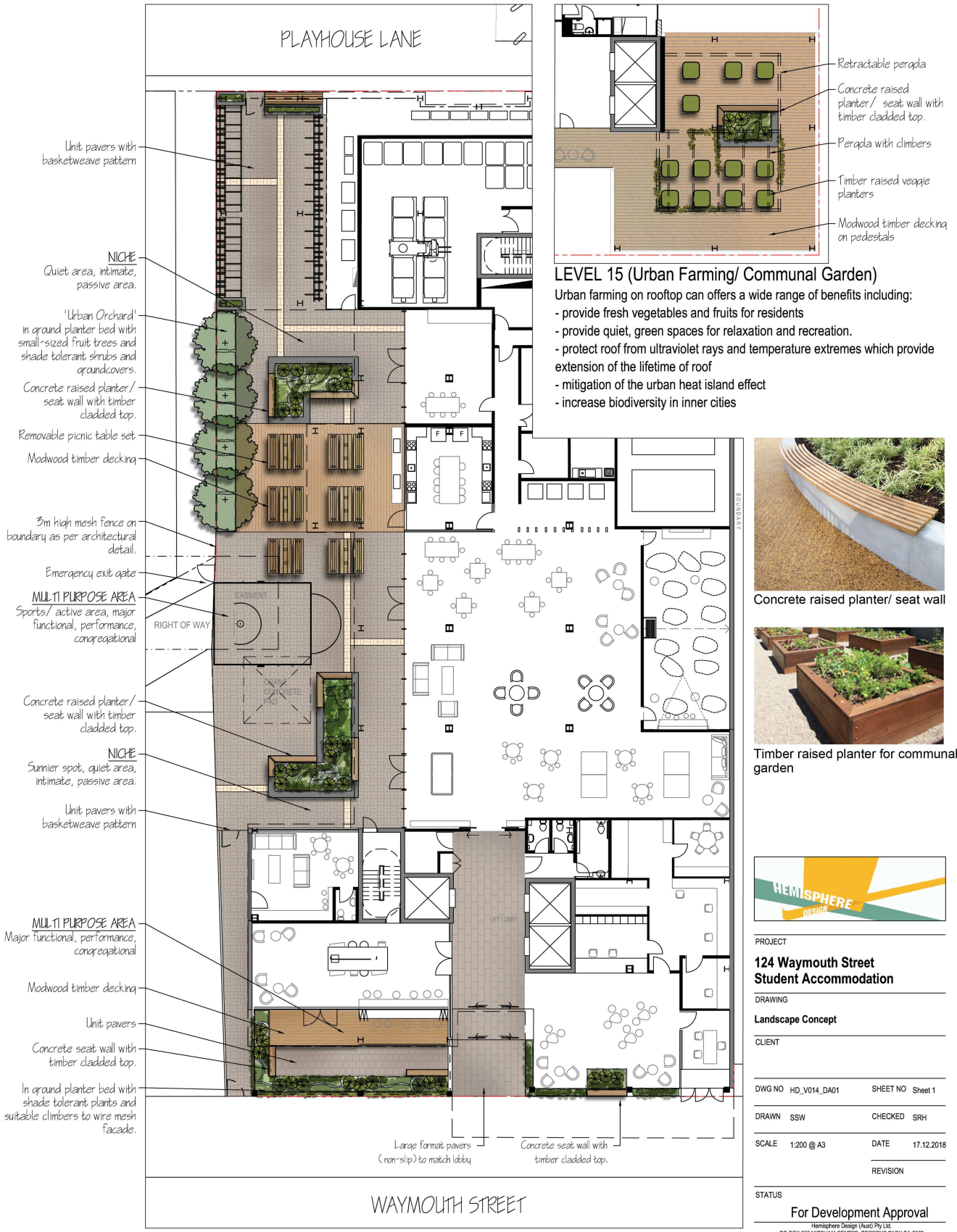
ACN 114 503 936



GROUND FLOOR

LEVEL 15 (Urban Farming/ Communal Garden)

Urban farming on rooftop can offers a wide range of benefits including:
- provide fresh vegetables and fruits for residents
- provide quiet, green spaces for relaxation and recreation.
- protect roof from ultraviolet rays and temperature extremes which provide extension of the lifetime of roof
- mitigation of the urban heat island effect
- increase biodiversity in inner cities

Concrete raised planter/ seat wall

Timber raised planter for communal garden

N

0 5 10m

HEMISPHERE DESIGN

PROJECT

124 Waymouth Street
Student Accommodation

DRAWING

Landscape Concept

CLIENT

DWG NO	HD_V014_DA01	SHEET NO	Sheet 1
DRAWN	SSW	CHECKED	SRH
SCALE	1:200 @ A3	DATE	17.12.2018
		REVISION	

STATUS

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ATTACHMENT I

PRELIMINARY SITE INVESTIGATION

AGON ENVIRONMENTAL

AGON ENVIRONMENTAL

PRELIMINARY SITE INVESTIGATION
124 Waymouth Street Adelaide SA

Prepared for:	Trust Company (Australia) as Trustee of the WH Waymouth Trust
Date:	20 December 2018
Reference No:	JCO326
Report Version:	JC0326_PSI/02

AGON ENVIRONMENTAL
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TABLES

FIGURES

AGON DOCUMENT CONTROL

Report Title:	Project Reference
PRELIMINARY SITE INVESTIGATION 124 Waymouth Street Adelaide SA	JC0326_PSI
Written:	**Approved:**
 **Sophie Hambour** Environmental Scientist	 **David Probert** National Manager Environment

Rev No	Status	Date	Author	Reviewer
01	Draft	30/11/18	SH	DP
02	Final	20/12/2018	SH	DP

Rev No	Copies	Recipient
01	1 electronic	Trust Company (Australia): Mr John De Fazio
02	1 electronic	Trust Company (Australia): Mr John De Fazio Master Plan: Mr Graham Burns

EXECUTIVE SUMMARY

Agon Environmental Pty Ltd (Agon) was engaged by the Trust Company (Australia) to conduct a Preliminary Site Investigation of the site identified as 124 Waymouth Street Adelaide SA ("the site").

The objectives of this assessment were to:

- Identify potentially contaminating activities which may have occurred at the site; and
- Provide a preliminary assessment of potential risks to human health and the environment associated with any contamination which may have been caused by the identified PCAs at the site.

Agon conducted the following scope of works:

- Review of the environmental setting of the site, including soil type, geology, groundwater, zoning; and
- Review of the history of the site, including previous ownership, occupancy, land uses and information available on State and Local Government databases.

Based on the research undertaken by Agon, the following PCAs have been identified:

- Former Site Operations (McPherson Limited – Iron Works);
- Importation of Fill;
- Migration of contaminants from neighbouring properties;
- Asbestos Containing Materials; and
- Electrical Transformer.

The risk to site occupants from any site contamination resulting from these potentially contaminating activities is considered to be low under the current commercial land uses conducted at the site (offices).

However, if the site is redeveloped, it is recommended that further environmental investigations, including soil sampling beneath the building slab and carpark, be conducted to determine if the PCAs have caused site contamination at the property.

It is also recommended that the Asbestos Register be reviewed and updated for the property.

1.0 INTRODUCTION

1.1 Background

Agon Environmental Pty Ltd (Agon) was engaged by John De Fazio of the Trust Company (Australia) as Trustee of the WH Waymouth Trust (the Client) to conduct a Preliminary Site Investigation (PSI) of the site identified as 124 Waymouth Street Adelaide SA ("the site", see Figure 1).

Agon understand that this PSI is required for due diligence purposes to inform the proposed sale of the property.

This Preliminary Site Investigation (PSI) has been undertaken in general accordance with the guidance provided within Schedule B2 of the National Environment Protection Council (1999) National Environment Protection (*Assessment of Site Contamination*) Measure, as amended in 2013 (the NEPM).

1.2 Objective

The objectives of this assessment were to:

- Identify potentially contaminating activities (PCAs) which may have occurred at the site; and
- Provide a preliminary assessment of potential risks to human health and the environment associated with any contamination which may have been caused by the identified PCAs at the site.

1.3 Scope of Work

The scope of work for this assessment comprised:

- Review of property details and current zoning (summarised in Sections 2.1 and 2.2);
- Description of site features and land use on and surrounding the site (Section 2.3);
- Review of regional hydrogeology, geology, and topography (Sections 2.4 – 2.6);
- Review of underground services (Section 2.7);
- Search of public databases indicating potential contaminants of concern (PCOC) (Section 3.0);
- Review of historical land titles ownership (Section 4.1);
- Review of historical aerial photographs of the site and surrounding area (Section 4.2);
- Site Inspection (Section 5.0); and
- Compilation of this information in this report.

Figure 1: Site Location

Source: Property Location Browser (DPTI 2018a)

2.0 SITE DETAILS

2.1 Site Identification

The site comprises a single land parcel outlined red within Figure 2, totalling approximately 1,850 m^2 in area. The land parcel and Certificate of Title details are provided in Table 1. The current Certificate of Titles are provided in Appendix A.

Figure 2: Site Land Parcel
Source: Property Location Browser (DPTI 2018a)

Table 1: Land Parcel Details

CT Volume/ Folio	Plan/ Parcel	Site Area	Address
5610/549	Allotment 101 Filed Plan 199658	1850 m^2	124 Waymouth Street Adelaide SA

2.2 Site Zoning

The site is situated in the western portion of the Adelaide Business District (CBD), within the City of Adelaide Council area. As shown in Figure 3, the site is currently zoned "Commercial Capital City Zone". The adjoining allotment to the west of the site is zoned within the Capital City Zone Policy 13, the Central Business Policy Area.

Under the City of Adelaide Council Development Plan (DPTI 2018), the general objectives of the Capital City Zone are:

Objective 1: The principal focus for the economic, social and political life of metropolitan Adelaide and the State.

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

Objective 3: Design and management of City living to ensure the compatibility of residential amenity with the essential commercial and leisure functions of the Zone.

Objective 4: City streets that provide a comfortable pedestrian environment.

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

Objective 6: Buildings that reinforce the gridded layout of Adelaide's streets and respond to the underlying built-form framework of the City.

Objective 7: Large sites developed to their full potential while ensuring a cohesive scale of development and responding to a building's context.

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

2.3 Physical Setting and Land Use

The site is bound by Playhouse Lane (northern boundary), Waymouth Street (southern boundary and apartment and office buildings to the east and west. The site is occupied by a three-story commercial office building. A sealed car park is situated to the rear of the building, with access provided via Playhouse Lane at the rear (north) and via a private road along the western boundary from Waymouth Street (south). The surrounding land use is summarised in Table 3.

As shown in Figure 4, the 2017 Generalised Land Use category at the site (outlined in red) is identified as Commercial, with a Commercial and Residential allotment adjoining to the west. The adjoining allotment to the east is identified as Vacant Residential (the U2 on Waymouth Development) and has since been redeveloped.

Land use in the wider local area includes predominately Commercial, Retail Commercial and Utilities and Industry within the CBD, with other land uses including Vacant and Recreation to the west (West Park Lands), Education and Public Institution to the north (TAFE SA Adelaide Campus, Uni SA City West Campus, Royal Adelaide Hospital).

Table 2: Surrounding Land Uses

Direction	Land Use
North	Playhouse Lane, Playhouse Lane Carpark (Utilities/ Industry), Corporate Office, Commercial, Currie Street, TAFE SA Adelaide Campus.
East	Residential Development (U2 on Waymouth Development), Queens Theatre, Commercial, Residential, Young Street, Commercial.
South	Waymouth Street, Commercial (Federation Trading), Residential (Hostel, apartment developments on Morphett Street and Franklin Street).
West	Residential (apartments), Commercial, Light Square (Recreation/ Reserve), Carpark (Utilities/ Industry), Commercial.

Figure 3: Site Zoning Map
Source: Location SA Map Viewer (SA Gov 2018)

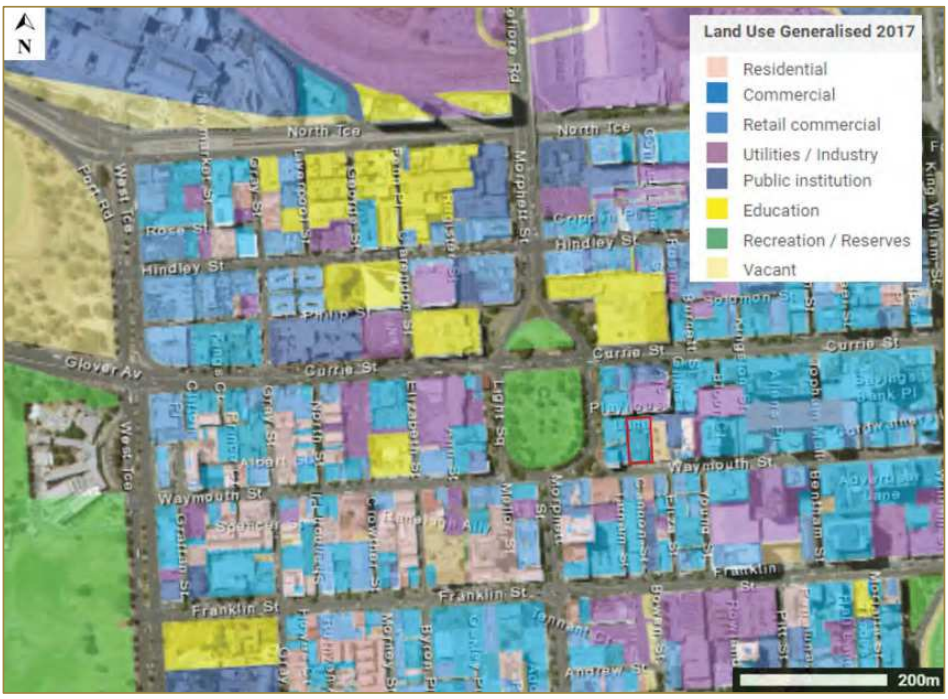


Figure 4: Generalised 2017 Land Use
Source: Location SA Map Viewer (SA Gov 2018)

2.4 Hydrogeology

2.4.1 Regional Hydrogeology

A search for registered groundwater wells within a 500 m radius of the site was undertaken using the online Water Connect website (DEWNR 2018a, see Figure 5). There are 154 registered wells identified within a 500 m radius of the site. These wells generally access the local Quaternary (Qpah) aquifer systems, with some accessing the deeper Tertiary (Tomw-T1 or Tomw-T2) aquifers. Registered uses of these wells include Monitoring, Investigation, Observation and Drainage wells.

Standing water levels (SWL) ranging from 1.7 metres below ground level (mBGL) to 40.0 mBGL. Salinities were recorded in 10 of the 154 wells and range from 400 mg/L Total Dissolved Solids (TDS) to 3,857 mg/L TDS, indicating fresh good quality (potable) water to saline poor quality (non-potable) water conditions.

Groundwater flow direction is anticipated to be to the west/ north west. A summary of the Water Connect data is provided in Appendix B.

2.4.2 Site Specific Hydrogeology

Groundwater information obtained from the Water Connect Website indicates that there are no registered groundwater wells on the site. The nearest registered groundwater well is an investigation well (unit number 6628-24928) located east of the site at 23-31 Playhouse Lane. This well was drilled to a maximum depth of 25 mBGL in 2009.

Groundwater water well (unit number 6628-235) located 100 m to the north of the site at 91-95 Currie Street was drilled to a maximum depth of 27.34 mBGL in 1914. This well recorded a SWL of 21.34 mBGL and recorded a salinity of 1,456 mg/L TDS, which indicates that this well accesses poor quality (non-potable) water.

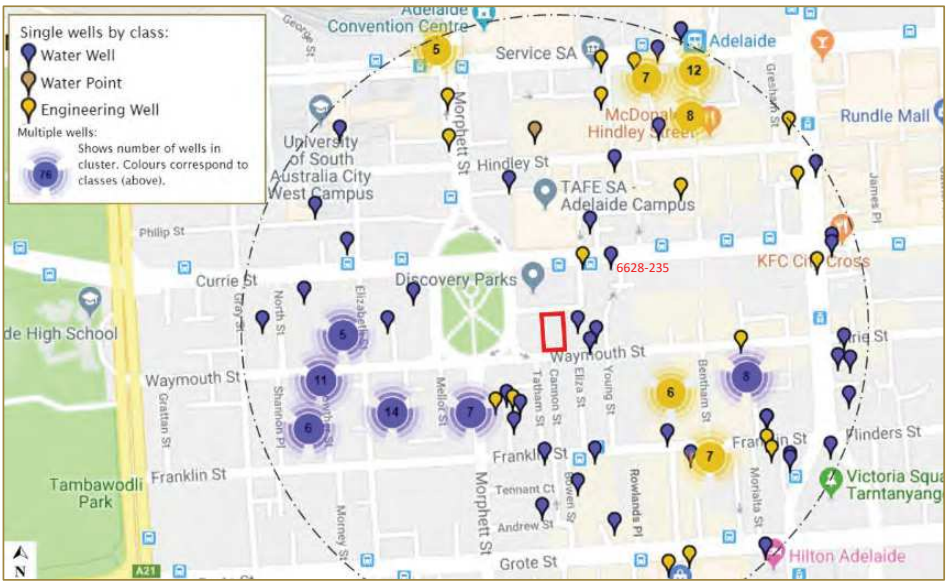


Figure 5: Registered Groundwater Wells within a 1km radius
Source: Water Connect (DEWNR 2018a)

2.5 Geology

2.5.1 Regional Geology

Geological information, as presented in the South Australian Resources Information Geoserver (Figure 6, SARIG – DSD 2018), indicates that natural soils at the site are likely to comprise Pleistocene Aged Keswick Clay sediments (Qpas; smectite-rich, grey-green, with red or yellow mottling and rare sand lenses) and Undifferentiated Pleistocene calcrete.

In the wider vicinity, natural soil is likely to comprise Pleistocene Aged sediment of the Pooraka Formation (Qpap; clay, sand and carbonate earth, silty, with gravel lenses) and Pleistocene Holocene Aged Undifferentiated Quaternary rocks (Q) along the River Torrens.

Figure 6: Generalised Regional Geology
Source: SARIG (2018)

2.5.2 Site Specific Geology

Anecdotal information regarding investigations at nearby sites indicates that local soil conditions comprise fill of variable depth (up to approximately 4 metres), overlying predominantly clay material underlain by sand and sandstone. A summary of the subsurface conditions encountered is provided in .

2.6 Topography and Drainage

As shown in Figure 7, the site (outlined in black) is relatively level. The regional topography grades towards The River Torrens (approximately 700 north of the site).

Surface water in the vicinity of the site is expected to discharge by overland flow onto the adjacent roads and drain to local stormwater infrastructure prior to being discharged into the River Torrens. The River Torrens transects the Adelaide Metropolitan area and discharges into the Gulf of St Vincent (approximately 9 km west of the site).

Figure 7: Local Topography
Source: Nature Maps (DEWNR 2018b)

2.7 Underground Infrastructure and Utilities

A search of Dial Before You Dig services was requested for the site to identify underground infrastructure networks services at the site. The information received from the respective infrastructure owners with assets in the vicinity of the site are attached as Appendix C.

3.0 PUBLIC REGISTER SEARCHES

3.1 SA EPA Public Register

A search of the South Australian Environment Protection Authority (SA EPA) Public Register was requested for the site, under Section 7(1)(b) of the Land and Business (*Sale and Conveyancing) Act (SA) 1994*, which enables the public to obtain site information relating to environmental protection. The response to the questions prescribed in Schedule 1-Contracts for sale of land or business-forms (Divisions 1 and 2) of the Land and Business (*Sale and Conveyancing) Act (SA) 1994* was provided in relation to the site. These searches (Appendix D) revealed that the SA EPA holds no records pertaining to site contamination, orders, licences, or other documentation associated with the site.

3.2 SA EPA Site Contamination Index

A search of the SA EPA's Site Contamination Index (SA EPA 2018) was undertaken to identify any site contamination notifications or reports held by the EPA in the public register, under the *Environment Protection Act 1993*, pertaining to the site. There are no notifications listed on the Register for the site. Notifications listed for nearby properties in Adelaide within close proximity to the site (< 500 m) are summarised in Table 3.

The nearest registered site with a site contamination notification (60101 – 001) for the Audit Report undertaken for 102 Waymouth Street (associated with fill material or soil importation, scrap metal recovery and animal burial). A review of the current aerial imagery indicates the site is occupied with residential apartments.

3.3 Dangerous Substance Licence Search

A search of the SafeWork SA Dangerous Substances licensing database was requested for the site.

SafeWork SA advised (response dated 13 December 2018) that there are no current or historical records for the site. A copy of the SafeWork SA Search is provided in Appendix E.

Table 3: SA EPA Site Contamination Registered Search Results

Notification no	Type	Address	Potentially contaminating activity	Distance from site
60101 - 001	Audit Report	102 Waymouth Street Adelaide SA 5000	Animal burial; Fill or soil importation; Scrap metal recovery	50 m E
61375 - 001	Audit Report	Lot 100 Waymouth Street Adelaide SA 5000	Fill or soil importation; Motor vehicle repair or maintenance; Printing works; Service stations; Transport depots or loading sites	
10044 - 002	Pre 1 July 2009 Audit Report	Cnr Currie Street & Light Square Adelaide SA 5000	Not recorded	120-220 m NW
60934	Audit Termination	142-184 Franklin Street Adelaide SA 5000	Not recorded	250 m SW
14295	Pre 1 July 2009 Audit Termination	85-129 Franklin Street Adelaide SA 5000	Not recorded	300 m SE
61517	Audit Notification	186-190 Franklin Street Adelaide SA 5000	Fill or soil importation	350 m SW
61352 - 001	Audit Report	Lots 1, 201 & 186-190 Franklin Street & Lots 45 & 46 Mellor Street Adelaide SA 5000	Fill or soil importation; Listed Substances (storage)	350 m SW
61360 - 01	S83A Notification	224-228 Waymouth Street Adelaide SA 5000	Motor vehicle repair or maintenance	350 m W
61874 - 01	S83A Notification	58 Grote Street Adelaide SA 5000	Not recorded	350 m SE
16155	Pre 1 July 2009 Audit Termination	Cnr Waymouth & Crowther Streets Adelaide SA 5000	Not recorded	380 m W
18355	109 Notification	Lot 200 Ranelagh Street, Portion of Lots 100 & 203 Franklin Street Adelaide SA 5000	Not recorded	400 m SW
61519 - 001	Audit Report	231-241 Waymouth Street And 17 Crowther Street Adelaide SA 5000	Dry cleaning; Motor vehicle repair or maintenance	400 m SW
60079	Audit Termination		Not recorded	
61623 - 01	S83A Notification	231-235 & 237-241 Waymouth Street And 17 Crowther Street Adelaide SA 5000	Motor vehicle repair or maintenance	
12410 - 001	Pre 1 July 2009 Audit Report	Southern Part Allotment 501, DP 46982 Fenn Place Adelaide SA 5000	Not recorded	450 m NW
17255 - 001	Pre 1 July 2009 Audit Report	Lot 100, D75675 Franklin Street Adelaide SA 5000	Not recorded	
60418 - 01	S83A Notification	Franklin Street Adelaide SA 5000	Listed Substances (storage)	

4.0 HISTORICAL INFORMATION

4.1 Ownership History

Historical Certificates of Titles (CTs) were viewed using the South Australian Integrated Land Information System (SAILIS – DEWNR 2018c). Historical Titles are provided in Appendix A.

The site was historically divided by a private road running east to west through the site. The northern portion of the site was first issued to an Adelaide Wool broker in 1900 (see left extract in Figure 8), and was privately owned until 1966, when it was transferred to McPherson's Limited in 1966.

The southern portion of the site was subdivided into three separate allotments and was occupied by various private owners between 1898 to 1922. Occupants included an Ironworker (Thomas Dawson) and his wife (1989/1900), J Dawson and Sons Limited (1913) and leases to William Norman (1917) and later Norman Machinery Limited.

Between 1922 and 1923, McPherson's Pty Ltd acquired the southern portion of land encompassing the site (see right extract in Figure 8).

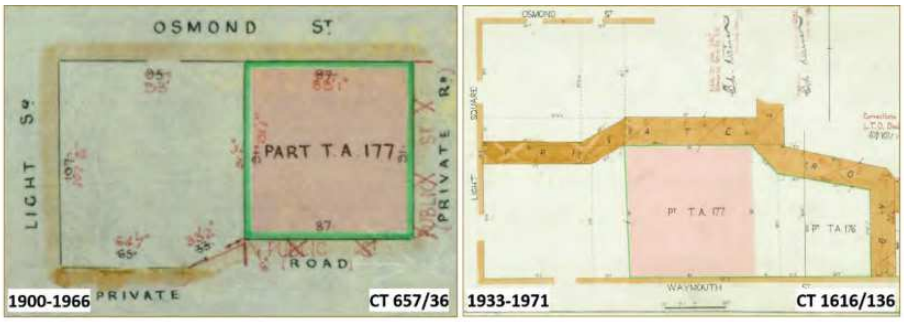


Figure 8: CT Extracts of Northern Portion (left) and Southern Portion (right) of the site
Source: SAILIS

By 1971, McPherson's Limited had acquired a large portion of land encompassing the site and in 1971, the area was subdivided, and the site was transferred to A. V. Vennings Industries (Australia) Limited under a separate CT (see Figure 9).

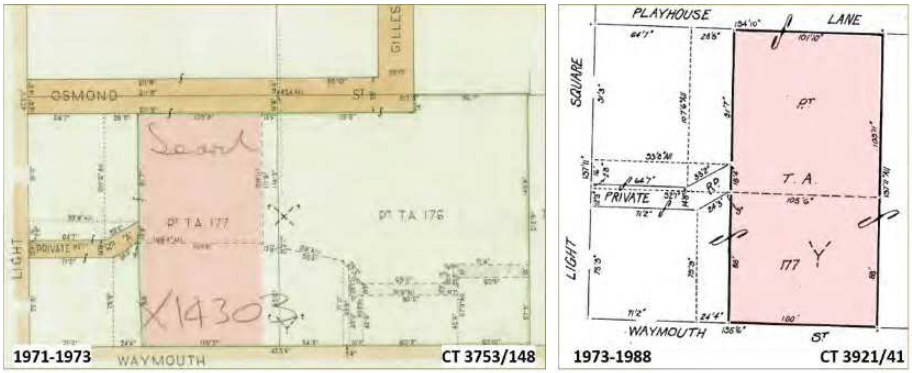


Figure 9: CT Extracts of the site between 1971 and 1973
Source: SAILIS

Subsequently, 132 Waymouth Street Pty Ltd gained ownership of the site until 1979, during which time it was leased the site to Guardian Trust Company Pty Ltd (commencing 1975 and surrendered in 1988).

Peatway Management Pty Ltd acquired ownership of the site in 1979, and successive transfers occurred to Scarborough Pty Ltd (1988), The Law Society of South Australia (1989) and Beneficial Finance Corporation Limited (1989) who then leased the site to Connell Wagner (SA) Pty Ltd between 1989 and 1996.

In 2001, the site was transferred to James Victor Mesnil who leased the site to The Law Society of South Australia. By 2013, the Goldfinger Casino Pty Ltd gained ownership of the site and in 2017, the site was leased to Built Environs Pty Ltd. In 2018, The Trust Company (Australia) Ltd acquired the site and remain in possession under the current CT (5610/549).

4.2 Review of Historical Imagery

The results of the ownership history research (Section 3.1) have identified various owners of the land prior to the 1920s. Between 1923 and 1966, the site was occupied McPherson's Pty Ltd (later becoming McPherson's Limited), until 1971.

A 1924 and 1925 photograph of the Waymouth Street Frontage (Photograph 1) shows the facade of McPherson's Iron and Machinery Merchants (opposite Cannon Street) and a two-storey bluestone building. In the 1926 photograph, McPherson's are seen to have occupied the adjacent allotment to the west (which has undergone alterations, see Photograph 1). By 1934, McPherson's had occupied the surrounding allotments (Photograph 2).

Photograph 1: Waymouth Street frontage, Adelaide, north side, 1924-1926.
Source: State Library of South Australia (Ref B:2243, B 2553 and 3425)

Photograph 2: McPherson's building, Waymouth Street, north side, west corner of Gilles Arcade, January 9th 1934
Source: State Library of South Australia (Ref B:6395)

Aerial Photographs were reviewed from 1949 to the present. Selected extracts are provided in Appendix F, with approximate site locations outlined in red.

In the 1949, 1959 and 1968 aerial photograph, the private road is seen to be dividing the site running east to west. A private road (Gilles Arcade) is also seen to run along the eastern boundary of the of the southern portion of the site, connecting Playhouse Lane and Waymouth Street.

Three attached buildings are situated along the Waymouth Street frontage and one main building occupies the northern portion of the site (north of the private road).

In 1971, McPherson's Limited had acquired a large portion of land (between Playhouse Lane and Waymouth Street, see Figure 9) and in 1971, the area was subdivided and the site was transferred to A. V. Vennings Industries.

A review of the 1974 aerial photograph indicates the site had been redeveloped since the 1968 aerial photograph, and in the 1979 aerial photograph, the existing site building is visible. The private road is seen to terminate at the western boundary of the site and the adjacent building to the west was demolished. A review of the 1989 aerial photograph indicates the site appears relatively unchanged and appears in its current disposition.

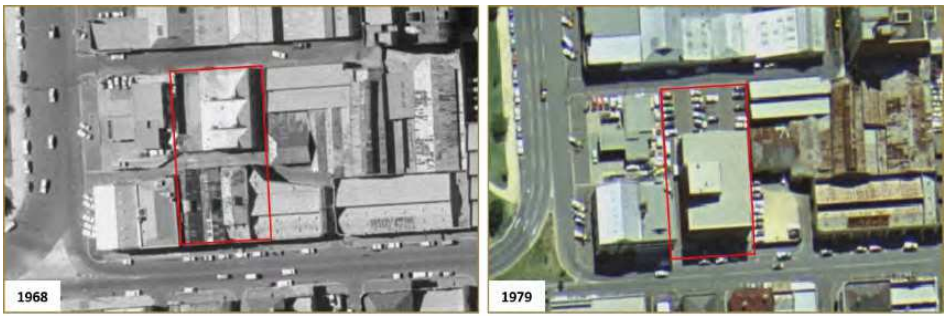


Figure 10: Extract Historical Aerial Imagery 1968 and 1979
Source: MapFinder

A review of the 1989 aerial photograph, indicates the adjacent allotment to the north west of the site was redeveloped. By 1999, the commercial carpark to the east of the site had been constructed.

In the 2005 aerial photograph, two smaller structures can be seen adjacent the rear of the main building (potentially previously obscured by the main building). A review of Google Street View indicates in 2007 there was one structure adjacent the main building (two pad mounted Transformers).

Multiple properties to the east of the site had continued to be removed and by 2010, the adjacent allotment was clear of all site buildings and utilised as a carpark. The development of the U2 on Waymouth apartment building to the east of the site commenced in 2017 and is visible in the current aerial photograph.

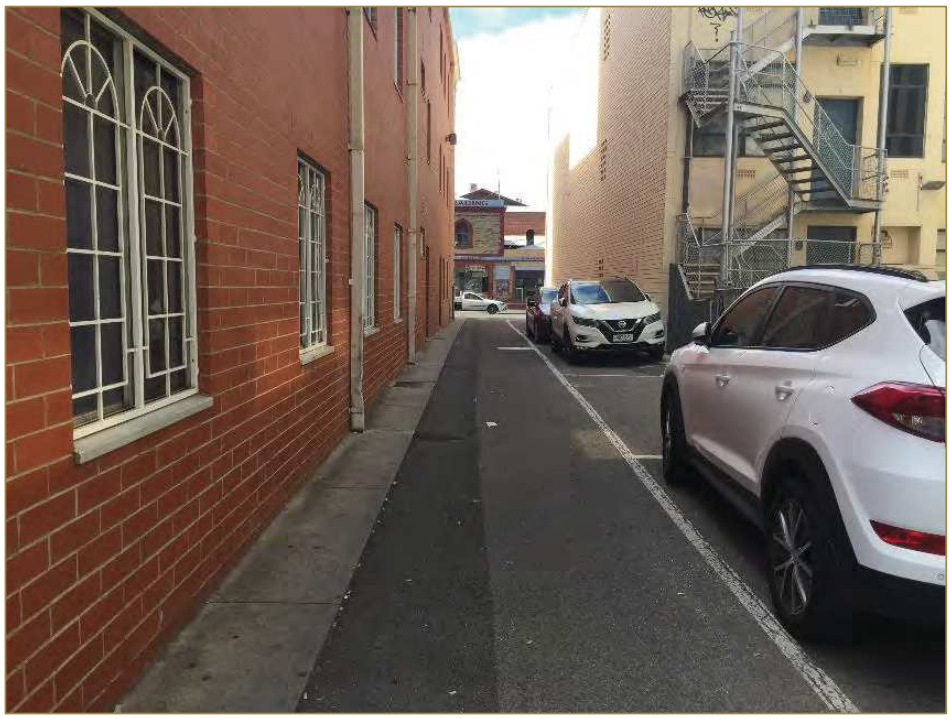
5.0 SITE INSPECTION

A site inspection was conducted by an Agon Environmental Scientist. The site comprised one main three-story building, while the remainder of the site is disposed as a carpark and landscaped areas. Entry to the site is via Waymouth Street into the south western end of the site and via Playhouse Lane (rear of the property). Two pad mounted Electrical Transformers were located in the rear car park next to the main building. Some minor surface staining was observed around the transformers.

Photograph 3: Waymouth Street Frontage (facing north east)

Photograph 4: Main Building front landscaped areas (facing north east)

Photograph 5: Eastern Boundary of site via Waymouth Street (facing north)



Photograph 6: Western Boundary of site via rear carpark (facing south)

Photograph 7: Rear Carpark (facing south-east)

Photograph 8: Rear Carpark (facing south west)

Photograph 9: Electrical Transformers

Note: Minor surface staining observed on the underlying slab. Cuts and patching of bitumen adjacent the transformer pad.

6.0 POTENTIAL SOURCES OF CONTAMINATION

Based on identified historical and current land uses on and near the site, Potentially Contaminating Activities (PCAs) and Potential Contaminants of Concern (PCOCs) are described in Table 4.

Table 4: Potentially Contaminating Activities and Potential Contaminants of Concern

Potentially Contaminating Activity (PCA)	Potential Contaminants of Concern (PCOCs) Area of Site Potentially Impacted by PCA/PCOC Other Comments	Potential Significance
Former Site Operations (McPherson Limited Ironworkers)	**Metals, Monocyclic Aromatic Hydrocarbon (BTEX), Polycyclic aromatic hydrocarbons (PAH), solvents, Total Recoverable Hydrocarbons (TRH), PCB.** Whole of site. The historical ownership and occupancy at the site has been associated with McPherson's Iron and Machinery Merchants (McPherson's Limited) between 1922 and 1971. The potential exists for contamination impacts to site soils, including furnace/ metal working waste (ash, cinders, slag).	Impacts to site soils from the activities associated with these occupants are likely to have occurred predominantly on unsealed areas. The site was redeveloped between 1969 and 1979 and may have involved removal of impacted soils. The majority of the site is currently sealed. Historical site practices may have resulted in impacts to site soils in previously unsealed areas. However, impacts are considered to present a **Low** risk to users of the site under current layout and use.
Importation of Fill	**Asbestos Containing Materials (ACM), PAH, TRH and Metals** Whole of site. Fill from unknown origin may have been imported to the site for levelling during the construction of the site buildings (beneath building slabs). Remnant debris from demolition of former onsite buildings and private road, may be present in fill. The site was redeveloped between 1968 and 1974. Anecdotal information regarding nearby properties indicates fill may be present in the area to a depths approx 4 m. SA EPA holds records for 102 Waymouth Street (associated with fill material or soil importation, scrap metal recovery and animal burial).	It is considered likely that fill of unknown origin has been imported to the site for levelling during the construction of the site buildings (beneath building slabs) The likelihood of exposure to any such impacts is considered to be **Low** under the site's current layout and use.
Migration of contaminants from neighbouring properties	**PAH, TRH** SA EPA holds does not hold any records pertaining to particulars relating to environment protection, pollution and site contamination for the site. The SA EPA does hold records for properties within the Adelaide CBD.	These activities are considered to have been undertaken on areas adjacent to the site as opposed to on the site. Any potential groundwater impacts are considered to present a **Low** risk to users of the site under the current commercial land use.
Asbestos Containing Materials	**ACM** Asbestos containing materials (e.g., bonded asbestos cement sheeting including internal walls, eaves, fascia boards; vinyl tiles). Asbestos products have been confirmed to be present within the main building with stickers identifying the presence of ACM observed on the site building.	Non- Friable ACM (**Low**) Friable ACM (**High**)
Electrical Transformer	**Polychlorinated Biphenyls (PCBs), PAH, TRH** Transformer oil containing PCBs may be present. The transformer was observed to be in moderate condition, with some minor staining observed on the underlying slab, indicating some leakage of oil from the transformer.	**Low** Impacts to site soils (if any) are likely to be highly localised.

7.0 SUMMARY AND CONCLUSIONS

The findings of the preliminary site investigation conducted by Agon have identified prior to the redevelopment and construction of the existing site building between 1968 and 1974, the site was occupied by McPherson's Limited (Iron and Machinery Merchants) from 1922 to 1971.

Agon has identified several potentially contaminating activities (PCAs) resulting from current and historical land uses, including:

- Former Site Operations (McPherson Limited);
- Importation of Fill;
- Migration of contaminants from neighbouring properties;
- Asbestos Containing Materials;
- Electrical Transformer.

The risk to site occupants from any site contamination resulting from these PCAs is considered to be low under the current commercial land uses conducted at the site (offices).

However, if the site is redeveloped, it is recommended that further environmental investigations, including soil sampling beneath the building slabs and carpark, be conducted to determine if the PCAs have caused site contamination at the property.

The presence, nature and extent of Asbestos Containing Material present in the site building should be assessed (including a review and, if required, update, of the Asbestos Register for the site) prior to any demolition and redevelopment works.

LIMITATIONS OF THIS REPORT

This report has been prepared in accordance with industry recognised standards and procedures current at the time of the work. The report presents the results of the assessment based on the quoted scope of works (unless otherwise agreed in writing) for the specific purposes of the engagement by the Client. No warranties expressed or implied are offered to any third parties and no liability will be accepted for use of this report by third parties.

The assessment of environmental and human health risk included in this report relate to the whole site as described in the report. If the site is subject to demolition works or redevelopment, the risk profile of the site will change and the conclusions of this report will no longer be valid. If the site is subject to subdivision, the risk profile of each division of the site will change and the conclusion of this report will no longer be valid.

Consideration of the aesthetic and geotechnical suitability of site soils has been excluded from this report. Aesthetic and geotechnical suitability may need to be addressed in separate assessments.

Although no onsite sources of groundwater contamination were identified during this investigation, given the regional history of land use around the site, groundwater contamination may have occurred in the vicinity of the site. Groundwater investigation was excluded from the scope of this investigation and comments in relation to potential groundwater at the site have been excluded from this report.

All information provided by third parties has been assumed to be correct and complete. Agon does not assume any liability for misrepresentation of information by third parties or for matters not visible, accessible or present on the subject site.

Opinions and judgements expressed herein are based on Agon's understanding of current regulatory standards and should not be construed as legal opinions.

No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties other than those listed above.

This report should be read in full.

REFERENCES

SMEC – SMEC Australia Pty Ltd (2014) *116-122 Waymouth Street, Adelaide, Geotechnical Investigation Report,* 25 August 2014.

DEWNR – Department of Environment, Water and Natural Resources (2018a) *Water Connect*, located at: http://www.waterconnect.sa.gov.au.

DEWNR – Department of Environment Water & Natural Resources (2018b) NatureMaps, located at: http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps

DEWNR – Department of Environment, Water and Natural Resources (2018c), *South Australian Integrated Land Information System(SAILIS)*, located at: http://www.sailis.sa.gov.au.

DPTI – Department of Planning Transport and Infrastructure (2018a) *Property Location Browser*, located at: http://www.maps.sa.gov.au/plb.

DPTI – Department of Planning Transport and Infrastructure (2018b) *Development Plan – Adelaide (City) Council Consolidated 7 June 2018.*

DSD – Department of State Development (2018) *SARIG – South Australian Resources Information Geoserver*, located at: https://sarig.pir.sa.gov.au.

Gerges, N (2006) *Overview of the hydrogeology of the Adelaide metropolitan area*. Knowledge and Information Division, Department of Water, Land and Biodiversity Conservation. June 2006.

NEPC – National Environmental Protection Council (1999) *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999, Amended 2013.*

SA EPA - South Australian Environment Protection Authority (2018) *Site Contamination Index Public Register*, located at: http://www.epa.sa.gov.au/data_and_publications/site_contamination_index/search-the-contamination-register.

SA GOV – Government of South Australia (2018) *Location SA Map Viewer,* located at: http://location.sa.gov.au/viewer/.

SLSA - State Library of South Australia (2018) *Almanacs and Directories,* located at http://images.slsa.sa.gov.au/almanacsanddirectories/.

APPENDIX A: CERTIFICATE OF TITLE

Government of South Australia
Department of Planning, Transport and Infrastructure

Product	Title Details
Date/Time	20/11/2018 09:35AM
Customer Reference	JC0326
Order ID	20181120001614
Cost	$10.20

Certificate of Title

Title Reference	CT 5610/549
Status	CURRENT
Easement	YES
Owner Number	70857341
Address for Notices	POST OFFICE BOX 1117, EDGECLIFF, NSW 2027
Area	1850M² (APPROXIMATE)

Estate Type

FEE SIMPLE

Registered Proprietor

THE TRUST COMPANY (AUSTRALIA) LTD. (ACN: 000 000 993)
OF PO BOX 1117 EDGECLIFF NSW 2027

Description of Land

ALLOTMENT 101 FILED PLAN 199658
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Last Sale Details

Dealing Reference	TRANSFER (T) 13015568
Dealing Date	06/11/2018
Sale Price	$9,275,000
Sale Type	FULL VALUE / CONSIDERATION AND WHOLE OF LAND

Constraints

Encumbrances

Dealing Type	Dealing Number	Beneficiary
LEASE	12787437	BUILT ENVIRONS PTY. LTD. (ACN: 008 125 111)

Stoppers

NIL

Valuation Numbers

Valuation Number	Status	Property Location Address
0201035509	CURRENT	124 WAYMOUTH STREET, ADELAIDE, SA 5000

Notations

Dealings Affecting Title

NIL

Notations on Plan

NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G244/1995
PLAN FOR LEASE PURPOSES VIDE G317/1990
PLAN FOR LEASE PURPOSES VIDE G799/2000
APPROVED FILED PLAN FOR LEASE PURPOSES FX252766
APPROVED FILED PLAN FOR LEASE PURPOSES FX53460
APPROVED FX27573

Administrative Interests

NIL

Certificate of Title

Title Reference: CT 5610/549

Status: CURRENT

Parent Title(s): CT 4274/719

Dealing(s) Creating Title: CONVERTED TITLE

Title Issued: 04/01/1999

Edition: 9

Dealings

Lodgement Date	Completion Date	Dealing Number	Dealing Type	Dealing Status	Details
06/11/2018	19/11/2018	13015568	TRANSFER	REGISTERED	THE TRUST COMPANY (AUSTRALIA) LTD. (ACN: 000 000 993)
06/11/2018	19/11/2018	13015567	DISCHARGE OF MORTGAGE	REGISTERED	11878477
06/11/2018	19/11/2018	13015566	WITHDRAWAL OF CAVEAT	REGISTERED	12985466
10/09/2018	12/09/2018	12985466	CAVEAT	REGISTERED	THE TRUST COMPANY (AUSTRALIA) LTD. (ACN: 000 000 993)
30/08/2017	11/09/2017	12787437	LEASE	REGISTERED	BUILT ENVIRONS PTY. LTD. (ACN: 008 125 111)
15/01/2013	07/02/2013	11878477	MORTGAGE	REGISTERED	AUSTRALIA & NEW ZEALAND BANKING GROUP LTD.
15/01/2013	07/02/2013	11878476	TRANSFER	REGISTERED	GOLDFINGER CASINO PTY. LTD. (ACN: 066 315 026)
15/01/2013	07/02/2013	11878475	DISCHARGE OF MORTGAGE	REGISTERED	9016534
19/01/2010	09/02/2010	11329878	LEASE	REGISTERED	THE LAW SOCIETY OF SOUTH AUSTRALIA
15/06/2009	29/06/2009	11196754	DISCHARGE OF MORTGAGE	REGISTERED	9541152
18/08/2005	30/08/2005	10286380	EXTENSION OF LEASE	REGISTERED	9016533
10/02/2005	28/02/2005	10164429	EXTENSION OF LEASE	REGISTERED	9016533
10/02/2005	28/02/2005	10164428	TRANSFER OF MORTGAGE	REGISTERED	EQUITY INVESTMENT GROUP LTD. 9541152
05/03/2003	17/03/2003	9541152	MORTGAGE	REGISTERED	EQUITY INVESTMENT BANK LTD.

Lodgement Date	Completion Date	Dealing Number	Dealing Type	Dealing Status	Details
20/12/2000	22/01/2001	9016534	MORTGAGE	REGISTERED	ST.GEORGE BANK LTD. (ACN: 055 513 070)
20/12/2000	22/01/2001	9016533	LEASE	REGISTERED	THE LAW SOCIETY OF SOUTH AUSTRALIA
20/12/2000	22/01/2001	9016532	TRANSFER	REGISTERED	JAMES VICTOR MESNIL
20/12/2000	22/01/2001	9016531	DISCHARGE OF MORTGAGE	REGISTERED	6777712
27/03/1996	25/06/1996	8088521	LEASE	REGISTERED	
31/07/1989	27/09/1989	6777712	MORTGAGE	REGISTERED	

ORIGINAL CERTIFICATE OF TITLE

South Australia

Register Book,
Volume 4274 Folio 719

(Comprising 2 Sheets)

New Certificate for the balance of the Land in Vol.3921 Folio 41

PEATWAY MANAGEMENT PROPRIETARY LIMITED of 124 Waymouth Street Adelaide 5000 is the proprietor of an estate in fee simple subject nevertheless to such encumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in PORTION OF TOWN ACRE 177 CITY OF ADELAIDE HUNDRED OF ADELAIDE delineated on the plan hereon by bold black lines SUBJECT to the easements to the Minister of Water Resouces created by Transfers 6162005 and 6162006 in and over that portion marked A hereon TOGETHER with a right of way over the land marked B hereon appurtenant only to that portion marked Y hereon

In witness whereof I have signed my name and affixed my seal this 12th day of June 1986

Signed the 12th day of June 1986, in the presence of L. Heathwood

Acting Deputy Registrar-General

REGISTRAR-GENERAL SOUTH AUSTRALIA

F.P. 27573 APPROVED

G.R.O. PLAN No. 317 of 1990
FOR LEASING PURPOSES DEPOSITED OVER WHOLE/~~PORTION~~ OF THE WITHIN LAND.

LEASE 3744972 to GUARDIAN TRUST COMPANY PROPRIETARY LIMITED of the within land Term of 20 years commencing on the 1.2.1975 and ending on 31.1.1995 Produced 20.5.1975 at 2.05 p.m.

MORTGAGE 4548043 to NATIONAL AUSTRALIA BANK LIMITED Produced 2.5.1980 at 10.50 a.m.

SURRENDER of Lease 3744972 vide 6501390 Produced 18.3.1988 at 14:00

DISCHARGE of Mortgage 4548043 vide 6501391 Produced 18.3.1988 at 14:00

TRANSFER 6501392 to SCARBOROUGH PTY.LTD. of 57 Wyatt Street Adelaide 5000 of the within land Produced 18.3.1988 at 14:00

MORTGAGE 6501393 to AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED Produced 18.3.1988 at 14:00

CAVEAT 6654504 lodged by BENEFICIAL FINANCE CORPORATION LIMITED over the within land Produced 15.12.1988 at 14:35

MORTGAGE 6699735 to BENEFICIAL FINANCE CORPORATION LIMITED *SUBJECT TO CAVEAT 6654504* Produced 10.3.1989 at 12:45

OVER

P.A.4523763
The within land is discharged from Mortgage 6501393 vide 6777708 Produced 31.7.1989 at 15:30

CAVEAT 6654504 has been withdrawn vide 6777709 Produced 31.7.1989 at 15:30

P.A.6509744
The within land is discharged from Mortgage 6699735 vide 6777710 Produced 31.7.1989 at 15:30

TRANSFER 6777711 to THE LAW SOCIETY OF SOUTH AUSTRALIA of 124-132 Waymouth Street Adelaide 5000 of the within land Produced 31.7.1989 at 15:30

MORTGAGE 6777712 to STATE BANK OF SOUTH AUSTRALIA Produced 31.7.1989 at 15:30

MORTGAGE 6777713 to SCARBOROUGH PTY. LTD. Produced 31.7.1989 at 15:30

TRANSFER 6777714 to BENEFICIAL FINANCE CORPORATION LIMITED of 33 Franklin Street Adelaide 5000 of the within Mortgage 6777713 Produced 31.7.1989 at 15:30

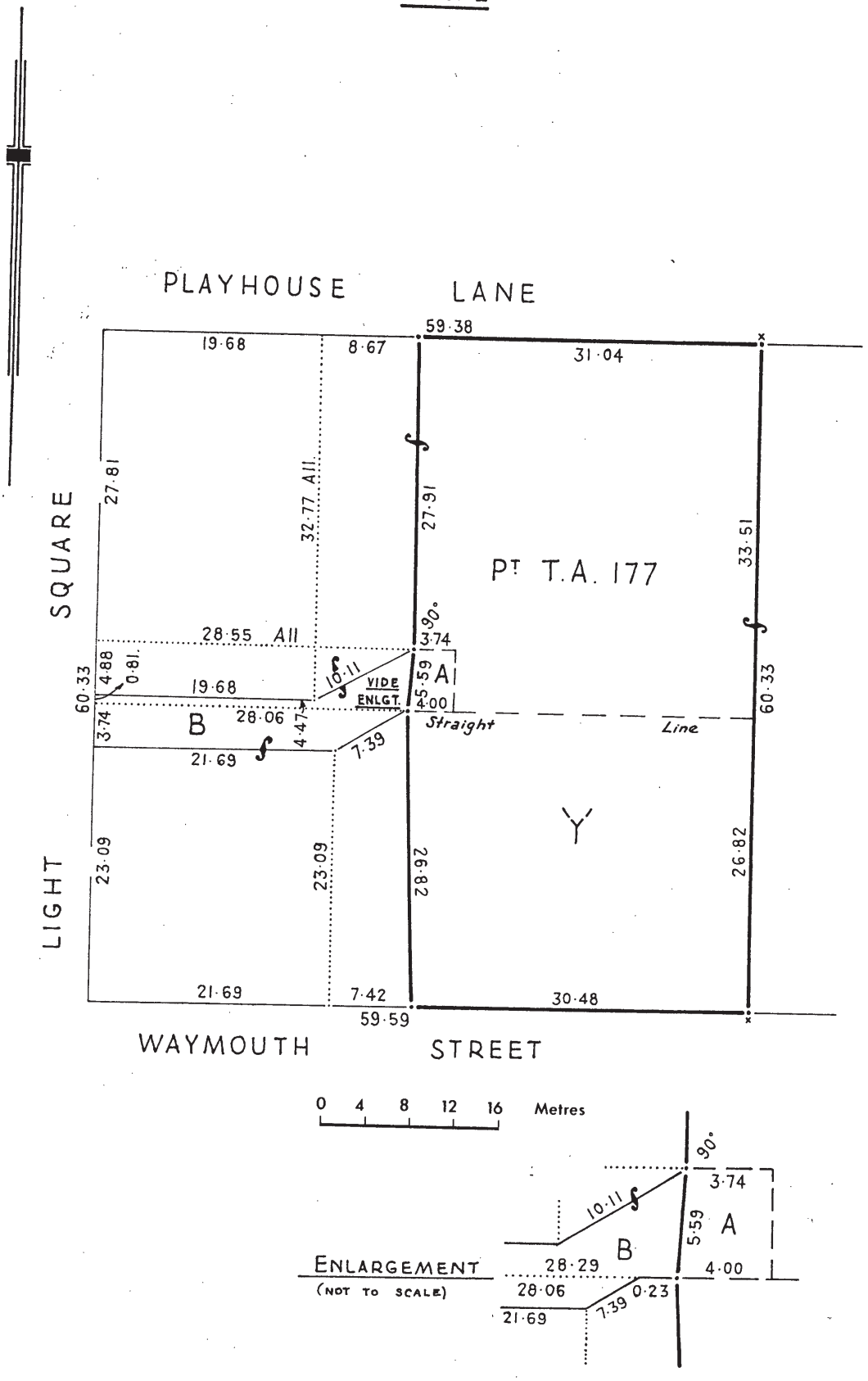
P.A. 6509744
The within land is discharged from Mortgage 6777713 vide 6845634 Produced 20.12.1989 at 11:40 (Dup C.T. ~~not~~ Prod)
WR PRO RG 18.1.1991

LEASE 7004016 to CONNELL WAGNER (SA) PTY. LTD. of portion of the within land (being "Area H" first and second floors in GRO Plan 317/1990) Term of five years commencing on 1.12.1989 and expiring at midnight on 30.11.1994 Produced 29.10.1990 at 11:05

LEASE 8088521 to CONNELL WAGNER PTY. LTD. of portion of the within land (being area marked H in GRO Plan 244/1995 and area marked H Second Floor in GRO Plan 317/1990) Term commencing on 1.12.1994 expiring on 30.11.1999 Produced 27.3.1996 at 11:25

CANCELLED
CONVERTED TO A COMPUTERISED TITLE

Sheet 2


PLAYHOUSE LANE
SQUARE
LIGHT
WAYMOUTH STREET
59·38
19·68
8·67
31·04
27·81
32·77 All
27·91
33·51
Pt T.A. 177
28·55 All
90°
3·74
10·11
VIDE ENLGT
5·59
A
4·00
60·33
4·88
0·81
19·68
B
28·06
4·47
3·74
21·69
7·39
Straight Line
60·33
23·09
23·09
28·92
26·82
21·69
7·42
30·48
59·59
0 4 8 12 16 Metres
ENLARGEMENT
(NOT TO SCALE)
90°
3·74
10·11
5·59
A
B
28·29
4·00
28·06
0·23
21·69
7·39

South Australia

(CERTIFICATE OF TITLE)

Register Book,

Vol. 3921 *Folio* 41

Pursuant to Memorandum of Transfer No. 3257426 Registered on Vol. 3796 Folio 22

A. V. JENNINGS INDUSTRIES (AUSTRALIA) LIMITED of 1278 South Road Clovelly Park 5042

is the proprietor of an estate in fee simple

subject nevertheless to such encumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in THAT PIECE of land situated in the CITY OF ADELAIDE being PORTION OF THE TOWN ACRE NOD. 177 more particularly delineated and bounded as appears in the plan in the margin hereof by bold black lines TOGETHER with a right of way over the Private Road as delineated in the said plan appurtenant only to that portion of the said land marked Y in the said plan

Which said ~~Section~~ Town Acre is delineated in the Public Map of the said City deposited in the Land Office at Adelaide.

In witness whereof I have hereunto signed my name and affixed my seal this 11th day of April 1973

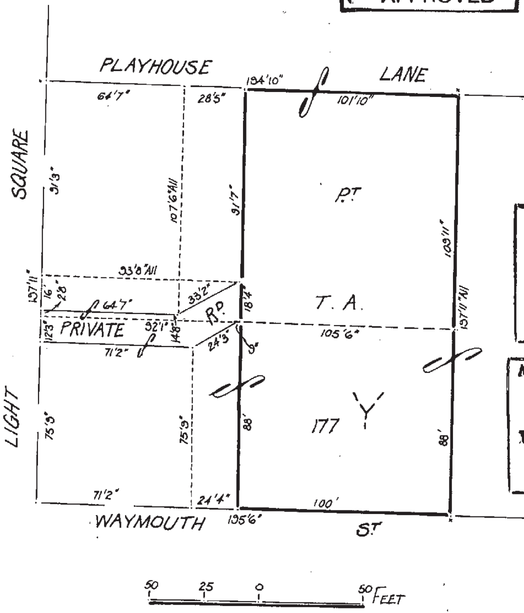
Signed the 11th day of April 1973, in the presence of [signature]

[signature] C. L. Nairn

Deputy Registrar-General

F.P. 22877 APPROVED

REGISTRAR-GENERAL SOUTH AUSTRALIA



~~T 3257427~~

TRANSFER No. 3257427 To 132 Waymouth Street Pty. Ltd. of 132 Waymouth Street Adelaide OF THE WITHIN LAND PRODUCED 5/1/1971 AT 11:15 A.M.
D. G. Randell pro DEP. REG. GEN.

MORTGAGE No. 3439368 TO THE BANK OF ADELAIDE SAVINGS BANK LIMITED PRODUCED 2.4 1973 AT 2.20 pm
[signature] DEP. REG. GEN.

MORTGAGE No. 3439369 TO THE BANK OF ADELAIDE. PRODUCED 2.4 1973 AT 2.20 pm
[signature] DEP. REG. GEN.

~~L 3744972~~

LEASE No. 3744972 To Guardian Trust Company Proprietary Limited OF THE WITHIN LAND. TERM — of 20 years commencing on the 1.2.1975 and ending on 31.1.1995
PRODUCED 20.5 1975 AT 2.05pm

VOL. 3921 FOL. 41

~~D4481746 D4481747 D4481748~~
~~M4481749 M4481750~~

TRANSFER No. 4481746 To
Peatway Management Pty. Ltd. of 12a Waymouth Street Adelaide 5000

OF THE WITHIN LAND. PRODUCED 11.12.1979 at 11.40 am

REGISTRAR-GENERAL SOUTH AUSTRALIA

DISCHARGE OF MORTGAGE No. 3439368
VIDE 4481747 PRODUCED 11.12.1979 at 11.40 am

REGISTRAR-GENERAL SOUTH AUSTRALIA

DISCHARGE OF MORTGAGE No. 3439369
VIDE 4481748 PRODUCED 11.12.1979 at 11.40 am

REGISTRAR-GENERAL SOUTH AUSTRALIA

MORTGAGE No. 4481749 TO
THE BANK OF ADELAIDE SAVINGS BANK LIMITED
PRODUCED 11.12.1979 AT 11.40 am

REGISTRAR-GENERAL SOUTH AUSTRALIA

MORTGAGE No. 4481750

TO THE BANK OF ADELAIDE. PRODUCED 11.12.1979 AT 11.40 am

REGISTRAR-GENERAL SOUTH AUSTRALIA

~~D4548041 D4548042 D4548043~~

DISCHARGE OF MORTGAGE No. 4481749 VIDE No. 4548041
PRODUCED 2.5.1980 AT 10.50 a.M.

REGISTRAR-GENERAL SOUTH AUSTRALIA

DISCHARGE OF MORTGAGE No. 4481750 VIDE No. 4548042
PRODUCED 2.5.1980 AT 10.50 a.M.

REGISTRAR-GENERAL SOUTH AUSTRALIA

MORTGAGE No. 4548043. To
The Commercial Banking Company of Sydney Limited
PRODUCED 2.5.1980 AT 10.50 am.

REGISTRAR-GENERAL SOUTH AUSTRALIA

~~CA6162003 PL6162004 IG6162005 TG6162006~~

P/A 6129631

CHANGE OF NAME No. 6162003 THE NAME OF THE WITHIN COMPANY IS CHANGED ~~TO~~ from The Commercial Banking Company of Sydney Limited to National Australia Bank Limited of 22-28 King William Street Adelaide 5000
PRODUCED AT 7.3.1986 11.10.

REGISTRAR-GENERAL SOUTH AUSTRALIA

Easements over portion

SURRENDER OF Lease 3744972 ~~No.~~ as regards of the within land VIDE No. 6162004 PRODUCED 7.3.1986 AT 11.10

REGISTRAR-GENERAL SOUTH AUSTRALIA

TRANSFER No. 6162005 from Peatway Management Pty. Ltd. and National Australia Bank Limited as Mortgagee to Minister of Water Resources of an EASEMENT OVER PORTION OF THE WITHIN LAND. PRODUCED 7.3.1986 AT 11.10

CANCELLED AS REGARDS ABOVE LAND AND NEW C.T. ISSUED VOL. 4274 FOL. 717

REGISTRAR-GENERAL SOUTH AUSTRALIA

TRANSFER No. 6162006 from Peatway Management Pty. Ltd. and National Australia Bank Limited as Mortgagee to Minister of Water Resources of an EASEMENT OVER PORTION OF THE WITHIN LAND. PRODUCED 7.3.1986 AT 11.10

CANCELLED AS REGARDS ABOVE LAND AND NEW C.T. ISSUED VOL. 4274 FOL. 718

REGISTRAR-GENERAL SOUTH AUSTRALIA

CANCELLED
AND BALANCE CERTIFICATE OF TITLE ISSUED VIDE 6162006 VOL. 4274 FOL. 719

REGISTRAR-GENERAL SOUTH AUSTRALIA

South Australia

(CERTIFICATE OF TITLE)

Register Book,

Vol. 3796 Folio 22

Pursuant to Memoranda of Transfer Nod.3216562 and 3216566 Registered on Vol.1318 Folio 106 and Vol.1557 Folio 174 and New Certificate of Title for the whole of the land in Vol.3753 Folio 148

McPHERSON'S LIMITED of 116 Waymouth Street Adelaide 5000

is the proprietor of an estate in fee simple

subject nevertheless to such encumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in T H A T piece of land situated in the CITY OF ADELAIDE, being PORTION OF THE TOWN ACRE S numbered 176 and 177 more particularly delineated and bounded as appears in the plan in the margin hereof and therein colored green TOGETHER with a right of way over the Private Road A as delineated in the said plan and therein colored brown appurtenant to that portion of the said land marked X and Y in the said plan TOGETHER ALSO with a right of way over PLAYHOUSE LANE ~~Osmond Street~~ and Gilles Arcade as delineated in the said plan and therein colored brown appurtenant to that portion of the said land marked X in the said plan

which said Town Acre is delineated in the public map of the said City deposited in the Land Office at Adelaide.

In witness whereof I have hereunto signed my name and affixed my seal this 30th day of September 1971

Signed the 30th day of September 1971, in the presence of [signature]

[signature] Registrar-General

REGISTRAR-GENERAL SOUTH AUSTRALIA

Caveat No.3233746 lodged by A.V. Jennings Industries (Australia) Limited over the within land Produced 20.8.1971 at 2.25 p.m. (Including other land)

[signature] Reg.Genl.

~~RAIX 3257425 T3257426~~ T3257427

as regards portion of the within Part Town Acre 177 Together with Right of Way over Private Road

Caveat No. 3233746 HAS BEEN WITHDRAWN VIDE No. 3257425 PRODUCED 5-11. 1971 AT 11.15am

[signature] DEP. REG. GEN.

TRANSFER No. 3257426 to A. V. Jennings Industries (Australia) Limited of portion OF THE WITHIN Part Town Acre 177 together with Right of way over Private Road PRODUCED 5.11.1971 AT 11.15am

[signature] DEP. REG. GEN.

CANCELLED AS REGARDS ABOVE LAND AND NEW C.T. ISSUED VOL. 3921 FOL. 41

[signature] DEP. REG. GEN.

OVER

M 3439368 M3439369

CANCELLED
AND Balance CERTIFICATE OF TITLE
ISSUED ~~VIDE~~ VOL. 3921 FOL. 42.
K. London DEP. REG. GEN.

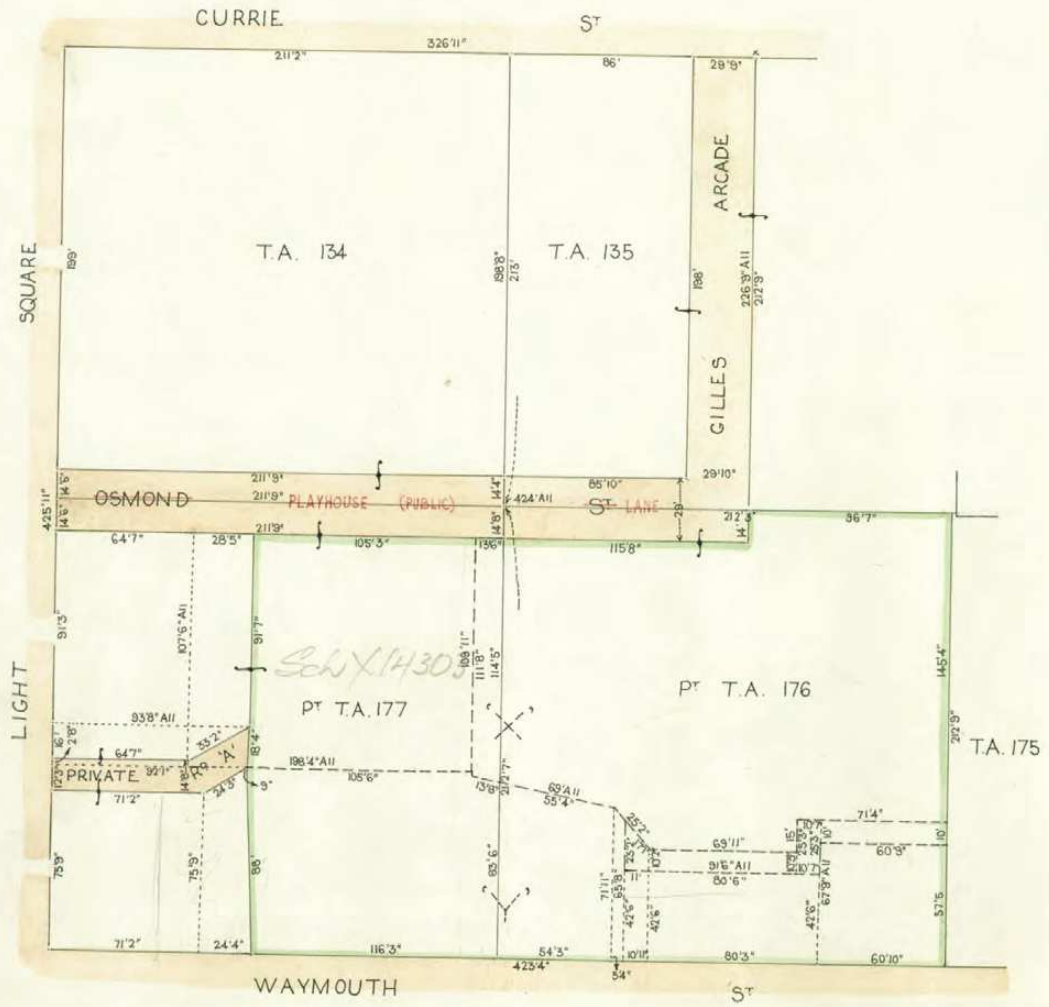
SHEET No. 2 ATTACHED

VOL 3796 FOL 22

SHEET NO. 2

PLAYHOUSE (PUBLIC) LANE VIDE No^T 3250855 AND MEMORIAL No^181 B^K 536

DEP. REG. GEN.



50 25 0 50 FT

CB

South Australia (CERTIFICATE OF TITLE)

Register Book,

Vol. 3753 *Folio* 148

New Certificate of Title for the whole of the Land in Vol.657 Folio 36 Vol.1616 Folio 136 and Vol.1683 Folio 92 and issued pursuant to Section 20a of the Roads (Opening and Closing) Act 1932-1946

McPHERSON'S LIMITED of 116 Waymouth Street Adelaide 5000

is the proprietor of an estate in fee simple

subject nevertheless to such encumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in THAT piece of land situated in the CITY OF ADELAIDE, being PORTION OF THE TOWN ACRES numbered 176 and 177 more particularly delineated and bounded as appears in the plan in the margin hereof and therein colored green TOGETHER with a right of way over the Private Road A as delineated in the said plan and therein colored brown appurtenant to that portion of the said land marked Y in the said plan TOGETHER ALSO with a right of way over Osmond Street and Gilles Arcade as delineated in the said plan and therein colored brown appurtenant to that portion of the said land marked X in the said plan SUBJECT nevertheless to such rights of way as may exist over portion of the said land being formerly closed roads comprised in Road Tracing No. 6097

which said Town Acres are delineated in the public map of the said City deposited in the Land Office at Adelaide.

In witness whereof I have hereunto signed my name and affixed my seal this 24th day of February 1971

Signed the 24th day of February 1971, in the presence of A. Addison

Registrar-General

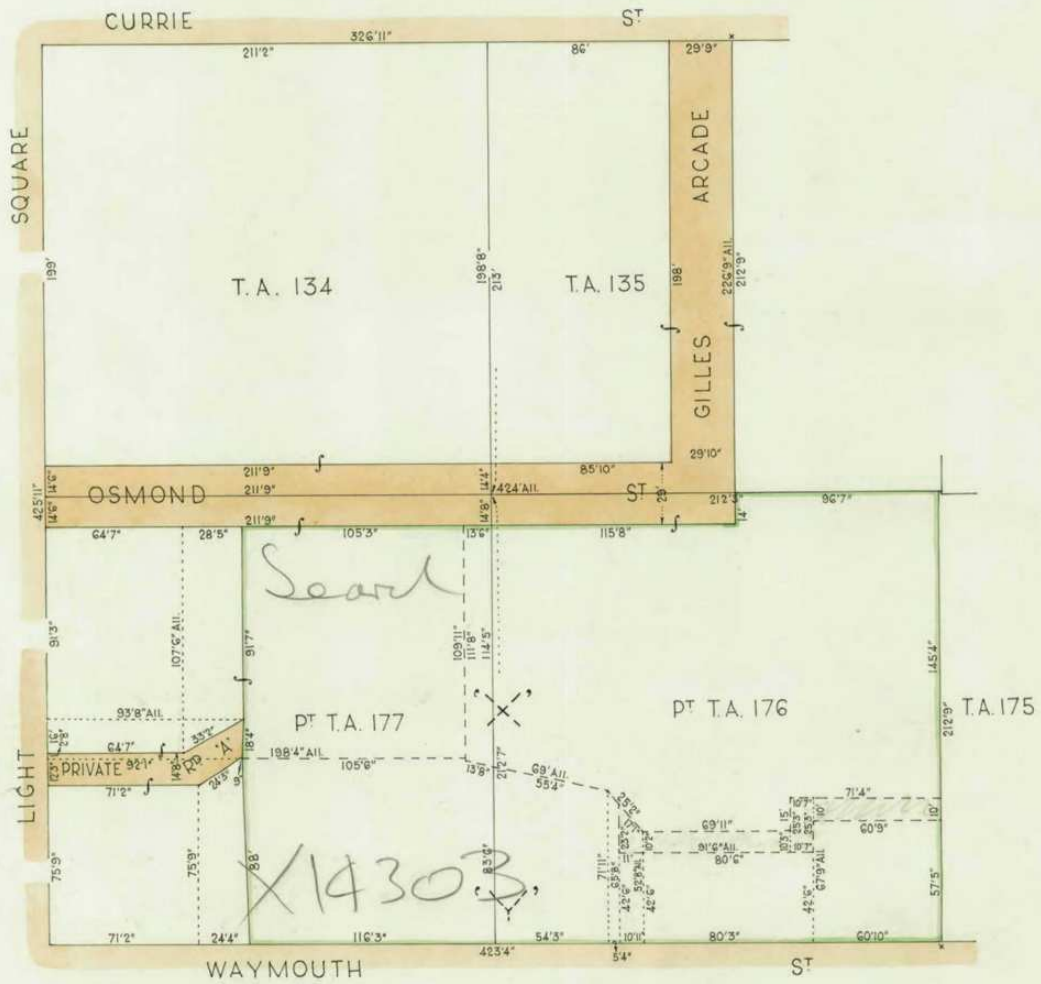
REGISTRAR-GENERAL SOUTH AUSTRALIA

CAVEAT No. 323374 6 LODGED BY A. V. Jennings Industries Australia Limited OVER THE WITHIN LAND. PRODUCED 20-8-1971 AT 2-25 (INCLUDING OTHER LAND) K. London DEP. REG. GEN.

CANCELLED AND New CERTIFICATE OF TITLE ISSUED VIDE 3216562 & VOL. 3796 FOL. 22 3216566 DEP. REG. GEN.

Survey Vide Search X 14503

SHEET No. 2 ATTACHED


CURRIE ST
SQUARE
ARCADE
GILLES
T.A. 134
T.A. 135
OSMOND ST
LIGHT
PRIVATE
Pt T.A. 177
Pt T.A. 176
T.A. 175
WAYMOUTH ST
50 25 0 50 FT

South Australia

(CERTIFICATE OF TITLE.)

Register Book,

Vol. 666 Folio 118

Pursuant to Memorandum of Transfer No 358069.

Thomas Dawson of Adelaide Ironworker

is the proprietor of an estate in fee simple

subject nevertheless to such incumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in That piece of land situated in the CITY OF ADELAIDE, being PORTION OF THE TOWN ACRE numbered 177 and bounded as appears in the plan in the margin hereof and therein colored green: Which said piece of land contains eight perches or thereabouts and measures as well on the northerly side next a private road as on the southerly side next Waymouth Street twenty five feet and six inches or thereabouts and as well on the easterly side next other part of the said Acre ~~eighty seven feet and six inches or thereabouts and~~ as on the westerly side next other part of the said Acre eighty eight feet or thereabouts and is more particularly delineated in the said plan Together with a right of way over the said private road as more particularly delineated in the said plan and therein colored brown

Reg. Genl 20-6-33

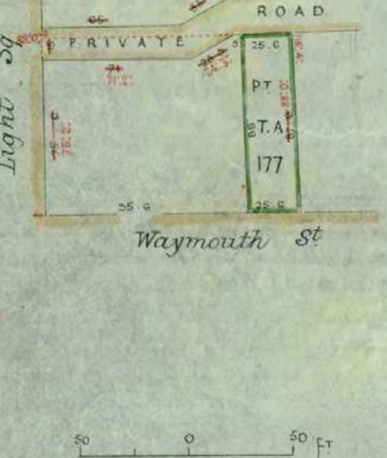
which said Town Acre is delineated in the public map of the said city deposited in the office of the Surveyor-General.

In witness whereof I have hereunto signed my name and affixed my seal this Twenty eighth day of September one thousand ~~eight hundred and~~ nine hundred

Signed the 28th day of September 1900 in the presence of Vernon H Edwards

E L Heath
Dep Registrar-General.

Corrections in red vide L.T.O. Docket 373/33
F. Dumas
Reg. Genl 20-6-33



Transfer No 563859 from Thomas Dawson to James Wallace Dawson David Miller Dawson and William Miller Dawson all of Adelaide Plumbers of an estate in fee simple in the within land as Tenants in Common Produced for registration the 19 day of June 1912 at 11.15am
Dep Regr Genl

Encumbrance No 563860 (Including other land) from James Wallace Dawson David Miller Dawson and William Miller Dawson to Thomas Dawson and Alison Dawson and the survivor of them Produced for registration the 19 day of June 1912 at 11.15am
Dep Regr Genl

Pursuant to Application No 593398 Alice Dawson of Gilbert Street Adelaide Widow is

in one undivided third part

PROPRIETOR OF AN ESTATE IN FEE SIMPLE IN THE WITHIN LAND AS THE ADMINISTRATRIX OF THE ESTATE OF THE ABOVE NAMED James Wallace Dawson WHO DIED ON THE 12 DAY OF May 1913 INTESTATE AS APPEARS BY LETTERS OF ADMINISTRATION DATED THE 20 DAY OF June 1913 PRODUCED FOR REGISTRATION THE 22 DAY OF July 1913 AT 12.40 pm

Winifred anthony
DEP. REG. GENL.

Transfer No 593399 from Alice Dawson to the above named David Miller Dawson and William Miller Dawson of an estate in fee simple in one undivided third part in the within land as tenants in common Produced for registration the 22 day of July 1913 at 12.40 pm

Winifred anthony Dep Reg Genl

DISCHARGE OF THE above Encumbrance NO. 563860 BY MEMorandum NO. 594870 PRODUCED FOR REGISTRATION THE 8 DAY OF August 1913 AT 2.25 pm

Vernon H Edwards
DEP. REG. GENERAL

Encumbrance No 594871 (Including other land) from David Miller Dawson and William Miller Dawson to Thomas Dawson and Alison Dawson and the survivor of them produced for registration the 8 day of August 1913 at 2.25 pm

Vernon H Edwards Dep Reg Genl

Transfer No 597732 from David Miller Dawson and William Miller Dawson to Dawson & Sons Limited whose registered office is situated at Waymouth Street Adelaide of an estate in fee simple in the within land produced for registration the 15 day of September 1913 at 11.55 am

Vernon H Edwards Dep Reg Genl

Lease No 683911 (Including other land) from Dawson & Sons Limited to William Norman of the within land for a term of five and a half years from the 1 day of December 1917 produced for registration the 15 day of November 1917 at 2.40 pm

Robt Atterwood Deputy Reg Genl

Transfer No 724081 from William Norman to Norman Blackburn Limited whose registered office is at 30 Waymouth Street Adelaide of an estate in the within Lease No 683911 Produced for registration the day of August 1919 at 12.20 pm

J H Jacobs Dep Reg Genl

Mortgage No 789568 (Including other land) from Dawson & Sons Limited to The Australian Bank of Commerce Limited Produced for registration the 5 day of July 1921 at 2.20 pm

W H Salter Dep Reg Genl

The above named Thomas Dawson and Alison Dawson died on the 10 day of November 1919 and the 30 day of March 1916 respectively and the within encumbrance No 594871 is discharged as appears by Memorandum No 806448 Produced for registration the 26 day of January 1922 at 11.5 AM

E Durant Dep Reg Genl

The within Mortgage No 789568 is discharged from the sum of £3050 and the within land is discharged from the whole of the principal sum thereby secured as appears by Memorandum No 806449 Produced for registration the 26 day of January 1922 at 11.5 AM

E Durant Dep Reg Genl

Transfer No 806450 from Dawson & Sons Limited to McPherson's Proprietary Limited whose registered office is situated at 582 Collins Street Melbourne in the State of Victoria of an estate in fee simple in the within land Produced for registration the 26 day of January 1922 at 11.5 AM

E Durant Dep Reg Genl

Power of Attorney deposited No 774633

CANCELLED
AND C.T. Resr
CERTIFICATE OF TITLE ISSUED
VIDE Letter 373 of 1933
VOL 1616 FOL 136
DEP. REG. GENL.

South Australia

(CERTIFICATE OF TITLE.)

Register Book,

Vol. 657 *Folio* 36

Pursuant to Memorandum of Transfer No. 349268

Robert Bond McComas of Adelaide Woolbroker

is the proprietor of an estate in fee simple

subject nevertheless to such incumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in That piece of land situated in the CITY OF ADELAIDE, being PORTION OF THE TOWN ACRE numbered 177 and ^more particularly delineated and bounded as appears in the plan in the margin hereof and therein colored green: ~~Which said piece of land contains twenty eight perches or thereabouts and measures as well on the northerly side next Osmond Street as on the southerly side next a private road eighty seven feet or thereabouts and as well on the easterly side next a private road as on the westerly side next other part of the said Acre ninety one feet or thereabouts and is more particularly delineated in the said plan.~~

DHC Reg Genl 16-7-1968

which said Town Acre is delineated in the public map of the said city deposited in the office of the Surveyor-General.

In witness whereof I have hereunto signed my name and affixed my seal this Eighth day of February one thousand ~~eight hundred and~~ nine hundred

Signed the 8th day of February 1900 in the presence of

Vernon H Edwards

Fred. F. Turner

Registrar-General.

REGISTRAR GENERAL SOUTH AUSTRALIA

Public St. Vide G.R.O. Memorial No 36 Bk 536

C.L. Nairn

Dep. Reg. Genl.

L.2801/1968

D.L. Collins

16/7/1968

No. 6097

Mortgage No 361063 from Robert Bond McComas to the Australian Mutual Provident Society Produced for registration the 22 day November 1900 at 2.50 pm

J. A. Heath Dep Reg Genl

Power of attorney deposited No. 371752

Vernon H Edwards Dep Reg Genl

DISCHARGE OF THE above MORTGAGE No. 361063 BY MEMORANDUM No. 463951 PRODUCED FOR REGISTRATION THE 3 DAY OF February 1908 AT 2.35 pm

Vernon H Edwards

DEP. REG. GENL

Mortgage No. 463952 from Robert Bond McComas to Australian Mutual Provident Society Produced for registration the 3 day of February 1908 at 2.35 pm

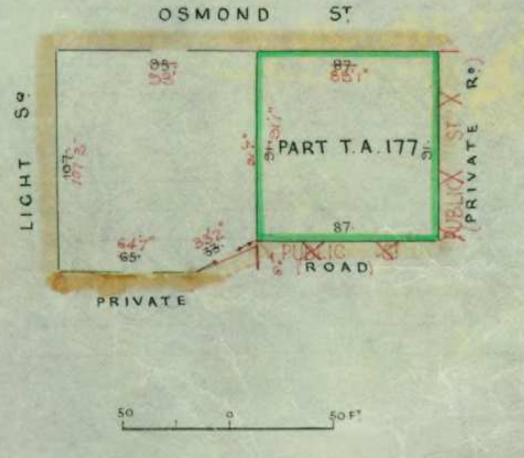
Vernon H Edwards Dep Reg Genl

Vernon H Edwards

DISCHARGE OF THE above MORTGAGE NO. 463952 BY MEMORANDUM NO. 612112 PRODUCED FOR REGISTRATION THE DAY OF AT 2.20 pm

Vernon H Edwards

DEP. REG. GENERAL



(OVER)

TRANSMISSION APPLICATION No. 1303711
Joseph Ringland Anderson ... Robert ... McComas ... are PROPRIETORS OF AN ESTATE IN FEE SIMPLE IN THE WITHIN LAND AS THE EXECUTORS NAMED IN THE WILL DATED THE 6 DAY OF May 1910 WITH CODICIL THERETO DATED THE 30 DAY OF NOVEMBER 1934 OF THE ABOVE NAMED Robert Bond McComas WHO DIED ON THE 19 DAY OF August 1938 AS APPEARS BY EXEMPLIFICATION OF PROBATE ... THE 5 DAY OF July 1939 PRODUCED FOR REGISTRATION THE 3 DAY OF October 1939 AT 11 a.m.
DEP. REG. GENL.

TRANSFER No. 1395336 FROM
Joseph Ringland Anderson and Robert Galbraith McComas to Isabel Mary Anderson of ... and Ethel Thorpe Southey of 59 Hopetoun Road ... OF AN ESTATE IN FEE SIMPLE IN THE WITHIN LAND as Tenants in Common
PRODUCED FOR REGISTRATION THE 17 DAY OF September 1943 AT 2.40 pm
DEP. REG. GENL.

MORTGAGE No. 1395337 FROM
Ethel Thorpe Southey and Isabel Mary Anderson to The Bank of Australasia
PRODUCED FOR REGISTRATION THE 17 DAY OF September 1943 AT 2.40 pm
DEP. REG. GENL.

D 1395337
DISCHARGE OF THE WITHIN MORTGAGE No. 1395337
BY ENDORSEMENT THEREON
PRODUCED FOR REGISTRATION THE 9 DAY OF December 1949 AT 2.35 pm
DEP. REG. GENL.

T 2710513 M 2710514

TRANSFER No. 2710513 TO
McPherson's Limited of 118 Waymouth Street Adelaide
OF THE WITHIN LAND. PRODUCED 22.3.1966 AT 2.25 PM.
DEP. REG. GEN.

MORTGAGE No. 2710514 TO
Isabel Mary Anderson and Ethel Thorpe Southey As Tenants in Common
PRODUCED 22.3.1966 AT 2.25 pm
DEP. REG. GEN.

DISCHARGE OF MORTGAGE No. 2710514 VIDE No. 2908294
PRODUCED 24.4.68 AT 2.55 pm
DEP. REG. GEN.

Merger Dkt 2153/71

CANCELLED AND ISSUED VIDE New Merger Docket 2159/1971 CERTIFICATE OF TITLE VOL. 3753 FOL. 148.
DEP. REG. GEN.

South Australia.

(CERTIFICATE OF TITLE.)

Register Book.

Vol. 630 Folio 135

Pursuant to Memorandum of Transfer No. 325176.

Alison Dawson wife of Thomas Dawson of Adelaide Ironworker

is the proprietor of an estate in fee simple for her separate use subject nevertheless to such incumbrances liens and interests as are notified by memorial underwritten or endorsed hereon in that piece of land situated in the CITY OF ADELAIDE, being PORTION OF THE TOWN ACRE numbered 177 and bounded as appears in the plan in the margin hereof and therein colored green: Which said piece of land contains eight perches or thereabouts and measures as well on the northerly side next a private road as on the southerly side next Weymouth Street twenty four feet and six inches or thereabouts and as well on the easterly side next other part of the said Acre ~~eighty seven feet a thereabouts~~ and on the westerly side next other part of the said Acre eighty ~~seven feet and six inches~~ or thereabouts and is more particularly delineated in the said plan

Reg. Gen'l 20-6-33

which said Town Acre is delineated in the public map of the said city deposited in the office of the Surveyor-General.

In witness whereof I have hereunto signed my name and affixed my seal this Twenty Sixth day of February one thousand eight hundred and ninety eight

Signed the 26th day of February 1898 in the presence of Vincent Edwards

E. T. Heath
Actg Registrar-General.

Corrections in red vide L.T.O. Docket 373/33
W. Dunn
Reg. Gen'l
20-6-33

AND ... New
CERTIFICATE OF TITLE ISSUED
VIDE Letter 373 of 1933
VOL. 1616 FOL. 136
DEP. REG. GENL.

Dawson No 563859 from Alison Dawson to James Wallace Dawson David Miller Dawson and William Miller Dawson all of Adelaide Plumbers of an estate in fee simple in the within land as tenants in common Produced for registration the 19 day of June 1912 at 11.15 a.m.

Encumbrance ~~Mortgage~~ No 563860 (Including other land) from James Wallace Dawson David Miller Dawson and William Miller Dawson to Thomas Dawson and Alison Dawson and the survivor of them Produced for registration the 19 day of June 1912 at 11.15 a.m.

Pursuant to Application No 593398 Alice Dawson of Gilbert Street Adelaide Widow is one undivided third part PROPRIETOR OF AN ESTATE IN FEE SIMPLE IN THE WITHIN LAND AS THE ADMINISTRATRIX OF THE ESTATE OF THE ABOVE NAMED James Wallace Dawson WHO DIED ON THE 12 day of May 1913 INTESTATE AS APPEARS BY LETTERS OF ADMINISTRATION DATED THE 20 DAY OF June 1913 PRODUCED FOR REGISTRATION THE 22 DAY OF July 1913 at 12.40 pm
[illegible]
DEP. REG. GEN.

Transfer No 593399 from Alice Dawson to the above named David Miller Dawson and William Miller Dawson of an estate in fee simple in one undivided third part in the within land as Tenants in common Produced for registration the 22 day of July 1913 at 12.40 pm
[illegible] Dep Reg Genl

DISCHARGE OF THE above Encumbrance NO. 563860 BY MEMORANDUM NO. 594870 PRODUCED FOR REGISTRATION THE 8 DAY OF August 1913 AT 2.25 pm
[illegible] Edwards
DEP. REG. GENERAL

Encumbrance No 594871 (Including other land) from David Miller Dawson and William Miller Dawson to Thomas Dawson and Alison Dawson and the survivor of them Produced for registration the 8 day of August 1913 at 2.25 pm
[illegible] Edwards Dep Reg Genl

Transfer No 597732 from David Miller Dawson and William Miller Dawson to T Dawson & Sons Limited whose registered office is situated at Waymouth Street Adelaide of an estate in fee simple in the within land Produced for registration 15 day of September 1913 at 11.53 am
[illegible] Edwards Dep Reg Genl

Lease No 683911 (Including other land) from T Dawson & Sons Limited to William Norman of the within land Term [illegible] and a half years from the 1 day of December [illegible] Produced for registration the 15 day of September 1917 at 2.40 pm
[illegible] Dep Reg G

Transfer No 724181 from William Norman to Norman Machinery Limited whose registered office is at 130 Waymouth Street Adelaide of the within Lease No 683911 Produced for registration the 11 day of August 1919 at 12.20 pm
[illegible] Dep Reg Gen

Mortgage No 789568 from T Dawson & Sons Limited to The Australian Bank of Commerce Limited Produced for registration the 5 day of July 1921 at 2.20 pm (including other land)
[illegible] Dep Reg Gen

The above named Thomas Dawson and Alison Dawson died on the 10 day of November 1919 and the 30 day of March 1916 respectively and the within encumbrance No 594871 is discharged as appears by Memorandum No 806448 Produced for registration the 26 day of January 1922 at 11.5 AM.
[illegible] Dunnas Dep Reg Genl

The within Mortgage No 789568 is discharged from the sum of £3050 and the within land is discharged from the whole of the principal sum thereby secured as appears by Memorandum No 806449 Produced for registration the 26 day of January 1922 at 11.5 AM.
[illegible] Dunnas Dep Reg Gen.

Transfer No 806450 from T Dawson & Sons Limited to McPherson's Proprietary Limited whose registered office is situated at 582 Collins Street Melbourne in the State of Victoria of an estate in fee simple in the within land Produced for registration the 26 day of January 1922 at 11.5 AM.
[illegible] Dunnas Dep Reg Gen

Power of Attorney Deposited No 774633
[illegible] Dep Reg Genl

(C) **South Australia.** (CERTIFICATE OF TITLE.)

Register Book,
Vol. CCCCVIII Folio 99.

Pursuant to Memorandum of Transfer No. 152.474.

Henry Woodcock of Adelaide Gentleman is now seized of an estate in fee simple

subject nevertheless to such encumbrances, liens, and interests, as are notified by memorial underwritten or endorsed hereon, in That piece of land situated in the City of Adelaide, being portion of the Town Acre numbered 177 and bounded as appears in the plan in the margin hereof and therein colored green, which said piece of land contains ~~fifteen perches or thereabouts and~~ is more particularly delineated in the said plan ~~measures on the south side next Waymouth Street fifty feet or thereabouts on the west side next other part of the said Acre eighty eight feet or thereabouts on the east side next other part of the said Acre seventy two feet or thereabouts the boundary line then runs northeasterly sixteen feet and six inches or thereabouts then north three feet or thereabouts then westerly in an irregular line to the north west side thirty nine feet or thereabouts the said east side being distant from the easterly boundary of the said Acre sixteen feet and six inches or thereabouts~~

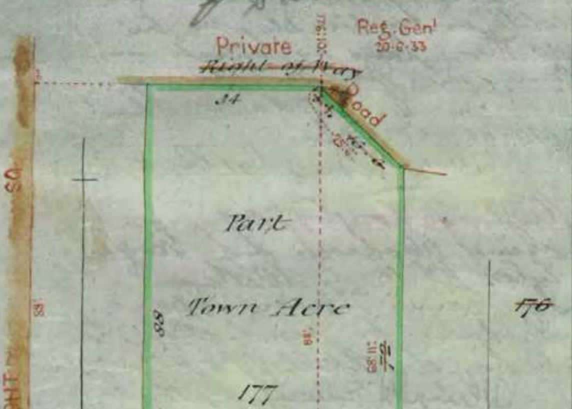
Reg. Gen! 20-6-33

which said Town Acre 177 is delineated in the public map of the said city deposited in the office of the Surveyor-General.

In witness whereof, I have hereunto signed my name and affixed my seal this twenty eighth day of November one thousand eight hundred and eighty two in presence of

[signature] Actg Registrar-General.

Corrections in red vide L.T.O. Docket 373/33



CANCELLED
AND New
CERTIFICATE OF TITLE ISSUED
VIDE Letter 373 of 1933
VOL. 1616 FOL. 136
[signature] DEP. REG. GENL.

Mortgage No. 128837 from Philip James Marchant to the Commercial Marine Insurance Company Limited Produced the 20th July 1881 at noon.

[signature] Dep. Reg. Genl.

Mortgage No. 141081 (including also other property) from Philip James Marchant to the Commercial Marine Insurance Company Limited Produced the 13th April 1882 at 2 p.m.

[signature] Dep. Reg. Genl.

Transfer No. 153195 from Henry Woodcock to William Watts of Adelaide Gentleman of the above land Produced the 1 day December 1882 at noon

[signature] Reg. Genl.

Lease No. 153196 from William Watts to Henry Woodcock of the above land Term 21 years from the 20 day November 1882 Produced the 1st day December 1882 at noon

[signature] Reg. Genl.

Surrender of the above Lease No. 153196 by endorsement thereon dated the 2 day May 1883 Entered the 7th day May 1883 at 1 pm

[signature] Dep. Reg. Genl.

Over

Discharge of the within Mortgages Nos 128837 and 141081 by receipts endorsed thereon dated the 5 day August 1884 entered the 8 day August 1884 at noon
A. Whittingham Dep Reg Genl

Mortgage No 179492 from William Watts to The Australian Mutual Provident Society produced the 8 day August 1884 at noon
A. Whittingham Dep Reg Genl

The estate of the within named William Watts in the within land has been transmitted to David Tweedie Land Agent and Alfred Barham Black Civil Engineer both of Adelaide the trustees of the said William Watts as appears by Deed of Assignment dated the 6 day October 1886. Produced for registration the 25 day May 1887 at 1pm (No 213687)
[illegible] Cutts Dep Reg Genl

Transfer No 213689 from David Tweedie and Alfred Barham to The Australian Mutual Provident Society of the within land. Produced for registration the 25 day May 1887 at 1pm
[illegible] Cutts Dep Reg Genl

Transfer No 320767 from the Australian Mutual Provident Society to Joseph Fisher of Adelaide gentleman of an estate in fee simple in the within land produced for registration the 21 day September 1897 at 12.15pm
J. T. Heath Dep. Reg Genl

Transfer No 337081 from Joseph Fisher to Charles Frederick Pascoe of Waymouth Street Adelaide Pawnbroker of an estate in fee simple in the within land Produced for registration the 31 day January 1899 at 11 am
J. T. Heath Dep Reg Genl

Mortgage No 337082 from Charles Frederick Pascoe to Joseph Fisher Produced for registration the 31 day January 1899 at 11 am
J. T. Heath Dep Reg Genl

Mortgage No 342837 from Charles Frederick Pascoe to Harriett Catherine Rosser Produced for registration the 14 day July 1899 at 12.30pm
J. T. Heath Dep Reg Genl

Transfer No 343703 from Joseph Fisher to Francis Joseph Fisher Harold Fisher and William Calvert all of Adelaide Gentlemen of the within Mortgage No 337082 Produced for registration the 4 day August 1899 at 11.10 am
J. T. Heath Dep Reg Genl

DISCHARGE OF THE above MORTGAGE
No 342837 BY RECEIPT ENDORSED
THEREON PRODUCED FOR REGISTRATION
THE 12 DAY OF September 1906
AT 3 pm [illegible]
Vernon H Edwards DEP. REG. GENL

Transfer No 467808 from Francis Joseph Fisher and Harold Fisher and William Calvert as Mortgagees to Henry Woodcock of Adelaide Agent and George Tyler White of [illegible] Road [illegible] Norwood, Gentleman of an estate in fee simple in the within land as tenants in common Produced for registration the 13 day of April 1908 at 2.50pm
Vernon H Edwards Dep Reg Genl

Mortgage No 467809 from Henry Woodcock and George Tyler White to William Pope and Thomas Pope Produced for registration the 13 day of April 1908 at 2.50pm
Vernon H Edwards Dep Reg Genl

DISCHARGE OF THE above MORTGAGE
NO. 467809 BY MEMORANDUM
NO. 846601 PRODUCED FOR
REGISTRATION THE 28 DAY OF March
1923 AT 2.25 pm
[illegible]
DEP. REG. GENERAL

Transfer No 846602 from Henry Woodcock and George Tyler White to McPherson's Proprietary Limited whose registered office is situate at 583 Collins Street Melbourne in the State of Victoria of an estate in fee simple in the within land Produced for registration the 28 day of March 1923 at 2.25 pm
[illegible] Dep Reg Gen

(C)

South Australia.

CERTIFICATE OF TITLE.

Register Book,

Vol. CLXXXIV Folio. 82

Pursuant to application No. 13011

Ralph Raphael of Adelaide Gentleman is now seized of an estate in fee simple, subject, nevertheless, to such encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon, in That piece of land situated in the City of Adelaide, being portion of the Town Acres numbered 176 and 177, and bounded as appears in the plan in the margin hereof, and therein colored green, which said piece of land contains [illegible] as more particularly delineated in the said plan [illegible] which said Town Acres are is delineated in the public map of the said city, deposited in the office of the Surveyor-General, and was originally granted the 23rd day of December, 1837, under the hand and seal of James Hurtle Fisher, Esquire, Resident Commissioner of the said Province, over 176 to Edward Gilles and over 177 to Charles Curtis

Reg. Gen! 20-6-33

In witness whereof, I have hereunto signed my name and affixed my seal this twenty sixth day of November one thousand eight hundred and eighty three

Registrar-General

REGISTRAR GENERAL SOUTH AUSTRALIA

Signed, the 12th day of Nov! 18 83, in presence of

Corrections in red vide L.T.O. Docket 373/33.

Reg. Gen! 20-6-33

Mortgage No 64646 (including also other property) from Ralph Raphael to "The Australian Mutual Provident Society" Entered the 30th day of May 1876 at 8 pm

Deputy Gen!

Discharge of the above Mortgage No. 64646 by receipt endorsed thereon dated the 30 day June 1881. Entered the 1 day July 1881 at 1 pm

Actg Dep Gen!

Pursuant to Application No 243086. Henry Joseph Raphael of Adelaide Agent is entitled to An Estate in Fee Simple in the above land as one of the executors named in the Will dated the 30th Day of August 1887 of the above named Ralph Raphael who died on the 29th day of October 1890 as appears by Probate dated the 13th day of November 1890. Produced for registration the 11th day of December 1890 at 2 p 30 p. m.

Dep Gen!

Order of the Supreme Court No 34517 3 dated the 13 day July 1899 vesting the within land in Isaac Isaacs of Adelaide Financial agent and Walter Josephson Gollin of Sydney merchant produced for registration the 13 day September 1899 at 2 30 pm

Dep Reg Gen!

Memorandum of Appointment No. 858380
Whereby the within land is now vested in
Isaac Isaacs of Adelaide Financial Agent and
Ralph Victor Tartakover of Dimboola in the State
of Victoria Solicitor for an estate in fee simple
pursuant to "The Trustee Act 1915". Produced for
registration the 11 day of May 1933 at 12.15 pm
[illegible] Dep Reg Genl

Transfer No. 872882 from Isaac
Isaacs and Ralph
Victor Tartakover to McPherson's
Proprietary Limited whose registered
office is situated at 582 Collins Street
Melbourne of an estate in fee simple
in the within land. Produced for
registration the 4 day of December 1933
at 11.40 am.
[illegible] Dep Reg Genl.

CANCELLED

AND Part
CERTIFICATE OF TITLE ISSUED
VIDE Letter 373 of 1933
VOL. 1616 FOL. 136 A.E. Gardner
DEP. REG. GENL.

APPENDIX B: REGISTERED GROUNDWATER SEARCH

WaterConnect

Groundwater Data Report

Government of South Australia
Department for Environment and Water

Circle Centre -34.925649,138.595042, Radius 0.500km

Unit No	Date	Max Depth (m)	Latest Depth (m)	SWL (m)	SWL Date	Yield (L/sec)	Yield Date	TDS (mg/L)	TDS Date	Aquifer	Purpose	Status	Permit No	Cased To (m)	Obs No	SWL Status	Salinity Status
6628-230	01/01/1905	83.82	83.82	17.98	16/11/1914	3.16	16/11/1914	1856	16/11/1914								
6628-231	01/12/1970	23.01	23.01														
6628-234	01/11/1961	12.95	12.95														
6628-235	19/06/1914	27.43	27.43	21.34	19/06/1914	1.52	19/06/1914	1456	19/06/1914	Tes(T3-4)							
6628-236		20.88	20.88	19.51		1.01				Qpah	DRN						
6628-237		32.61	32.61								DRN						
6628-243	12/04/1962	13.72	0	10.97	12/04/1962					Qpah		BKF	120282				
6628-244		21.03	21.03	19.51		1.01		882	01/06/2002	Qpah	DRN						
6628-245		22.1	22.1	19.05		3.41				Qpah	DRN						
6628-247		22.86	22.86	20.12		3.03				Qpah	DRN						
6628-248	24/03/1960	21.95	21.95								DRN						
6628-249	20/08/1965	45.72	45.72									UKN					
6628-250	25/08/1965	23.01	23.01									UKN					
6628-251	06/04/1968	24.38	24.38									UKN					
6628-252	18/03/1968	26.21	26.21									UKN					
6628-253	19/03/1968	25.5	25.5									UKN					
6628-254	21/03/1967	27.2	27.2									UKN					
6628-255	29/01/1957	12.8	12.8									UKN					
6628-257	29/01/1957	12.8	12.8									UKN					
6628-258	25/01/1957	12.8	12.8									UKN					
6628-260	24/01/1957	12.8	12.8									UKN					
6628-261	23/01/1957	12.8	12.8									UKN					
6628-262	12/01/1971	15.47	15.47														
6628-263	13/01/1971	7.62	7.62														
6628-264	05/08/1954	22.86	22.86														
6628-265	07/10/1954	22.86	22.86	18.29	07/10/1954					Qpah							
6628-289	09/04/1964	18.29	18.29									UKN					
6628-290	03/04/1964	27.43	27.43									UKN					
6628-291	10/03/1970	36.42	36.42								DRN	WWT		29.26			
6628-358																	
6628-368	13/09/1976	113	113	40	13/09/1976			2802	29/09/1976	Tes(T3-4)	OBS	BKF	186				
6628-442	05/06/1964	38.1	38.1					1140	05/06/1964			UKN					
6628-443	04/07/1964	12.34	12.34	6.86	03/07/1964							UKN					
6628-448	10/06/1964	19.81	19.81									UKN					
6628-452	29/01/1959	17.07	17.07	14.33	29/01/1959	0.45	29/01/1959			Tomw(T1)	DRN	OPR		12.6			
6628-453	23/06/1964	18.23	18.23									UKN					
6628-454	16/06/1964	17.07	17.07									UKN					

Unit No	Date	Max Depth (m)	Latest Depth (m)	SWL (m)	SWL Date	Yield (L/sec)	Yield Date	TDS (mg/L)	TDS Date	Aquifer	Purpose	Status	Permit No	Cased To (m)	Obs No	SWL Status	Salinity Status
6628-455	26/06/1964	15.24	15.24									UKN					
6628-456	30/06/1964	15.24	15.24									UKN					
6628-457	03/12/1968	14.63	14.63														
6628-458	01/01/1968	12.8	12.8														
6628-459	20/12/1955	7.7	7.7									UKN					
6628-460	06/03/1956	20.73	20.73			0.51	06/03/1956					UKN		18.29			
6628-461	10/01/1956	8.53	8.53									UKN					
6628-462	26/01/1960	2.74	2.74									UKN					
6628-463	11/01/1960	15.24	15.24									UKN					
6628-464	26/01/1960	3.35	3.35									UKN					
6628-465	14/09/1956	10.72	10.72									UKN					
6628-466	18/09/1956	10.67	10.67									UKN					
6628-467	25/01/1960	2.59	2.59									UKN					
6628-468	19/01/1960	18.29	18.29			1.52	19/01/1960					UKN		13.97			
6628-469	27/01/1960	3.79	3.79									UKN					
6628-470	27/09/1956	15.09	15.09									UKN					
6628-471	22/01/1960	3.15	3.15									UKN					
6628-472	22/01/1960	15.24	15.24									UKN					
6628-473	29/01/1960	2.39	2.39									UKN					
6628-474	24/09/1956	15.24	15.24									UKN					
6628-496	19/12/1968	15.62	15.62														
6628-497	01/05/1956	15.85	15.85									UKN					
6628-498	04/05/1956	16.76	16.76									UKN					
6628-499	08/05/1956	16.76	16.76					860	14/11/2002	Qpah		UKN					
6628-500	18/03/1954	18.29	18.29			0.25	18/03/1954					UKN					
6628-501	12/04/1956	15.62	15.62									UKN					
6628-502	17/04/1956	18.29	18.29									UKN					
6628-503	19/04/1956	16.81	16.81									UKN					
6628-504	23/04/1956	16.76	16.76									UKN					
6628-505	26/04/1956	16.92	16.92									UKN					
6628-507	05/03/1954	18.29	18.29									UKN					
6628-508	19/12/1955	3.96	3.96									UKN					
6628-509		3.66	3.66			0.01	01/01/1964	400	06/05/1964	Qpah							
6628-511	04/04/1954	20.9	20.42			1.89	04/04/1954					UKN		20.9			
6628-6881	28/03/1978	100	0	18	28/03/1978	0.38	28/03/1978	2404	28/03/1978	Teb		BKF	2798	63.8			
6628-11102	13/09/1979	19.8	19.8	18.05	01/03/1980					Qpah	OBS				ADE053	H	N
6628-11103	13/09/1979	30	30	17.92	06/01/1984					Toc(T2)	OBS				ADE054	H	N
6628-11104	01/09/1979	13.8	13.8									UKN					
6628-11105	20/08/1979	31.65	31.65	19.09	06/01/1984					Toct	INV	ABD			ADE055	H	N
6628-11753		12.55	12.55	6.35	03/09/1981			882	03/09/1981	Qpah		ABD					
6628-13444	29/11/1984	160	160	20	29/11/1985	2				Tomw(T2)			14718	29			
6628-18011	10/06/1996	7.5	7.5								OBS		38022				

Unit No	Date	Max Depth (m)	Latest Depth (m)	SWL (m)	SWL Date	Yield (L/sec)	Yield Date	TDS (mg/L)	TDS Date	Aquifer	Purpose	Status	Permit No	Cased To (m)	Obs No	SWL Status	Salinity Status
6628-18012	10/06/1996	7.2	7.2								OBS		38044				
6628-18039	09/05/1957	6.1	6.1									UKN					
6628-18040	14/05/1957	6.1	6.1									UKN					
6628-21176	30/09/2002	25	25	19.66	30/09/2002					Qpah	MON		59191	16.9			
6628-21425	01/08/2003	5.4	5.4	3	01/08/2003					Qpah	MON		62296	2.4			
6628-21525	19/09/2003	18	18	15.8	19/09/2003	0.01	19/09/2003			Qpah	MON		63333	15			
6628-21940	24/08/2004	21.9	0	17.7	24/08/2004					Qpah	MON	BKF	120237				
6628-21941	23/08/2004	20.3	19.5	17.2	23/08/2004					Qpah	MON		100822	16.4			
6628-21942	23/08/2004	19.2	0	17	23/08/2004					Qpah	MON	BKF	120238				
6628-21943	26/08/2004	19.6	0	17.7	26/08/2004					Qpah	MON	BKF	120236				
6628-21944	28/08/2004	22	19.7	17.4	28/08/2004					Qpah	MON		100828	16.6			
6628-21953	24/12/2004	22.4	22.4										104015				
6628-21954	23/12/2004	22.7	22.7										104016				
6628-21955	23/12/2004	26.55	26.55										104017				
6628-22020	23/02/2005	24.9	24.9										104592	15.7			
6628-22243	18/07/2005	15	15		18/07/2005						MON	DRY	105758	12			
6628-22244	19/07/2005	21	21	19	19/07/2005					Qpah	MON		105759	17			
6628-22245	21/02/2005	15	15		21/02/2005						MON	DRY	105761	12			
6628-22246	20/07/2005	22	21	19	20/07/2005					Qpac(Q4)	MON		105762	18			
6628-22247	15/07/2005	22	0	19	15/07/2005					Qpac(Q4)	MON	BKF	141477				
6628-22663	03/11/2005	20	20	19	03/11/2005					Qpah	MON		111427	14			
6628-23080	19/07/2007	17.3	17.3								INV		133323	8.1			
6628-23715	27/03/2008	18.3	18.3	17.2	27/03/2008					Qpah	INV		144571	15.2			
6628-23716	27/03/2008	19.5	19.5	18	27/03/2008					Qpah			144568	16.5			
6628-23717	26/03/2008	20	20	18	26/03/2008					Qpah			144572	17			
6628-23718	23/03/2008	20	20	18	23/03/2008					Qpah			144573	14			
6628-23719	26/03/2008	20	20	18	26/03/2008					Qpah	INV		144570	16			
6628-24624	06/03/2008	20.2	20.2								INV		143589				
6628-24903	08/07/2008	20	20								INV		143591				
6628-24909	07/07/2008	20.1	20.1								INV		143590				
6628-24927	07/10/2009	21	21								INV		182302	18			
6628-24928	06/10/2009	25	25								INV		182301	19			
6628-24929	08/10/2009	20.5	20.5								INV		182303	17.5			
6628-25936	25/08/2014	21	0	18.5	02/05/2015					Qpah	INV	BKF	243427				
6628-26014	17/09/2011	24.5	0								INV	BKF	205473				
6628-26859	29/10/2012	26	25	18.4	29/10/2012					Qpah	INV		216863	22			
6628-26860	30/10/2012	25.5	21	18.5	30/10/2012					Qpah	INV		216862	21			
6628-27141	13/01/2014	18	18								INV		229386				
6628-27142	10/01/2014	18	18								INV		229385				
6628-27171	28/11/2013	11	11		28/11/2013							DRY	227473	11			
6628-27514	14/07/2014	3.8	0	1.8	14/07/2014					Qpah		BKF	243424				
6628-27515	14/07/2014	4.3	0	1.7	02/05/2015					Qpah	INV	BKF	243429				

Unit No	Date	Max Depth (m)	Latest Depth (m)	SWL (m)	SWL Date	Yield (L/sec)	Yield Date	TDS (mg/L)	TDS Date	Aquifer	Purpose	Status	Permit No	Cased To (m)	Obs No	SWL Status	Salinity Status
6628-27516	14/07/2014	4	0	1.8	14/07/2014					Qpah	INV	BKF	243428				
6628-27532	20/11/2014	19.5	0	18.8	20/11/2014					Qpah	INV	BKF	239435				
6628-27622	11/11/2014	20.5	0	18.5	11/11/2014					Tomw(T1)		BKF	243431				
6628-27637	03/02/2015	20.5	20	19	03/02/2015			3857	03/02/2015	Qpah	INV		231593	17			
6628-27764	23/04/2015	13	13	12.5	23/04/2015					Qpah			246996	10			
6628-28004	31/10/2014	20.6	0									BKF	243430				
6628-28005			0									BKF	243430				
6628-28006		2.5	0	2	02/05/2015					Qpah		BKF	243426				
6628-28007		2.5	0									BKF	243425				
6628-28143	04/02/2016	21.5	0	19.2	04/02/2016					Qpah	MON	BKF	270836				
6628-28144	02/02/2016	22	22	19.2	02/02/2016					Qpac(Q4)	MON		256152	19			
6628-28145	02/02/2016	22	0	19.1	02/02/2016					Qpac(Q4)	MON	BKF	270835				
6628-28146	03/02/2016	21.5	21.5	19.2	03/02/2016					Qpah	MON		256150	18.5			
6628-28157	08/02/2016	20	20	5.4	08/02/2016					Qpah	INV		256735				
6628-28244		20	20														
6628-28245		24	24														
6628-28402	05/04/2016	25	25								INV		263397				
6628-28483		20.7	0									BKF	270837				
6628-28484		23	0									BKF	270838				
6628-28593	20/10/2016	25	25								INV		274263				
6628-28594	21/10/2016	25	25								INV		274264				
6628-28651	10/01/2017	35	35								INV		279397				
6628-28755	24/02/2017	17	17								INV		280318				
6628-28756	24/02/2017	16.9	16.9		24/02/2017						INV	DRY	280319				
6628-28903	05/06/2017	23.3	0		29/11/2017						INV	ABD	294868				
6628-28904	31/05/2017	15	15								INV		282092	12			
6628-28905	31/05/2017	24	0		29/11/2017						INV	ABD	294866				
6628-28906	03/06/2017	23.7	0		29/11/2017						INV	ABD	294879				
6628-28907	08/06/2017	15	0		29/11/2017						INV	ABD	294880				
6628-28908	07/06/2017	23.6	0		29/11/2017						INV	ABD	294869				
6628-29192			0		03/11/2017							BKF	294763				
6628-29200			0									BKF	294764				
6628-29501	30/01/2018	25	0								INV	BKF	301775				

154 records

APPENDIX C: UNDERGROUND SERVICE PLANS

DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442

TransACT assets found within 20 meters of your location

To:	Ms Sophie Hambour	From:	TransACT
Company:	Agon Environmental	Date:	30/11/2018
Address:	3/224 Glen Osmond Road	Location:	Waymouth Street Adelaide SA 5000
Phone:	0401810835	Sequence#:	78112946
Fax:	Not Supplied	Job#:	15389461
Email:	sophie.hambour@agonenviro.com.au	District:	SA

Please allow a minimum of three (3) working days for an on-site location.

Please allow a minimum of three (3) working days for an on-site location.

The response to this enquiry has been obtained from TransACT's records based on the GML location provided by DBYD from your original request.

IMPORTANT NOTICE

This form and associated plans are to be kept at the work site.

DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these may vary significantly.

This information is valid for 14 days from the sent date and indicates the presence of the TransACT underground network in the area in the original DBYD GML file. The location of the TransACT underground network may vary over time. Accordingly TransACT plans are intended to be indicative only. The Recipient must make arrangements with TransACT for an on-site investigation to determine its location, if such an investigation is required or requested. The Recipient, of this document is responsible for any damage caused to the TransACT underground network and any other TransACT plant or equipment where works commence before the receipt of this reply, or where the Recipient fails to follow any instructions issued by TransACT following an on-site investigation. All investigation/excavation on or around the TransACT underground network must be Soft dig. TransACT reserves the right to recover compensation for any loss or damage, including consequential losses, to its underground network or any other plant or equipment, caused by the Recipient. If an on-site investigation is required or requested, the Recipient must contact TransACT at least 3 business days prior to the commencement of any works. If additional works are planned at a location, which is not specified in this reply, or if works are not carried out within 14 days from the date of this reply, please note that TransACT requires the Recipient to lodge an additional request.

RECIPIENT'S DUTY OF CARE

It is the Recipient's responsibility to:

1. request information of TransACT underground network for a particular location at a reasonable time before construction is due to begin
2. must first physically expose TransACT plant by Soft Dig (Pot Holing)
3. Prior to any mechanical excavation, visually locate TransACT plant by hand Pot Holing (Soft Dig) every 5 metres where construction activities may damage or interfere with TransACT underground network.

DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442

DAMAGE

ANY DAMAGE TO TRANSACT'S NETWORK MUST BE REPORTED IMMEDIATELY.

It is the Recipient's responsibility to locate TransACT's underground plant by careful hand Pot Holing prior to any mechanical excavation in the vicinity and to exercise due care during that excavation. TransACT will accept no liability for the accuracy and / or the completeness of the information contained herein.

TRANSACT WILL SEEK COMPENSATION FOR LOSS CAUSED BY ASSET DAMAGE.

Further assistance can be obtained via the TransACT contact details shown at the beginning of this document.

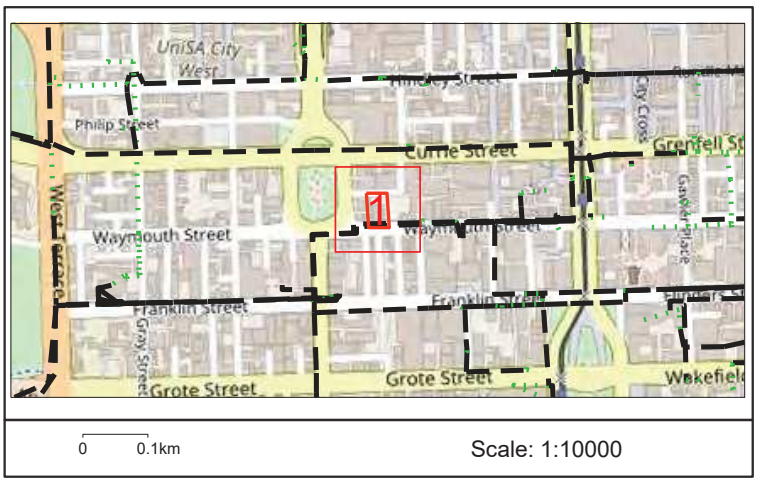
PRIVACY NOTE

Your information has been provided to TransACT by DBYD. TransACT keeps your information in accordance with its privacy policy.

Definition – The terms below have the following meanings in this document

1. **Recipient** means the recipient of this document including its contractors, employees and agents
2. **Soft Dig** means to physically expose the TransACT plant by non-mechanical excavation
3. **Pot Holing** means to physically expose the TransACT plant by non-mechanical excavation

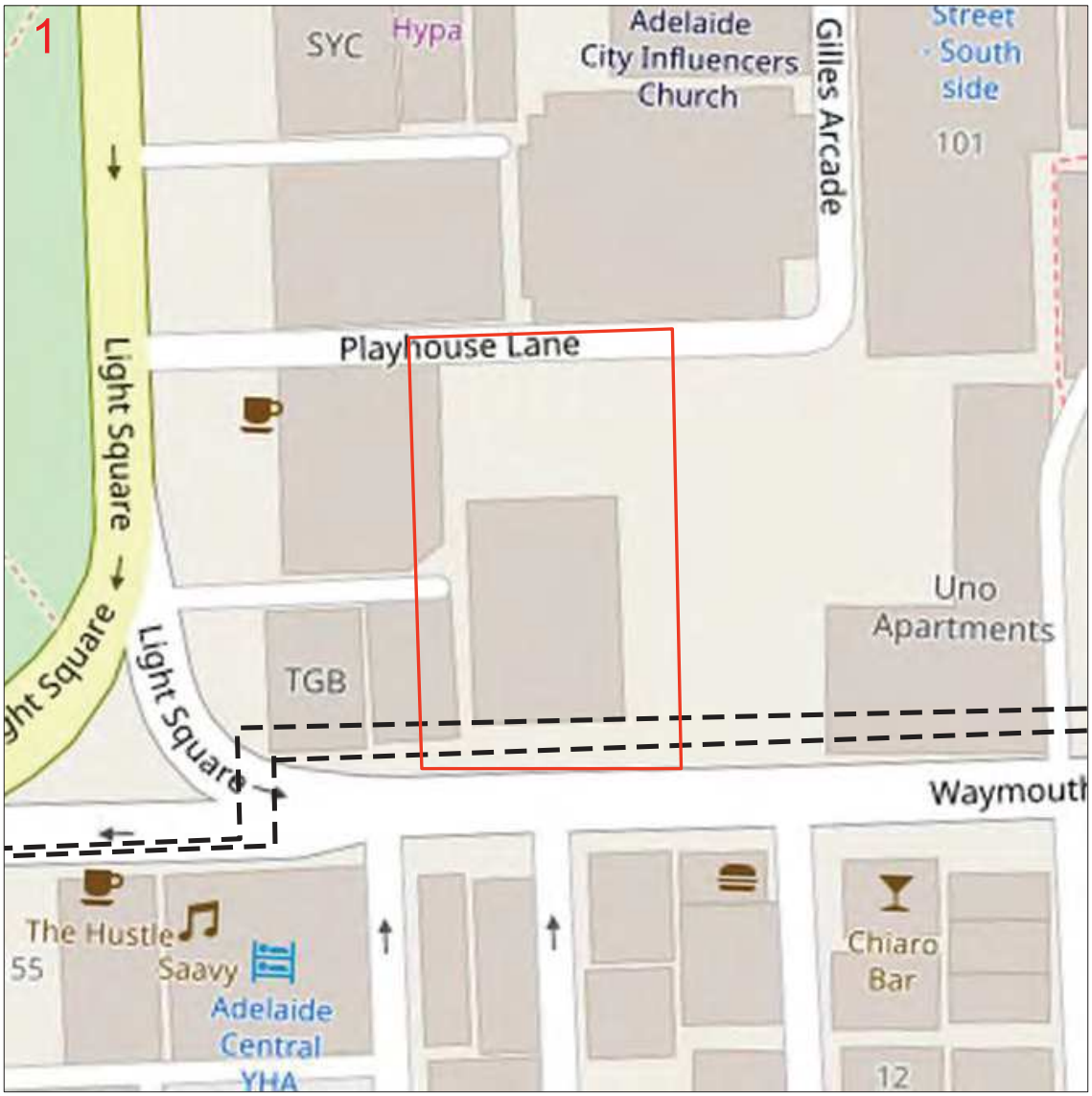
Overview Map



DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442



Enquiry Number: 78112946

Map Sheet: 1

Scale: 1:750

0 0.008km

LEGEND

DBYD Request Area		Conduits			
Line		6 Conduits		100/110 - 4 Conduits	
		4 Conduits		100/110 - 3 Conduits	
Area		2 Conduits		100/110 - 2 Conduits	
		1 Conduit		100/110 - 1 Conduit	

N

WARNING:
This plan contains commercially sensitive information and is to be treated accordingly. No such information is to be passed onto other parties without the written consent of TransACT Captial Communications.

Note: *If the works fall in an area that is adjacent to TransACT Captial Communications infrastructure, a pre-inspection is required prior to commencement of works. Contact TransACT Captial Communications to arrange an inspection time.* ***NO WORKS TO COMMENCE PRIOR TO INSPECTION.***

Only TransACT's duct displayed.

DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442

TransACT assets found within 20 meters of your location

To:	Ms Sophie Hambour	From:	TransACT
Company:	Agon Environmental	Date:	30/11/2018
Address:	3/224 Glen Osmond Road	Location:	Waymouth Street Adelaide SA 5000
Phone:	0401810835	Sequence#:	78129280
Fax:	Not Supplied	Job#:	15392229
Email:	sophie.hambour@agonenviro.com.au	District:	SA

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Please allow a minimum of three (3) working days for an on-site location.

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3. Prior to any mechanical excavation, visually locate TransACT plant by hand Pot Holing (Soft Dig) every 5 metres where construction activities may damage or interfere with TransACT underground network.

DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442

DAMAGE

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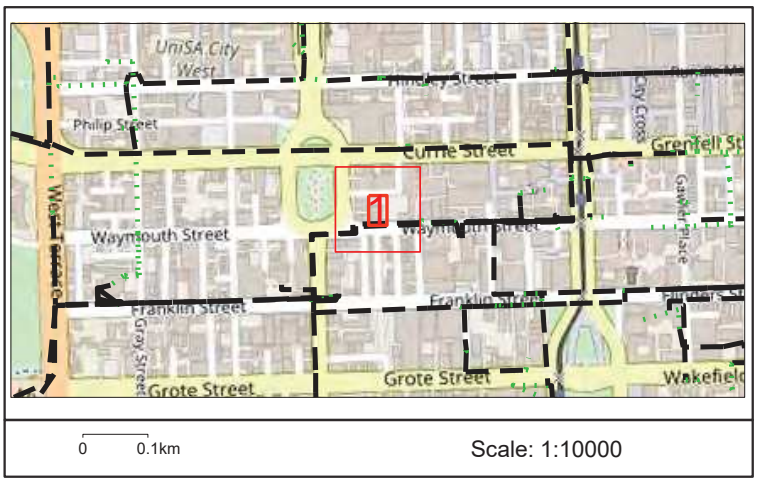
Overview Map



DBYD Notification Response

TransACT Capital Communications
Contact: 02 62298009
ABN – 23 093 966 888

TransACT Victoria Communications
Contact: 02 62298009
ABN - 55 647 895 442

Enquiry Number: 78129280

Map Sheet: 1

Scale: 1:750

0 0.008km

LEGEND

DBYD Request Area		Conduits			
Line		6 Conduits		100/110 - 4 Conduits	
		4 Conduits		100/110 - 3 Conduits	
Area		2 Conduits		100/110 - 2 Conduits	
		1 Conduit		100/110 - 1 Conduit	

N

WARNING:
This plan contains commercially sensitive information and is to be treated accordingly. No such information is to be passed onto other parties without the written consent of TransACT Captial Communications.

Note: *If the works fall in an area that is adjacent to TransACT Captial Communications infrastructure, a pre-inspection is required prior to commencement of works. Contact TransACT Captial Communications to arrange an inspection time.* ***NO WORKS TO COMMENCE PRIOR TO INSPECTION.***

Only TransACT's duct displayed.

Sequence Number: 78129281

Date: 30/11/2018

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALLY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.

nextgen GROUP

LEGEND

Digsite		Assets	
Point		Cable	
Line		3rd Party Duct	
Area		Marker Post	

Sequence Number: 78129281

Date: 30/11/2018

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALLY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.

nextgen GROUP

LEGEND

Digsite		Assets	
Point		Cable	
Line		3rd Party Duct	
Area		Marker Post	

Response Cover Letter

Date: 30/11/2018

AAPT (PowerTel) Limited
GPO Box 7041 Sydney 2001
Phone: 1800 786 306
A/H: 1800 786 306

To:
Ms Sophie Hambour - Customer ID: 1706191
Agon Environmental
3/224 Glen Osmond Road
Fullarton SA 5063

Email: sophie.hambour@agonenviro.com.au
Phone: 0401810835
Fax: Not Supplied
Mobile: 0401810835

Dear Ms Sophie Hambour

The following is our response to your Dial Before You Dig enquiry.

AAPT ASSETS ARE NOT AFFECTED BY YOUR ENQUIRY 78112949

Sequence Number:	78112949
Location:	Waymouth Street Adelaide SA 5000
Commencement Date:	04/12/2018

Only AAPT ducts are included in this response, AAPT cables may be installed in third party ducts. Please follow all DBYD notifications from other asset owners.

AAPT **DOES NOT** own or operate telecommunications network infrastructure within the request area detailed above.

Should the scope of your work or the area of your work change, please contact as below to receive further advice.

Due to continued network expansion, the network information can only be considered valid and accurate for 28 days from issue.

AAPT will seek compensation for any damage to its network through negligence or ignorance of duty of care. Should you require any further information, please contact as below:

AAPT
Ph: 1800 786 306

DUTY OF CARE

Due to the nature of underground cables and the age of some cables and records the accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are indicative only and as a result AAPT (PowerTel) does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful onsite investigations are essential to locate an assets exact position.

The following minimum clearances must be maintained.

1) 300mm when laying asset's inline, horizontal or vertical.

2) 500mm when operating vibrating equipment. Eg: Vibrating plates.

3) 1000mm when operating mechanical excavators or Jackhammers.

ON SITE LOCATING OF AAPT'S (POWERTEL) CABLING AND INFRASTRUCTURE MUST BE CONDUCTED BY AAPT'S (POWERTEL) PERSONNEL ONLY. AAPT (POWERTEL) WILL USE ALL LEGAL MEANS TO SEEK DAMAGES AND ANY OTHER REMEDIES AVAILABLE TO IT IN THE EVENT THAT ITS CABLE OR ANY OTHER NETWORK INFRASTRUCTURE IS DAMAGED BY YOU OR YOUR PERSONNEL AND/OR CONTRACTORS. IT IS AN OFFENCE TO OPEN ANY AAPT'S (POWERTEL) PITS OR MANHOLES AND/OR ANY ASSOCIATED INFRASTRUCTURE BELONGING TO OR PART OF AAPT'S (POWERTEL) NETWORK

Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following.

All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs & Manhole covers must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the possibility of damage to the cable.

EG: Blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.

All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.

All excavations must be undertaken in accordance with the relevant legislation and regulations.

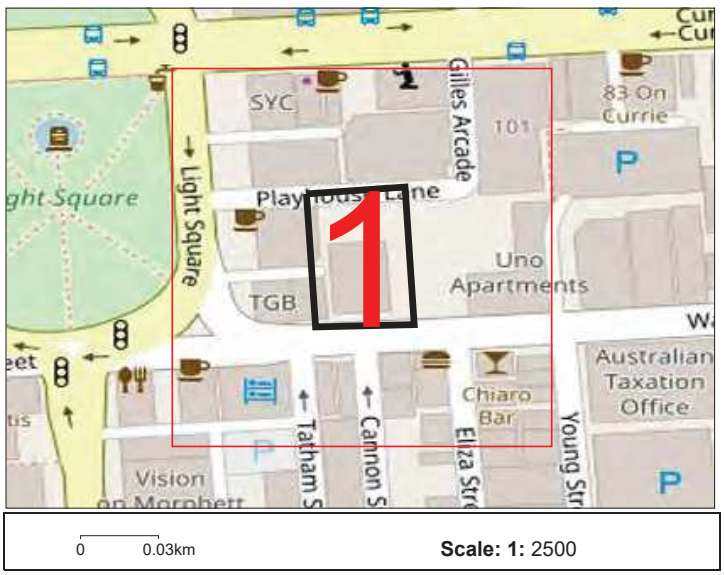
ANY DAMAGE TO AAPT (POWERTEL) NETWORK MUST BE REPORTED IMMEDIATELY TO 1800 786 306

Any information provided is valid only for 28 days from the date of issue of this document.

If the work operations extend beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment by contacting Dial Before You Dig ph:1100 or www.dialbeforeyoudig.com.au

Onsite visits by AAPT (PowerTel) agents may incur costs, this would solely depend on the type and extent of the work to be carried out. EG: Major roadwork's, network relocation's, Large planning and design work's.

Overview Map



AAPT (for information specific to this job only) Ph 1800 786 306

AAPT (PowerTel) Limited GPO Box 7041 Sydney 2001
Phone: 1800 786 306 A/H 1800 786 306

Enquiry Number: 78112949

Map Sheet: 1

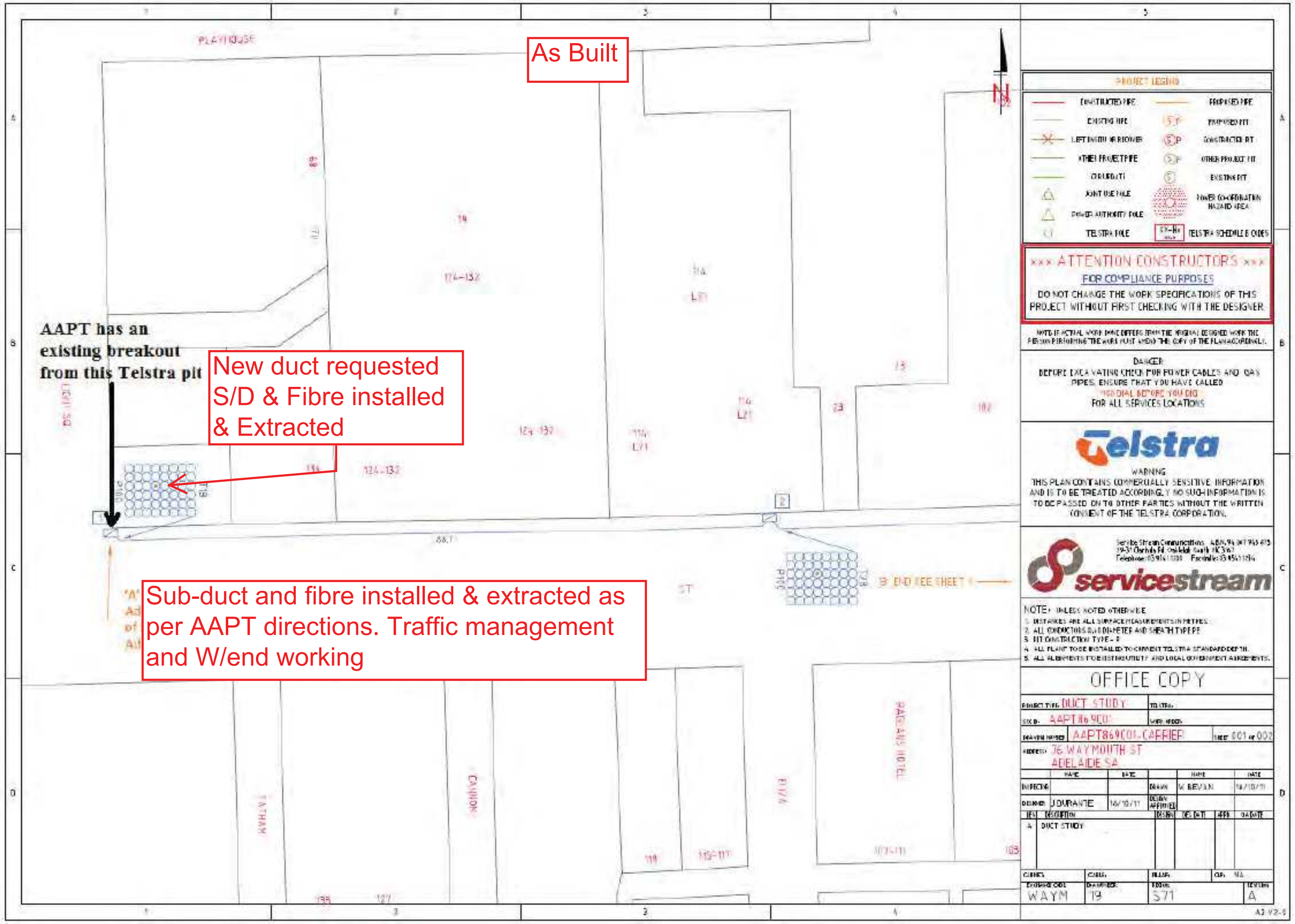
Scale: 1:750

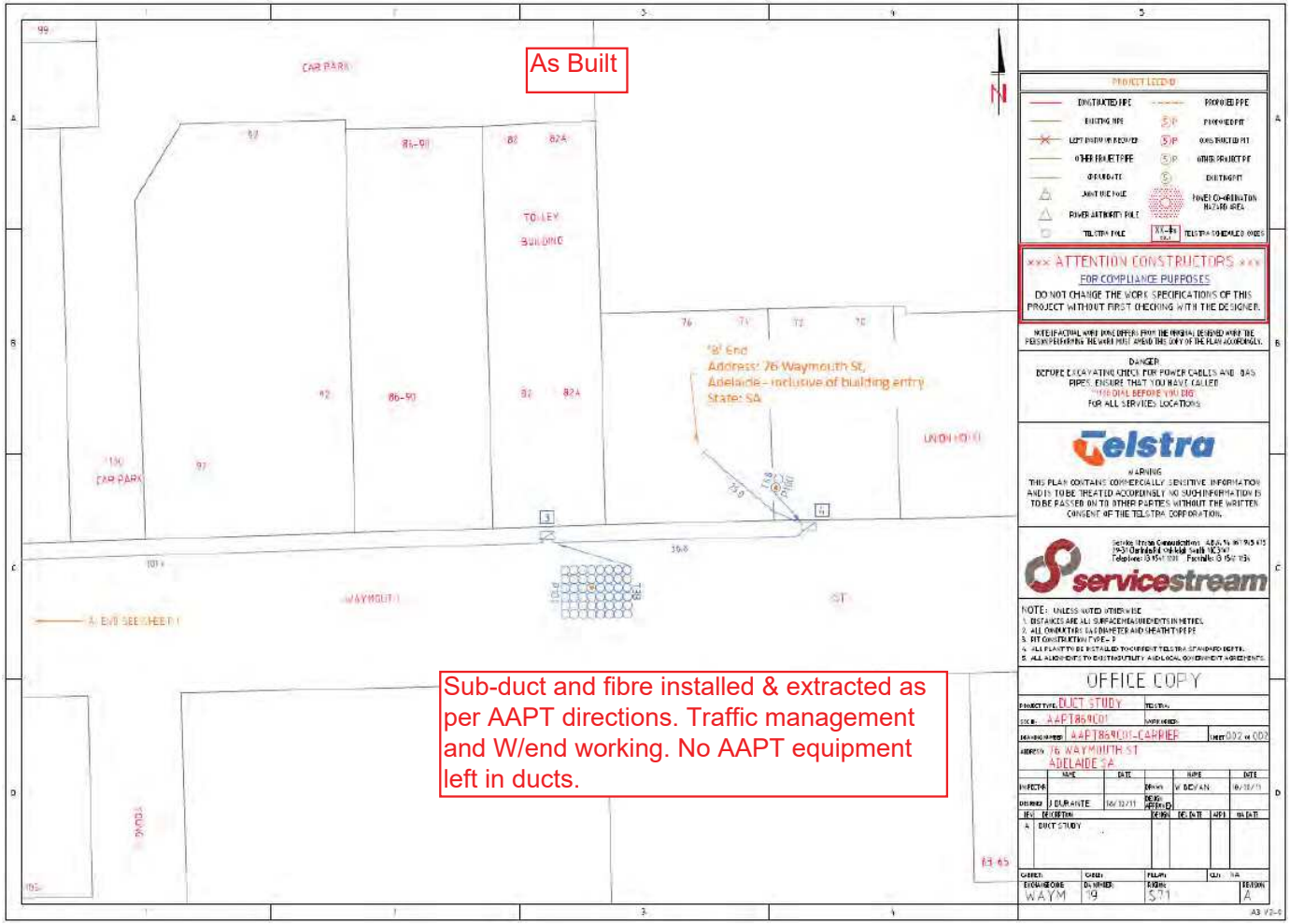
0 0.008km

LEGEND:

- DBYD Work Area
- AAPT Duct
- Non AAPT Duct
- AAPT Manhole

N


As Built
AAPT has an existing breakout from this Telstra pit
New duct requested S/D & Fibre installed & Extracted
Sub-duct and fibre installed & extracted as per AAPT directions. Traffic management and W/end working
PROJECT LEGEND
*** ATTENTION CONSTRUCTORS ***
FOR COMPLIANCE PURPOSES
DO NOT CHANGE THE WORK SPECIFICATIONS OF THIS PROJECT WITHOUT FIRST CHECKING WITH THE DESIGNER
Telstra
WARNING
servicestream
OFFICE COPY
DUCT STUDY
AAPT869C01-CARRIER
76 WAYMOUTH ST ADELAIDE SA
WAYM


As Built
'B' End
Address: 76 Waymouth St,
Adelaide - inclusive of building entry
State: SA
Sub-duct and fibre installed & extracted as per AAPT directions. Traffic management and W/end working. No AAPT equipment left in ducts.
OFFICE COPY
DUCT STUDY
AAPT869C01
AAPT869C01-CARRIER
76 WAYMOUTH ST
ADELAIDE SA

AAPT CABLE LOOPS - ADELAIDE

SCALE

Gus Barker – (08) 8418 9506
NDC (Western Region)
WIDEBAND
Issue 6 – updated 30th May, 2002.
G:/Optical/Wideband/Aapt/Cityloop.dwg

30/11/2018

Ms Sophie Hambour
Agon Environmental
3/224 Glen Osmond Road
Fullarton 5063 SA

Dear Ms Sophie Hambour

DIAL BEFORE YOU DIG – JOB: 15392229 **SEQ:** 78129279

Thank you for your request on 30/11/2018 16:11 , regarding the location of telecommunication services. You requested the information for the below area:

Address: Waymouth Street
Suburb: Adelaide
State: SA

Additional Information: Preliminary Site Investigation desktop research.

YES – We can confirm that the Vocus Group has fibre optic services within the vicinity

Please find attached a copy of the services plan for the location of the works. Please note that these plans have a life of 30 days from the date you requested (above), as future works may affect your enquiry.

IMPORTANT INFORMATION

Drawings and Plans provided by the Vocus Group are reference diagrams which were correct at the time the asset was built. Exact ground cover and alignments cannot be provided with any certainty, as these may alter over time. Depths of Telecommunications plant vary considerably as do alignments. The plans provided are to be used as a guide only. It is essential to uncover / pothole the asset and positively identify the assets exact location.

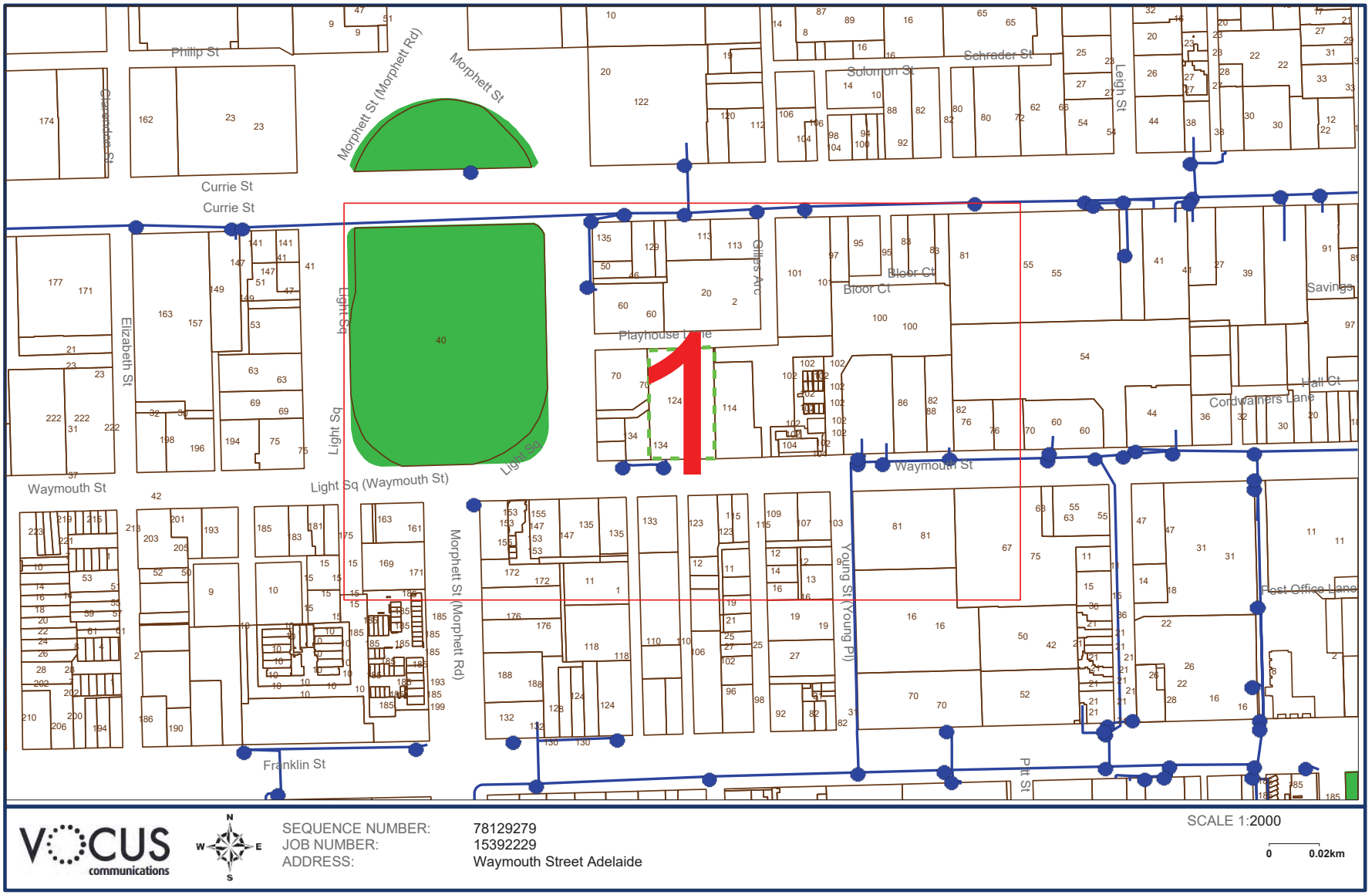
Please call 1800 262 663 for any general enquiries about the information provided within this response.

Yours sincerely,

Vocus Group DBYD Team

EMERGENCY CONTACT: 1800 262 663

OVERVIEW

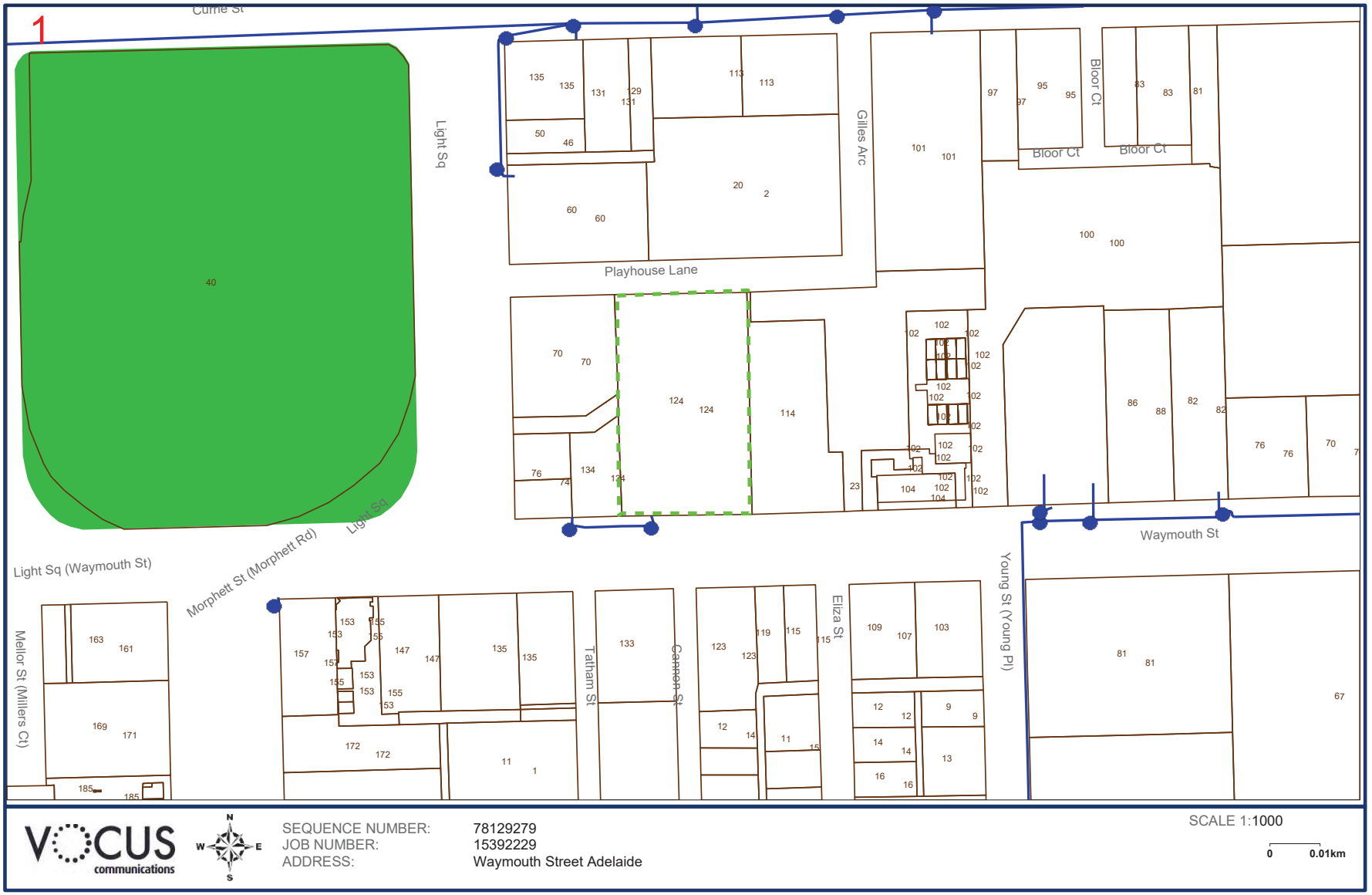


VOCUS communications

SEQUENCE NUMBER: 78129279
JOB NUMBER: 15392229
ADDRESS: Waymouth Street Adelaide

SCALE 1:2000

0 0.02km



VOCUS communications

SEQUENCE NUMBER: 78129279
JOB NUMBER: 15392229
ADDRESS: Waymouth Street Adelaide

SCALE 1:1000

0 0.01km

LEGEND

The below legend indicates the different layers within the map.

●	Vocus Group Pit
———	Vocus Group Conduit

Dial Before You Dig (DBYD)
Location Information

To:
Agon Environmental - Ms Sophie Hambour
3/224 Glen Osmond Road
Fullarton SA 5063

Enquiry Details	
Utility ID	50800
Sequence Number	78129284
Enquiry Date	30/11/2018 16:11
Response	**HIGH RISK – DO NOT CONTINUE WORK**
Address	Waymouth Street Adelaide
Location in Road	Not Supplied
Activity	Manual Excavation

Enquirer Details			
Customer ID	1706191		
Contact	Ms Sophie Hambour		
Company	Agon Environmental		
Email	sophie.hambour@agonenviro.com.au		
Phone	0401810835	Mobile	0401810835

Underground cable locations
ASSETS FOUND

The process:

1. You made an enquiry with Dial Before You Dig (1100).
2. Dial Before You Dig referred your enquiry to SA Power Networks (South Australia's Distribution Network).
3. SA Power Networks has checked their records and have found underground assets in your request area.
4. **DO NOT CONTINUE WORK UNTIL YOU RECEIVE FURTHER NOTIFICATION FROM SA POWER NETWORKS.**
5. Your DBYD request is in the vicinity of critical SA Power Networks infrastructure. To help you excavate safely SA Power Networks will send further information to assist you to define and locate these critical assets.

   Expect to receive a further response within 2 working days.

   If your excavation needs to be undertaken in emergency conditions, please call SA Power Networks cable locations on (08) 8292 0218 (7am – 4pm) or Emergency Dispatch on 131366 out of business hours.

Please note: Underground services in the vicinity of any proposed earthworks must be located by hand digging (pot-holing) prior to the commencement of works. Persons conducting works will be held responsible for any resulting loss or damage to the services associated with infrastructure

Important information and conditions of use for users of underground services information supplied by SA Power Networks

Indicative information only

The accompanying information is intended only to indicate the presence of SA Power Networks' underground services and/or to convey general indicative information in respect of the location marked on the plans. **The information does not necessarily provide current, comprehensive or accurate description or location of the underground services or associated infrastructure.**

The information may also describe or indicate the presence of underground services or infrastructure not owned by SA Power Networks, for example, electrical services connected to an SA Power Networks' service point. SA Power Networks takes no responsibility for services or infrastructure that is not owned or operated by SA Power Networks or the accuracy or completeness of their description or location in the accompanying information.

Additional technical information may be requested from SA Power Networks for planning or engineering design (non-digging) purposes. Such requests are to be directed to SA Power Networks Builders and Contractors Electrical Service Line (1300 650 014).

Identifying the location of underground services
Working near or around live electrical cables can be hazardous. **An on-site assessment is strongly recommended prior to undertaking ANY works and is necessary to determine the location of the underground services.** This can be undertaken by SA Power Networks or an alternative professional locating service provider. Enquiries can be made about SA Power Networks' cable location service by telephoning (08) 8292 0218.

Restrictions may apply in regard to your excavation particularly if your excavation is greater than 300mm below ground level and less than 3.0m from an SA Power Networks asset. Further explanation regarding restricted exclusion zones can be found at *http://www.sapowernetworks.com.au/public/download.jsp?id=1775* OR search sapowernetworks.com.au for NICC 404 and by referring to the figures on pages 10, 11 or 12.

Underground services in the vicinity of any proposed earthworks must be located by hand digging (pot-holing) prior to the commencement of the works. Persons conducting works will be held responsible for any resulting loss or damage to the services or associated infrastructure.

Working near high voltage 66kV underground cables
Persons intending to conduct earthworks in the vicinity of an SA Power Networks high voltage 66kV underground cable MUST first obtain a site-specific clearance by contacting the SA Power Networks Cable Management Technical Officer on 0403 582 130 or 0403 582 174.

Basis of information supply
The accompanying information is supplied at the request of, and is only provided for use by, the requestor. The information is valid for 30 days from the date of issue.

SA Power Networks, its employees, agents and contractors shall accept no responsibility for any inaccuracy or incompleteness in the information provided or liability in respect of any personal injury, death, loss or damage to any real or personal property or otherwise that arises out of or in connection with, directly or indirectly, the provision of or reliance upon the information.

It is the requestor's responsibility to ensure that the information provided accords with the area depicted on the requestor's Dial Before You Dig request. The information provided should not be used in respect of any area outside of the area depicted on the Dial Before You Dig request. SA Power Networks does not warrant that the information is suitable for the requestor's intended purposes.

Any use of the accompanying information is subject to the requestor's agreement to the conditions contained in this document. Upon acceptance of these conditions, SA Power Networks grants the requestor permission to use the information. The information must be returned to SA Power Networks if the conditions are not accepted.

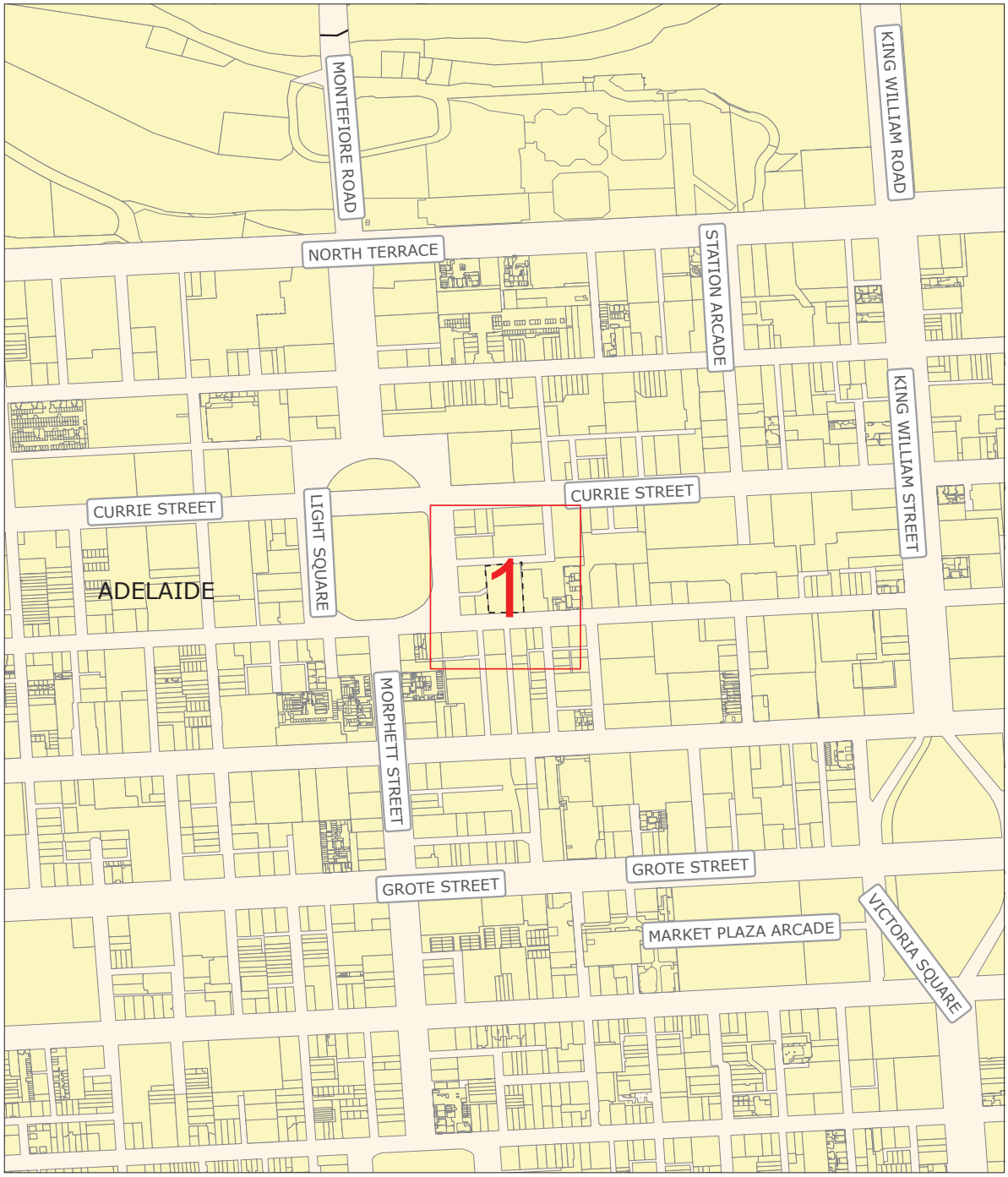
Important note: It is an offence under the Electricity Act 1996 (SA) to cause damage to or interfere with electrical infrastructure

Date: 30/11/2018

Overview Map

Sequence No: 78129284

Waymouth Street Adelaide



Disclaimer: The Plan/Sketch is supplied at your request and is subject to your agreement that SA Power Networks shall not be liable or responsible for the correctness or otherwise of any such information supplied pursuant to this request. Upon acceptance of this condition SA Power Networks grants you permission to use the Plan/Sketch as a guide to the location of SA Power Networks assets. The Plan/Sketch must be returned to SA Power Networks if you fail to accept the conditions of use.

N

0 0.06km

LEGEND:

1 Detail Map

DBYD Requested Area

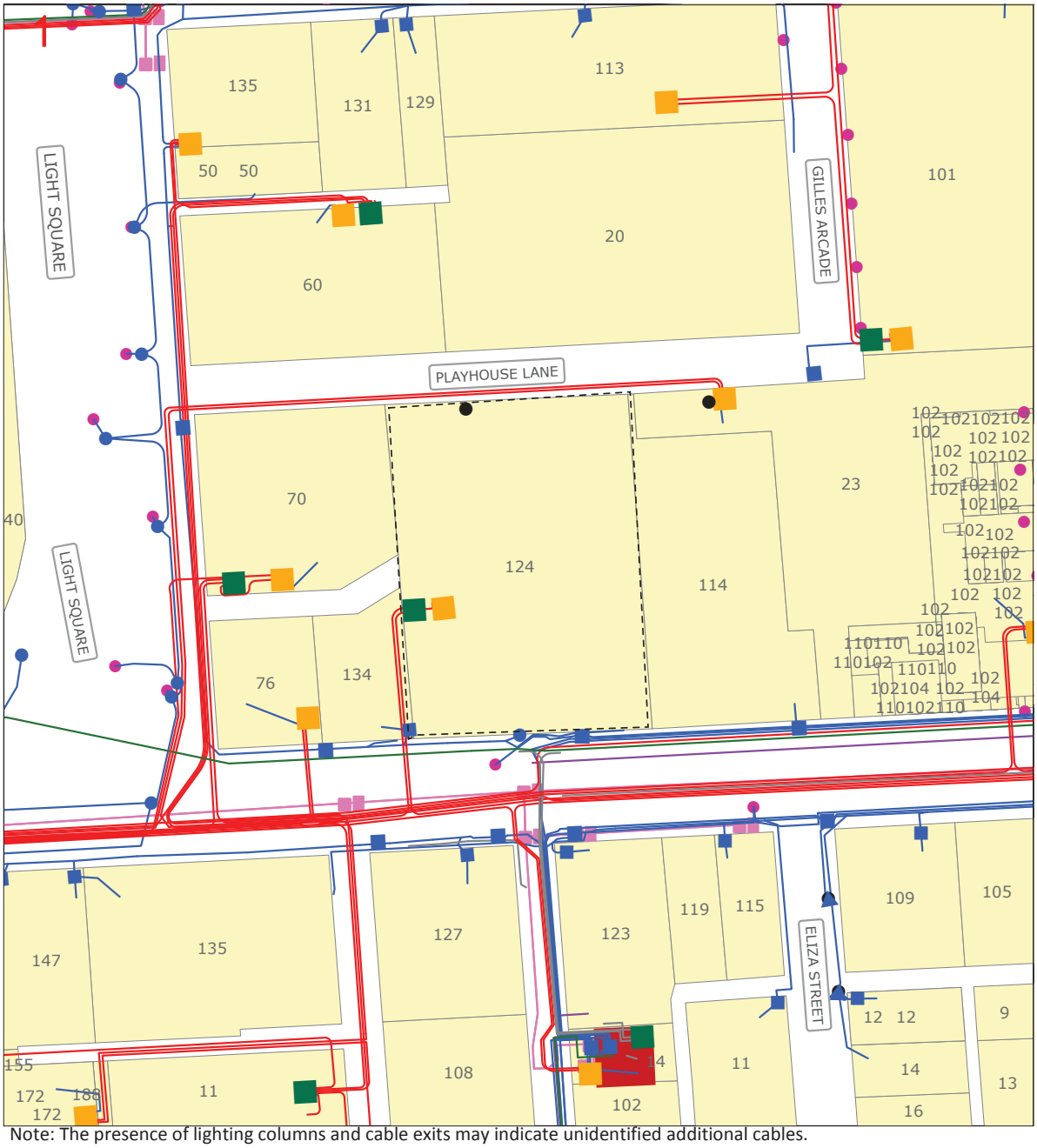
Powered by dbyd

Date: 30/11/2018

Map 1

Sequence No: 78129284

Waymouth Street Adelaide



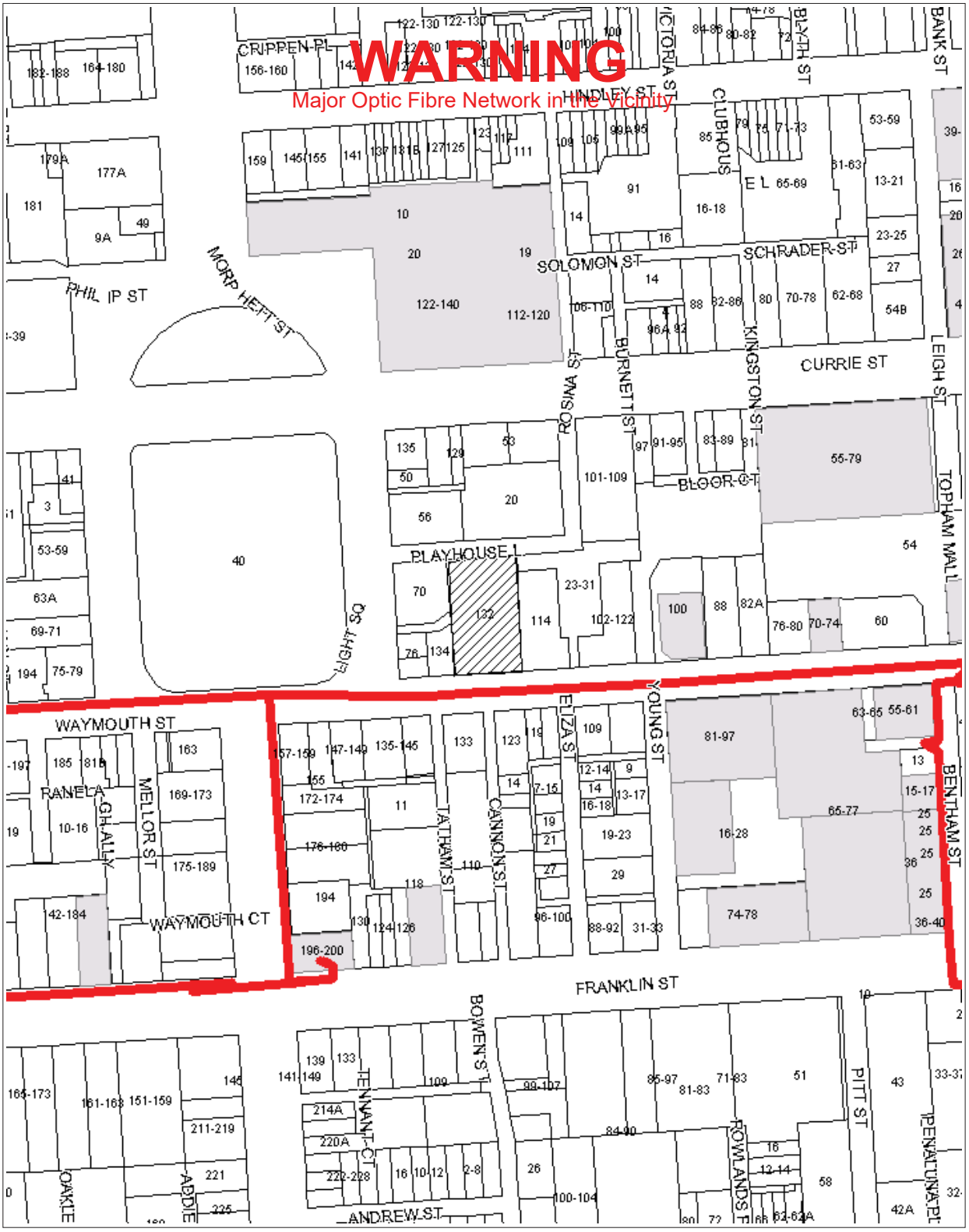
Note: The presence of lighting columns and cable exits may indicate unidentified additional cables.

LEGEND:

Cable Exits	Cables		
66kV/132kV	66kV/132kV	DBYD Requested Area	Fibre Optic Cable/Duct
33kV	33kV	HV Switching Cubicle	Fibre Manhole/Pit
19kV	19kV	Transformer Cubicle	Pilot Cable
11kV	11kV	Cable Joint Bay	Pilot Manhole/Pit
7.6kV	7.6kV	LV Switching Cubicle/Pit	Substation
Not In Service	Not In Service	Service Pit/Pillar	Electricity Pole
Low Voltage	Low Voltage	Earthing Grid	Light Column

N

0 0.009km



Sequence Number: 78129286

Date Generated: 30/11/2018

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

APA Group
PO Box 6014 Halifax Street
South Australia 5000

30/11/2018

Agon Environmental
Ms Sophie Hambour
3/224 Glen Osmond Road
Fullarton
SA 5063

sophie.hambour@agonenviro.com.au

Dear Ms Sophie Hambour

Sequence Number: 78129287
Worksite Address: Waymouth Street
Adelaide
SA 5000

Thank you for your Dial Before You Dig enquiry regarding the location of Gas Assets, we can confirm that the APA Group's Network's Division has **Critical Gas Assets** in the vicinity of the above location.

You are hereby notified that **before you commence any works** you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA asap

As laid out in the **Duty of Care** requirements supplied, any activity in the vicinity of Critical Gas Assets operated by APA requires a Third Party Works Authorisation and potentially attendance on site by an APA representative during any work. Please ensure you read and comply with all the relevant requirements. Should you have any questions with regards to the attached information please contact our DBYD officer - (08) 8115 4500.

Caution - Damage to gas assets could result in possible explosion and fire with the risk of personal injury.
For Gas Emergencies please call 1800 GAS LEAK (1800 427 532)

Please find enclosed the following information:-

- APA's Duty of Care, If you are unclear of your obligations under these requirements please contact the APA Representative listed above immediately
- An overview map with your requested area highlighted to assist in locating APA's Gas Assets
- A map(s) showing APA's Gas Assets in the requested area, this information is valid for 30 days from the date of this response, **please check this represents the area you requested**, if it does not, please contact the APA Representative listed above immediately
- A 'Work In The Vicinity Of Critical Gas Assets' request form, please complete and forward to APA asap via DBYDNetworksAPA@apa.com.au, Fax (08) 7131 0132 or the address above

The outcome of this request maybe that a qualified APA Group Representative will be required on site when you undertake your proposed works, if this is the case, this will need to be arranged dependent on their availability. Whilst we will aim to facilitate this within 2 business days from a decision, **this cannot be guaranteed.**

Please Note: For some DBYD enquiries, you might receive 2 responses from the APA Group. Please read both responses carefully as they will relate to different assets. It is your responsibility to action all requirements set out in APA Group responses.

Please take some time to review the entire response document and check the information supplied and please let us have any feedback by sending an email to *DBYDNetworksAPA@apa.com.au* or contacting us direct on (08) 8115 4500.

Duty of Care - Working Around Gas Assets

General Conditions

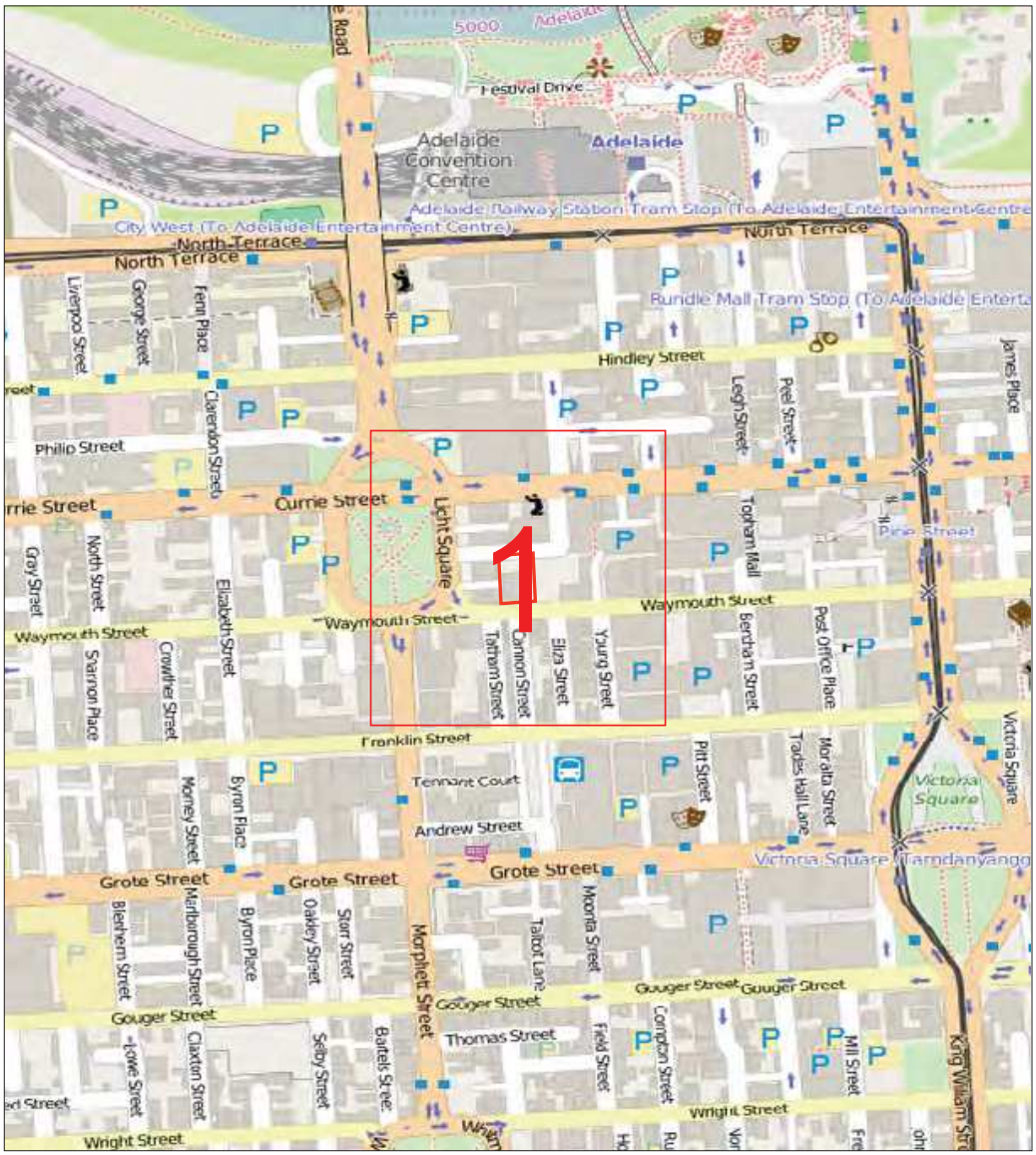
- This location enquiry is valid for 30 days from the date of this response
- Expired locations, i.e., over 30 days from the date of this response, require a new Dial Before You Dig request to validate location information
- The location information supplied in this document shall be used as a guide only. APA Group shall not be liable or responsible for the accuracy of any such information supplied pursuant to this request
- It is the responsibility of the excavator to expose all Gas Assets, including Gas Services pipelines (see below), **by hand** (Please Note: Do not use vacuum excavation systems as damage to Gas Assets may occur). Gas Asset depths may vary according to ground conditions
- Gas Service pipelines (inlet service) connecting Gas Assets in the street to the gas meter on the property are typically **not** marked on the map
- Generally, a map of the Gas Service pipeline (inlet service) connection can be found inside the gas meter box
- This information has been generated by an automated system based on the area highlighted in your DBYD request and has not been independently verified. **It is your responsibility** to ensure that the information supplied in this response matches the dig site you defined when submitting your Dial Before You Dig enquiry. If the information does not match the dig site or you have any question, please contact APA immediately using the details listed on the first page and / or please resubmit your enquiry
- For **Gas Emergencies** please call **1800 GAS LEAK (1800 427 532)**

Critical Gas Assets - Conditions

It is your responsibility to follow these important conditions when working in the vicinity of Critical Gas Assets:-

- **PRIOR** to any work commencing, a 'Work In The Vicinity Of Critical Gas Assets" request form **must be submitted** to APA Group, see form attached.
- Once submitted, if you have not received any response from APA within 2 business days please contact us immediately via (08) 8115 4500
- If a qualified APA Group Representative is required on site when you undertake your proposed works, this will need to be arranged dependent on their availability.
- Whilst we will aim to facilitate this within **2 business days** from a decision, **this cannot be guaranteed**. Charges for APA Group supervision may apply
- Penalties apply to excavators commencing work in the vicinity of Critical Gas Assets **prior to receiving an APA Group 'Third Party Works Authorisation'**

Site Address	Waymouth Street Adelaide 5000	**Sequence No**	78129287
Name	Ms Sophie Hambour		
Email	sophie.hambour@agonenviro.com.au		



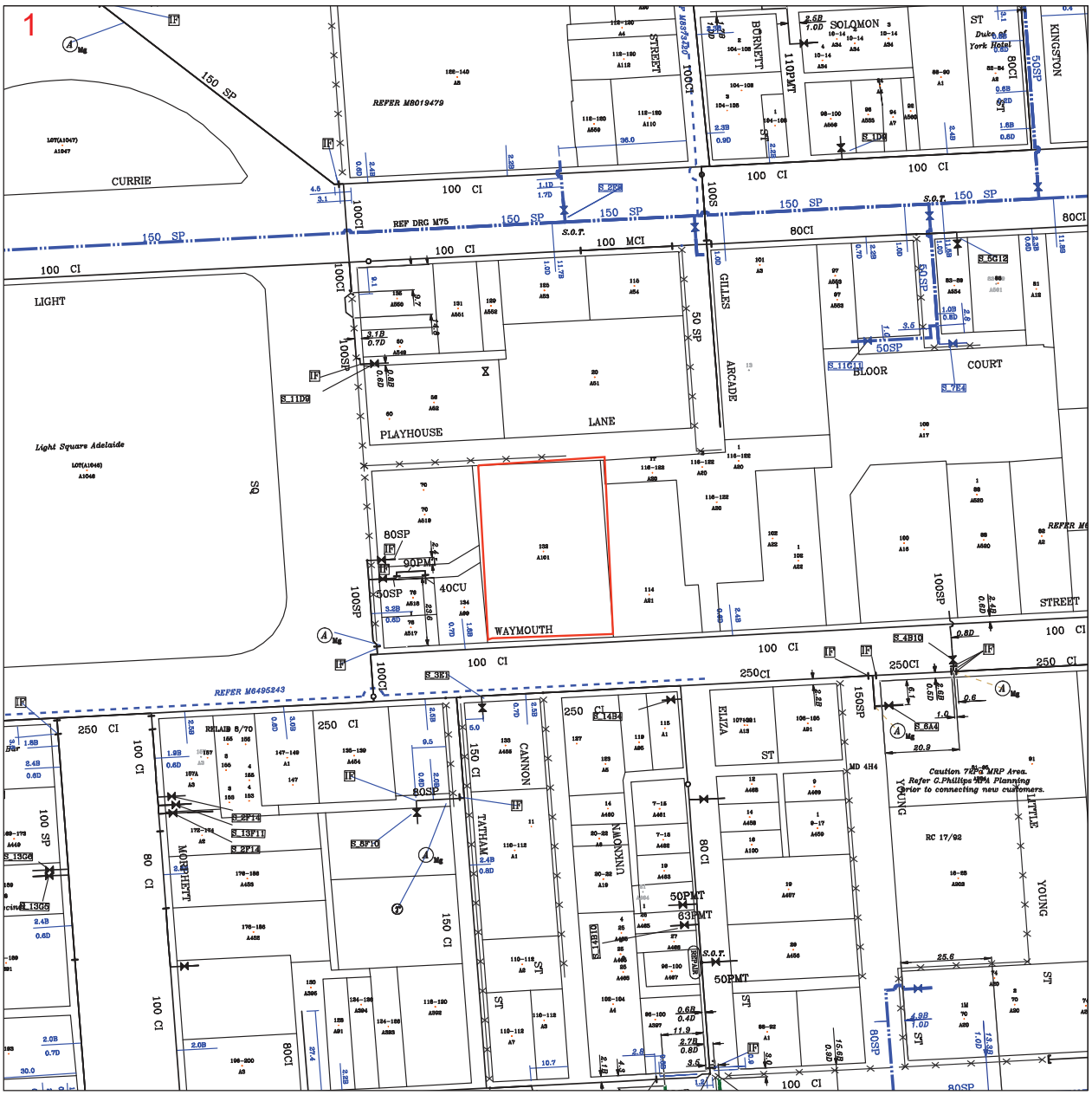
Scale 1: 6000	NORTH	Enquiry Area Map Key Area

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step

operated by apa

Site Address	Waymouth Street Adelaide 5000	**Sequence No**	78129287
Email	sophie.hambour@agonenviro.com.au	**Map Reference**	UbdAde 118D11

Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA asap



ITEM	SYMBOL	TERMS	ITEM	SYMBOL
LOW PRESSURE 1.2 - 1.7kPa		B = BOUNDARY	DIAL BEFORE YOU DIG REQUESTED AREA	
MEDIUM PRESSURE 35 - 100kPa		D = DEPTH	PRIORITY MAIN COVERAGE	
HIGH PRESSURE 70 - 350kPa		Bok = BACK OF KERB		
TRANSMISSION PRESSURE 900 - 15000kPa		Fok = FRONT OF KERB		
PROPOSED MAIN (COLOUR BY PRESSURE)				
ABANDONED MAIN				

Map Key

1

Scale 1:1000

0 0.01km

NORTH

30/11/2018 05:14:27 AM

Dear Sir/Madam,

Sequence Number: 78129289

Primus Telecom have existing underground assets located within the area you have identified.

The Primus asset is contained in the Telstra duct / conduit network and to an adjacent Primus Pit.
It is your responsibility that this duct is physically located by Telstra.

The Primus conduit has a minimum 450mm cover to the Finished Ground Level.

Attached is a drawing identifying the location of the Primus Pit and conduit.

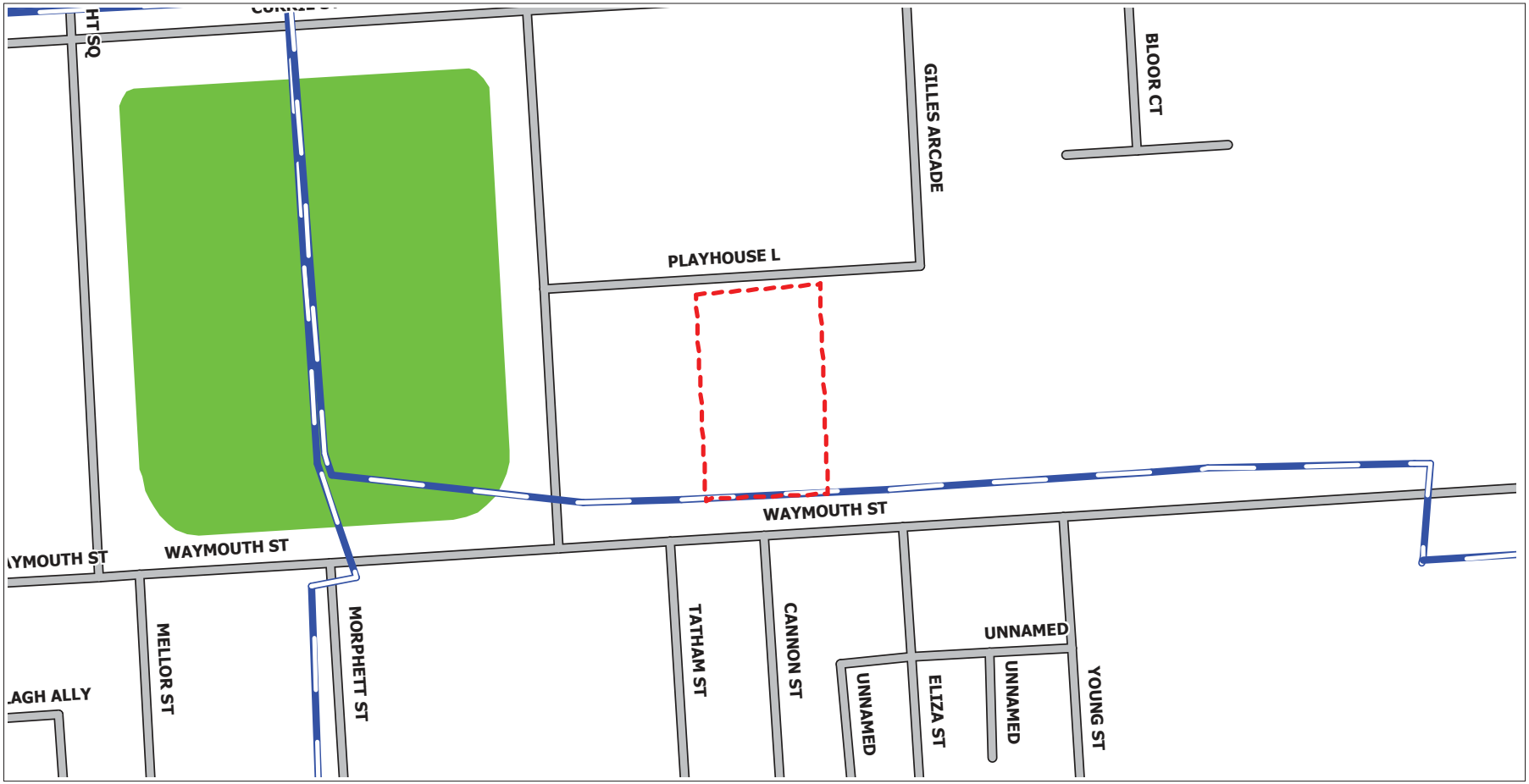
Please ensure excavating within two (2) metres of Primus assets is by hand method only.

Thank you for your inquiry.

Primus Telecom

Assets Affected

Sequence Number : 78129289 Waymouth Street, Adelaide, SA, 5000



Create Date: 30/11/2018

Scale: 1:1500

DISCLAIMER:

This document has been prepared solely for the use of Primus Telecom Pty Ltd for use in maintaining Primus facilities it has not been created for any other use. It should be scaled to locate Primus assets. No warranty is given that the information is accurate or complete.

Legend

Manhole Point
Cable Line
Road Area

OPTUS

DIAL BEFORE YOU DIG www.1100.com.au

Optus Contract Management Team
Unit 9, 677 Springvale Road
Mulgrave, Victoria, 3178

Date: 30/11/2018
To: Ms Sophie Hambour
Company:
Address: 3/224 Glen Osmond Road
Fullarton, SA 5063

ENQUIRY DETAILS
Location: Waymouth Street, Adelaide, SA 5000
Sequence No.: 78129286
DBYD Reference: 15392229

In relation to your enquiry of the above location, Optus advises as follows:

Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).

PLEASE NOTE THAT THE ASSETS IN THIS AREA ARE OF NATIONAL SIGNIFICANCE. Any interference with these assets has the potential to significantly disrupt communications in Australia and may be an offence under the Criminal Code Act 1995.

This reply is valid for a period of 30 days from the date above.

IMPORTANT INFORMATION
Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.

You MUST engage the services of one of the Optus Asset Accredited Locators to carry out asset location (refer to list of Accredited Locators at the end of this DYBD response).

Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.

DUTY OF CARE
When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

a) Obtain location drawings (through the Dial Before You Dig process) of any existing Optus assets at a reasonable time before any planned works begin;

b) Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and

c) Contact Optus for further advice where requested to do so by this letter.

DAMAGE TO ANY OPTUS NETWORK MUST BE REPORTED TO 1800 500 253 IMMEDIATELY
You, your head contractor and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

Optus reserves the right to recover compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).

ASSET RELOCATIONS
You are not permitted by law to relocate, alter or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth).

Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

APPROACH DISTANCES
On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

a) In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.

b) In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.

c) In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

Type of Works	**Clearance to Physical Location of Optus Asset**
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit. No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite. Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.

Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	Not to be driven across Optus conduits with less than 600mm of cover. Not to be driven across Optus direct buried cable with less than 1.2 meters of cover. Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	Not within 1 meter. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.

ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

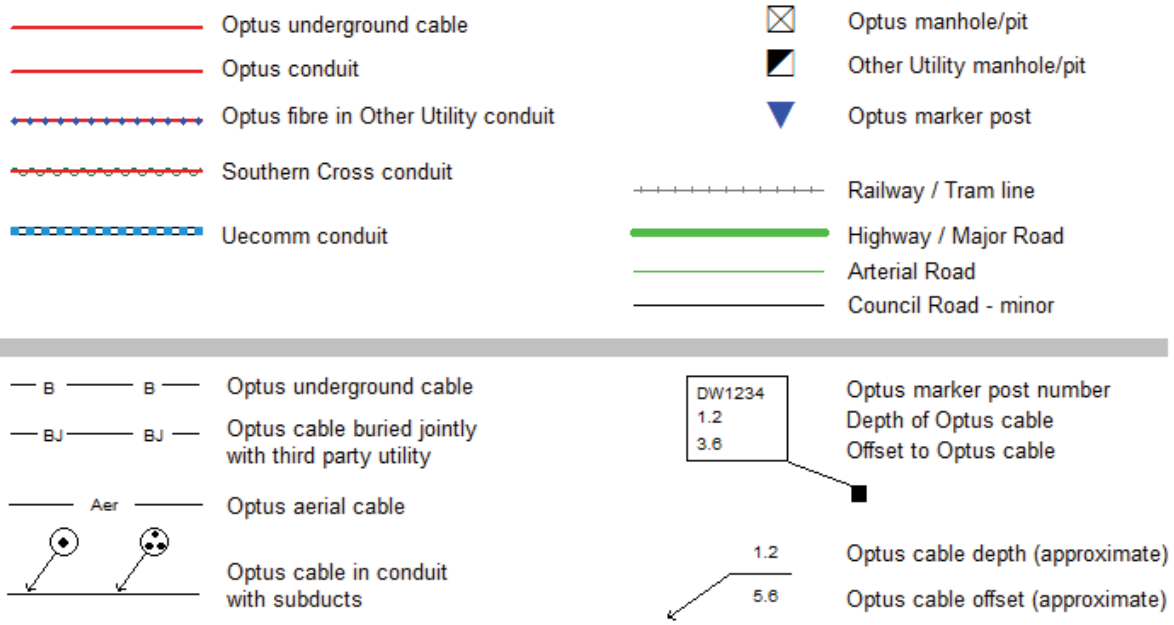
In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

FURTHER ASSISTANCE

Further assistance on asset clearances, protection works or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:
NFODamages&RelocationsDropbox@optus.com.au

Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

OPTUS ENGINEERING DRAWING SYMBOLS



Sequence Number: 78129286

Date Generated: 30/11/2018

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

SOUTH AUSTRALIAN
WATER CORPORATION

Notification number: 15392229
Sequence number: 78129288
Enquiry date: 30/11/2018 4:11:00 PM
Enquiry location: Waymouth Street, Adelaide SA 5000

Ms Sophie Hambour
Agon Environmental
3/224 Glen Osmond Road
Fullarton SA 5063

Dial Before You Dig Response – SA Water Assets Identified

Dear Ms Sophie Hambour

Thank you for contacting Dial Before You Dig **(DBYD)** prior to engaging in work or activities which may affect the water and sewerage infrastructure of SA Water Corporation.

Our records indicate there has been SA Water infrastructure identified within your nominated search area and has been shown on the attached plan.

Disclaimer
The information has been generated by an automated system based on the area highlighted. It is your responsibility to ensure that the dig site is properly defined when submitting your Dial Before You Dig enquiry. If the information does not match the dig site or you have received this message in error please resubmit your enquiry.

This advice and/or information is given for your private use only. The accuracy of the advice and information is not guaranteed and no responsibility is accepted by the crown, the South Australian Water Corporation or their officers, agents or servants for any loss or damage caused by reliance upon this advice and/or information, as a result of any error, omission, incorrect description or statement therein whether caused by negligence or otherwise.

The information contained in this message may be confidential and may also be subject of legal, professional or public interest immunity. If you are not the intended recipient any use, disclosure or copying of this document is unauthorised. If you have received this message in error, please contact Dial Before You Dig.

For further enquiries or assistance with interpretation of plans and search content, or to report any obvious errors with the data provided, please contact our DBYD support team via email dialbeforeyoudig@sawater.com.au

Thank you for contacting DBYD service.

Yours sincerely

Dial Before You Dig Support Team
SA Water Corporation

Please note: Any damage to SA Water infrastructure must be reported immediately to Service Faults and Emergencies (24 hours, 7 days) on 1300 883 121

Government of South Australia

Government of South Australia

SA Water

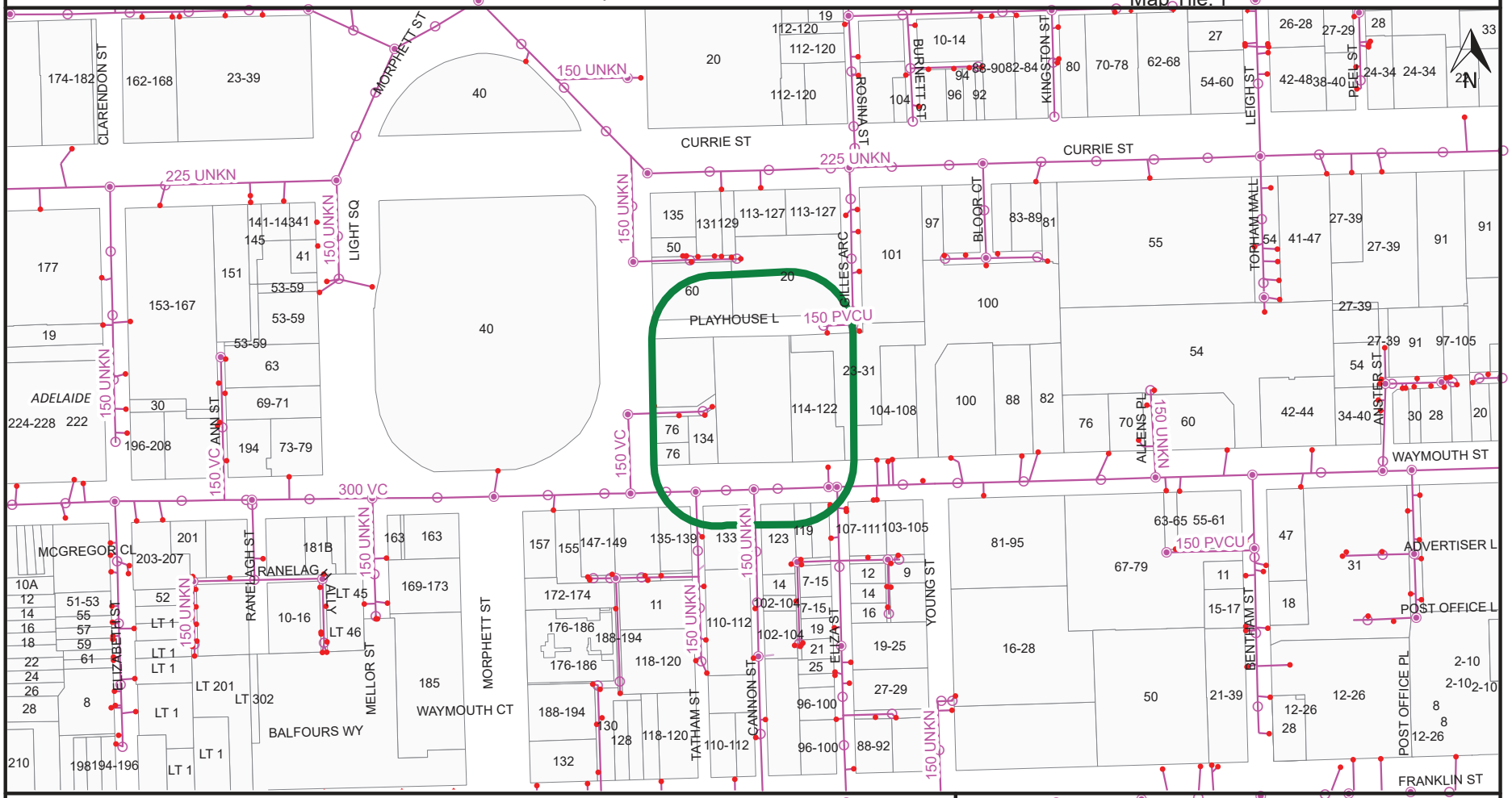
South Australian Water Corporation

WASTEWATER RETICULATION

DBYD Sequence No: **78129288**

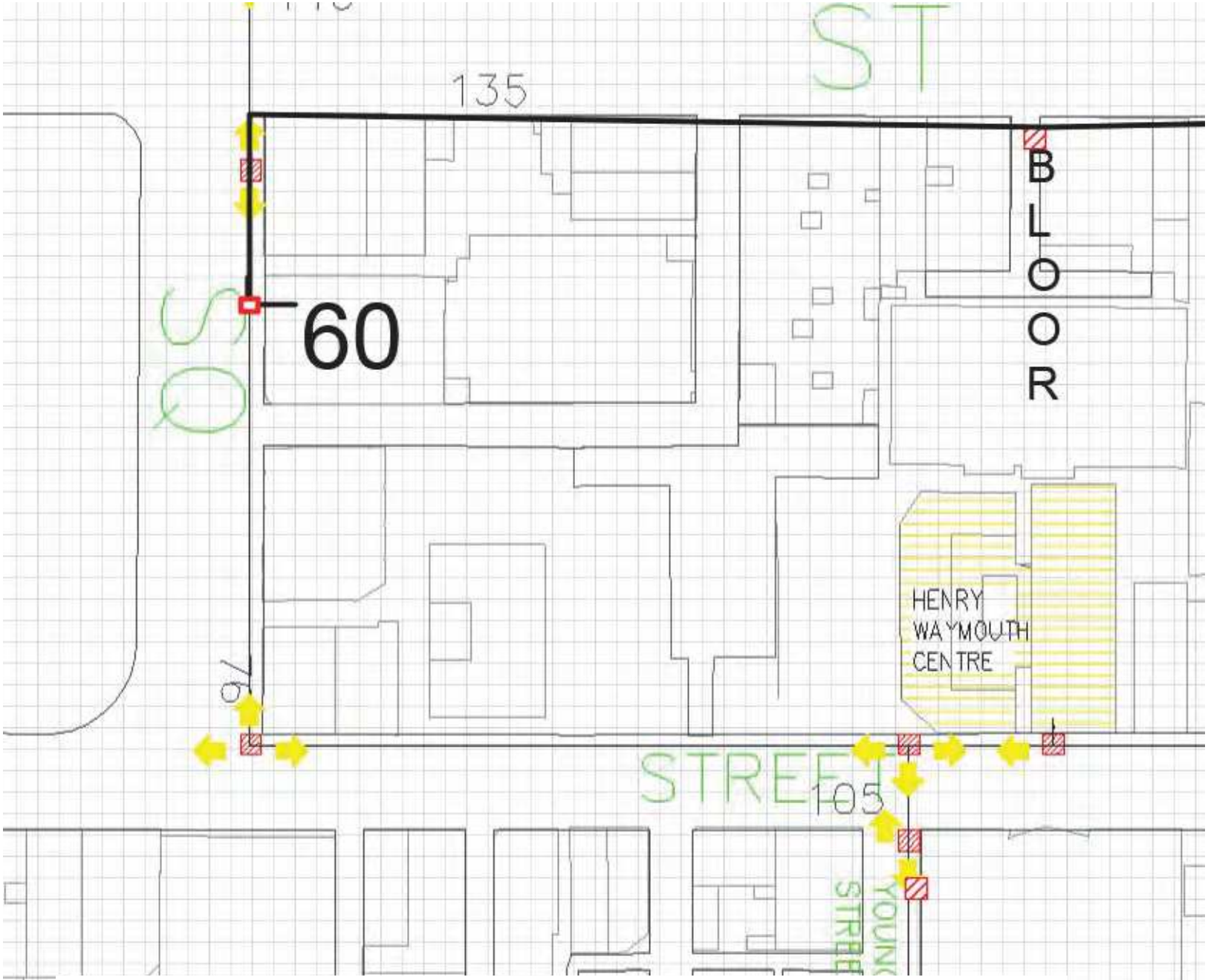
Map Tile: 1

DIAL BEFORE YOU DIG www.1100.com.au



- GIP
- Valve
- Maintenance Hole
- Maintenance Shaft
- Inspection Opening
- Wastewater Connections
- Decommissioned Asbestos Mains
- Ancillary Pipes
- Gravity Mains
- Low Pressure
- Pumping Mains
- Vacuum Mains
- Railway
- Land Parcels
- CP Facility
- CP Anode/Cathode Cables
- CP Electricity Supply Cables
- CP Anode Bed Outlines
- CP = Cathodic Protection

Scale @ A4: 1:2500



Statenet Services has some communications infrastructure in the area indicated below, as per the attached diagram.

If you have any further queries please contact Alex Mugford, Communications Engineer on 8207 2056.

Level 17, PIPE Networks House, 127 Creek Street, Brisbane 4000
PH:(07) 3233 9895 FAX:(07) 3233 9885

DBYD ENQUIRY RETURN:

PIPE Networks **DOES** own or operate telecommunications network infrastructure within the request area detailed above.

The affected network infrastructure is contained within the **Telstra** duct network and can be found listed on the appropriate **Telstra** duct Network plans.

THIS NETWORK IS VITAL TO OUR OPERATIONS AND AS SUCH, IT IS CRITICAL THAT **NO WORKS** COMMENCE WITHIN THE AREA UNTIL YOU HAVE RECEIVED AND APPRAISED THE TELSTRA DUCT PLANS FOR THIS AREA.

Due to continued network expansion, this network information can only be considered valid and accurate for 28 days from issue.

PIPE Networks will seek compensation for any damage to its network through negligence or ignorance of your duty of care.

PIPE NETWORKS
Ph (07) 3233 9895
Email: dbyd@pipenetworks.com
(for information specifically on this job only)

LEGEND

IT'S HOW WE CONNECT

For more info contact a Telstra Accredited Locater or Telstra Plan Services 1800 653 935

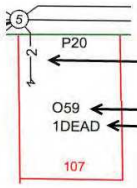
Exchange
(major cable present)

Footway access chamber
(can vary from 1-lid to 12-lid)

or **Pillar/cabinet**
(above the ground / free standing)

Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V electricity.

OC **other carrier**



2 pair lead-in to property from pit in street
1 pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)

Cable jointing pit
(number indicating pit type)

Elevated cable joint
(above ground joint on buried cable)

Telstra Plant in shared utility trench

Aerial Cable
(above ground)

Aerial Cable
(attached to joint use pole e.g. power)

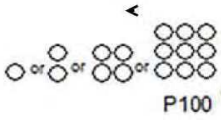
Direct buried cable

M **Marker post installed**

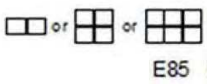
TR **Buried transponder**

MT **Marker, transponder**

SMOF **Optical fibre cable direct buried**



Single to multiple round conduit
Configurations 1, 2, 4, 9 respectively
(Attached text denotes conduit type and size)



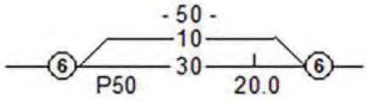
Multiple square conduit
Configurations 2, 4, 6 respectively
(Attached text denotes conduit type and size)

Some examples of conduit type and size:

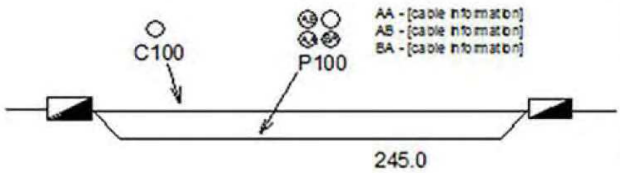
A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.
Conduit sizes *nominally* range from 20mm to 100mm.

P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

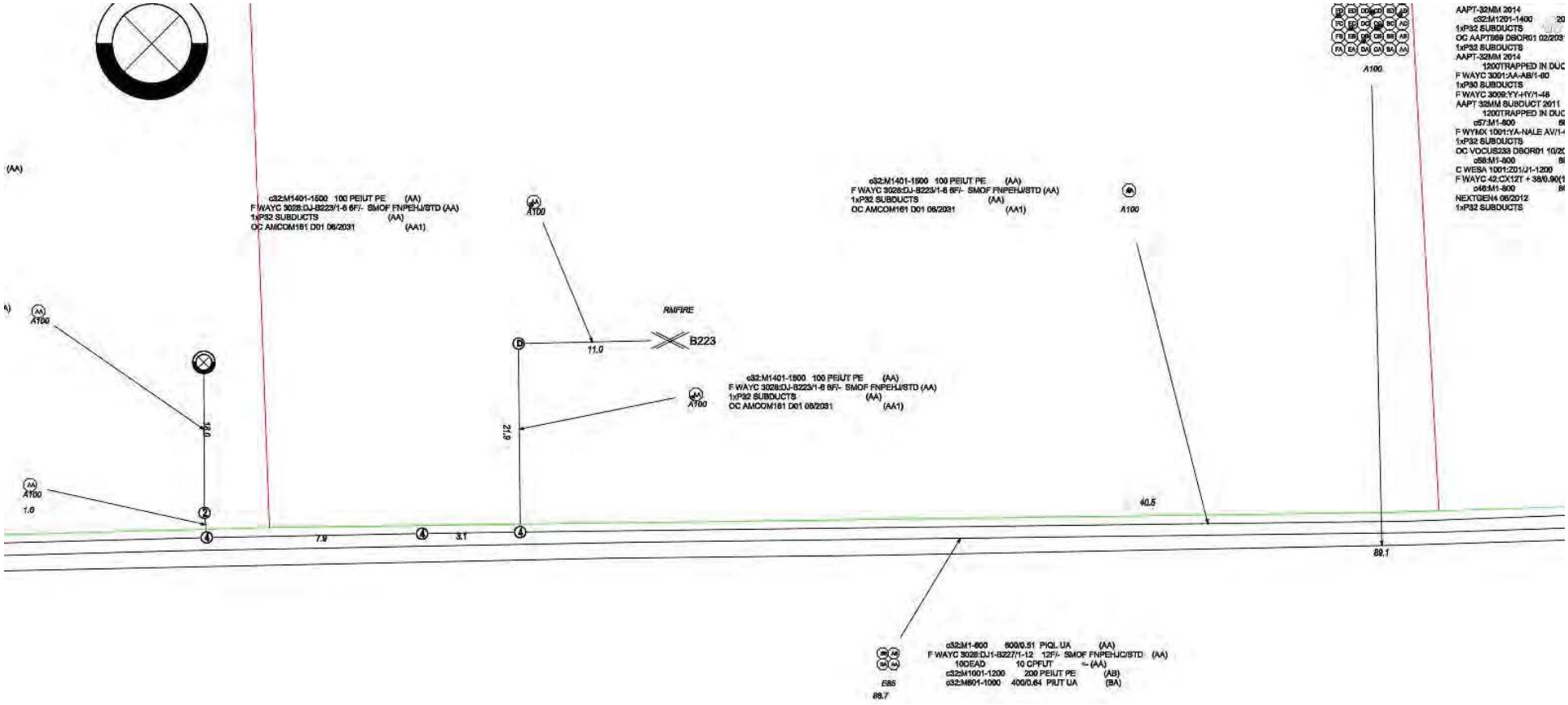
Some examples of how to read Telstra plans:

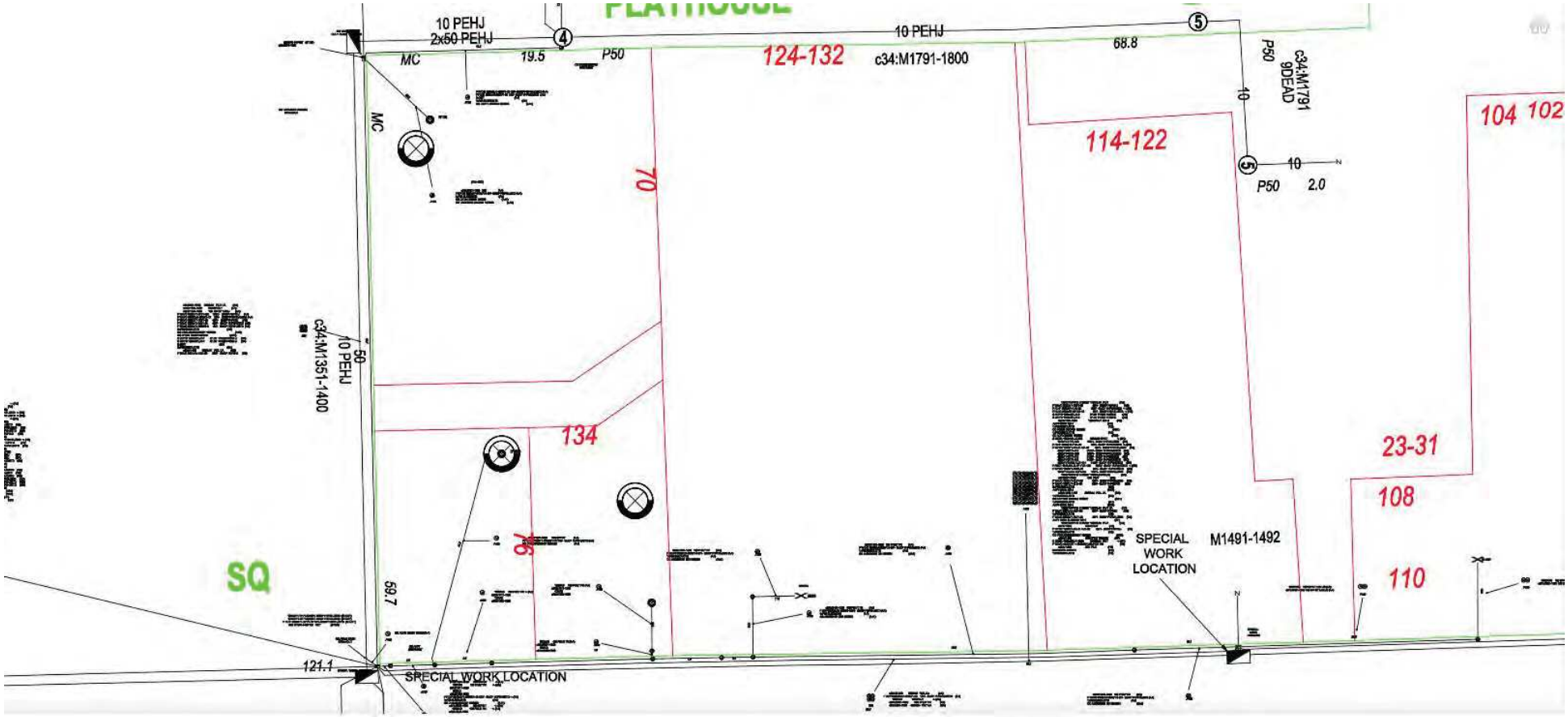


One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, 20.0m apart, with a direct buried 30-pair cable along the same route.



Two separate conduit runs between two footway access chambers (manholes) 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along the same route.


(AA)
c32:M1401-1500 100 PEIUT PE (AA)
F WAYC 3026:DJ-B223/1-6 6F/- SMOF FNPEHJI/STD (AA)
1xP32 SUBDUCTS (AA)
OC AMCOM181 D01 06/2031 (AA1)
A100
RMFIRE
B223
11.0
6.12
1.0
1.0
7.9
3.1
40.5
89.1
89.7
ES6
c32:M1-600 600/0.51 PIQL UA (AA)
F WAYC 3028:DJ1-B227/1-12 12F/- SMOF FNPEHJC/STD (AA)
10DEAD 10 CPFUT ~ (AA)
c32:M1001-1200 200 PEIUT PE (AB)
c32:M801-1000 400/0.84 PIUT UA (BA)
AAPT-32MM 2014
1xP32 SUBDUCTS
AAPT-32MM 2014
1200TRAPPED IN DUC
F WAYC 3001:AA-AB/1-60
1xP30 SUBDUCTS
F WAYC 3008:YY-HY/1-48
AAPT 32MM SUBDUCT 2011
1200TRAPPED IN DUC
1xP32 SUBDUCTS
1xP32 SUBDUCTS
NEXTGEN4 06/2012
1xP32 SUBDUCTS


10 PEHJ
2x50 PEHJ
10 PEHJ
MC
19.5
P50
124-132
c34:M1791-1800
68.8
P50
c34:M1791
9DEAD
MC
70
114-122
10
P50
2.0
104
102
10 PEHJ
c34:M1351-1400
50
134
23-31
108
SQ
76
59.7
SPECIAL
WORK
LOCATION
M1491-1492
110
121.1
SPECIAL WORK LOCATION

APPENDIX D: SA EPA SECTION 7 SEARCH AND PUBLIC REGISTER SEARCH

APPENDIX E: DANGEROUS SUBSTANCE SEARCH

Government of South Australia
SafeWork SA

Licensing, Customer Services Team
Level 4 World Park A
33 Richmond Road
Keswick SA 5035

GPO Box 465
Adelaide SA 5001

DX 715 Adelaide

Phone 1300 365 255
Email licensing.safework@sa.gov.au
ABN 50-560-588-327

www.safework.sa.gov.au

13 December 2018

Sophie Hambour
Agon Environmental Pty Ltd
Unit 3
224 Glen Osmond Road
FULLARTON SA 5063

Dear Sophie

DANGEROUS SUBSTANCES LICENCE SEARCH

PROPERTY DETAILS: 124 WAYMOUTH STREET, ADELAIDE SA 5000

Further to your application for a Dangerous Substance Search dated 30 November 2018 received for the abovementioned site, I advise that there are no current or historical records for this site.

Yours sincerely

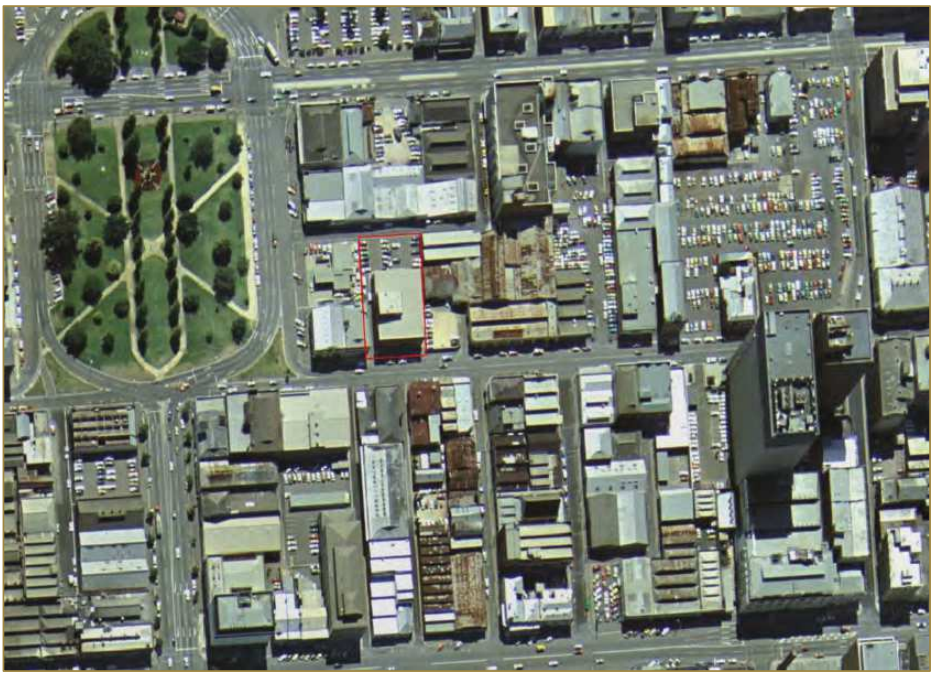
MANAGER
CUSTOMER SERVICES TEAM
SAFEWORK SA

APPENDIX F: HISTORICAL AERIAL IMAGERY

Aerial Photograph 1: 1949
Source: MapFinder (DEWNR)

Aerial Photograph 2: 1959
Source: MapFinder (DEWNR)

Aerial Photograph 3: 1968
Source: MapFinder (DEWNR)



Aerial Photograph 4: 1979
Source: MapFinder (DEWNR)

Aerial Photograph 5: 1989
Source: MapFinder (DEWNR)

Aerial Photograph 6: 1999
Source: MapFinder (DEWNR)

Aerial Photograph 7: 2005
Source: MapFinder (DEWNR)

Aerial Photograph 8: 2018
Source: Property Location Browser

ATTACHMENT E

SUSTAINABILITY MANAGEMENT PLAN

LUCID CONSULTING

LUCID
CONSULTING AUSTRALIA

WEE HUR - STUDENT ACCOMMODATION
124 WAYMOUTH STREET, ADELAIDE

Project No: LCE16015

Sustainability Management Plan

December 2018

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 student accommodation building at 124 Waymouth Street (Adelaide) is a Class 3 building under the National Construction Code which comprises:

- Ground Floor: Entry lobby and reception, admin and office areas, communal areas including study spaces, cinema, kitchen and courtyard, as well as back of house plant
- Level 1: Student accommodation rooms, communal kitchen/dining and tv room, private study rooms, laundry and fitness and wellbeing area
- Levels 2-14: Student accommodation rooms, communal kitchen/dining and tv room and additional breakout areas on and terrace on Levels 12 and 13
- Level 15: Student accommodation rooms, communal kitchen/dining and tv room, communal sky lounge and rooftop terrace for communal gardening
- Level 16: Student accommodation rooms, communal kitchen/dining and tv room and communal sky lounge mezzanine area

The following figure shows the site's location.

Figure 1: Satellite image showing location of proposed building (Source: Google Maps)

1.3 ECOLOGICALLY SUSTAINABLE DESIGN

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
- Energy efficient massing (minimal exposed ceilings and floors)
- External vertical shading fins to protect west-facing glazing in student accommodation rooms, reducing afternoon solar heat gains in summer
- Solar hot water or solar PV system
- Master shutdown switches provided to each sole occupancy unit allowing the lighting, air-conditioning and exhaust fans to be switched off when the unit is unoccupied
- Thermal mass provided through heavyweight construction material and low façade-to-glazing area ratio
- Natural Ventilation and daylight provided to majority of accommodation units
- LED lighting to be used throughout
- Motion sensors for lighting control within common areas
- Water efficient fixtures and fittings (refer to Section 2.6 for proposed WELS ratings)
- Common facilities (e.g. kitchen, cinema, fitness, and laundries) provided to reduce the material demand of building occupants and use space more efficiently, as well as providing a high-quality living environment
- Common courtyard with sports facilities (e.g. basketball) available for residents' use
- Rooftop communal garden for urban farming available for residents' use
- Secure bicycle storage area for residents' use
- Low VOC paints used throughout the building

2 SUSTAINABILITY INITIATIVES

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 and consider objective 30 'Energy Efficiency', of the Adelaide City Council's Development Plan, refer to appendix A.

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, accommodation units will benefit from free heating provided by the sun during winter while minimising solar heat gains during summer.

Energy efficient massing

The massing has been optimised such that the floorplate boundaries of Levels 2 to 14 are identical, which minimises the area of exposed floors and ceilings within apartments throughout the building. Insulation will be applied to all units and common areas where ceilings/floors are exposed to non-conditioned or external spaces above/below.

Figure 2: The building's footprint remains consistent on the majority of floors, resulting in minimal exposed floors and ceilings throughout the building.

2.2 PROVISION OF SHADING

Western windows to student accommodation units are provided with vertical fins, as shown in the images below. This architectural feature element will provide shading to the western glazing, protecting the window from low incident sun angles in the afternoon. This shading strategy, coupled with high performance glazing, will reduce solar gains and cooling loads in summer and increase occupant comfort.

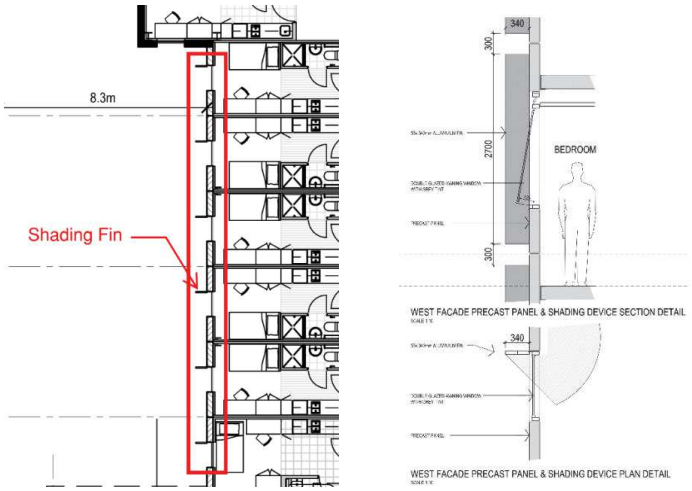


Figure 3: Vertical shading fins to the Western accommodation unit windows

2.3 SOLAR HOT WATER OR SOLAR PV ELECTRICITY

It is proposed to harness renewable solar energy via installation of either a solar hot water plant or a solar PV system. Each option will be further investigated during the detailed design phase. The benefits of each will be quantified to assist in determining which option is the most favourable for this development.

SOLAR WATER HEATING PLANT

This option comprises a roof-mounted array of solar collectors that transfers solar energy to the water within the domestic hot water (DHW) reticulation system, reducing the consumption of gas or electricity that would otherwise be required to meet the building's DHW demand.

The proposed system will have a gas-booster plant to supplement the solar collectors during periods of low solar availability, in an arrangement similar to that shown in the following figure.

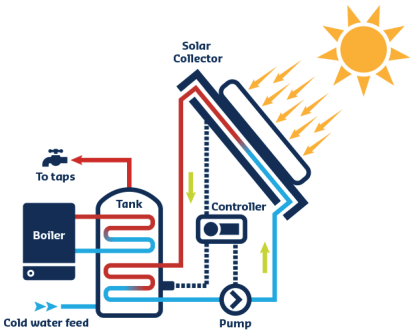


Figure 4: Simplified diagram of proposed solar water heating system.

SOLAR PV SYSTEM

This option comprises solar photovoltaic (PV) panels connected to the building's electrical infrastructure. The PV panels convert 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.

Potential roof space available to solar water heating collectors or solar PV panels, is shown in the following figure.

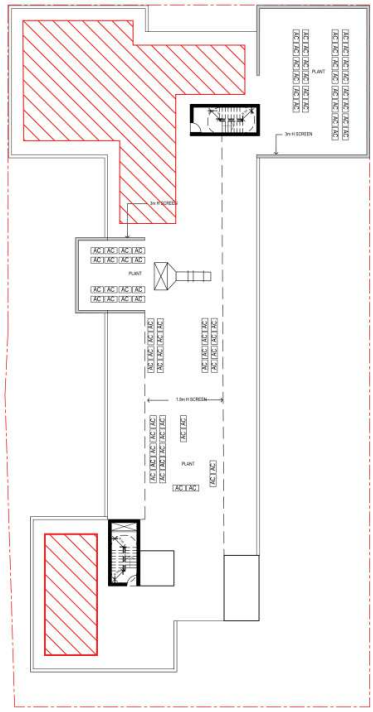


Figure 5: Potential roof areas available to solar collectors or solar PV panels.

2.4 THERMAL MASS

The façade has been designed to consist of a heavyweight construction material. The building also features a low glazing-to-façade area ratio on accommodation levels, as shown in the figure below.

As a result, the building has a high level of thermal mass, which assists in passively maintaining comfortable temperatures within the accommodation units 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 at night time.

Figure 6: The low glazing-to-façade area ratio results in a high thermal mass content, which helps to stabilise internal temperatures.

2.5 NATURAL VENTILATION AND DAYLIGHT

Natural ventilation will be considered for accommodation units 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 accommodation units will also provide daylight to improve visual comfort and reduce energy usage for lighting.

The building is set back from the East/West boundaries to maximise opportunities for an external outlook through accommodation unit and communal area windows. These initiatives are in line with objective 9 of the Adelaide City Council Development Plan for Student Accommodation, refer to Appendix A.

2.6 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. 42%) resulting from the use of these low-flow fittings.

Equipment	Average House		Waymouth St Student Accommodation Building		
	Flow Rate	Daily Consumption	WELS	Flow Rate	Daily Consumption
Taps	9.0 L/min	48 L	5 Star	6.0 L/min	32 L
WC's	8.0 L/flush	48 L	4 Star	3.5 L/flush	21 L
Showers	15.0 L/min	135 L	3 Star	9.0 L/min	81 L
Total	-	231 L	-	-	134 L

2.7 COMMUNAL FACILITIES AND GARDENS

In line with objective 9 of the Adelaide City Council's Development Plan for Student Accommodation (refer to appendix A), high quality communal facilities are provided to occupants to enable a more efficient use of space, such as communal kitchens, dining and tv rooms, and to reduce material consumption (i.e. communal laundry in lieu of washing machine to every unit), whilst providing high quality living environment. Study rooms at ground level, level 1 and within level 15 sky lounge facilitate student life, whilst the cinema, multipurpose, causal lounges, breakout spaces and fitness and wellbeing space promote social interaction.

Figure 7: Communal facilities provided at Ground Floor and Level 1

Communal areas are provided with increased glazing to maximise opportunities for natural daylight and are mostly located adjacent balconies, terraces and courtyard areas to increase access to natural ventilation and private open space.

The building design in a 'U' shape allows for a private sheltered courtyard that includes facilities for sports (e.g. basketball), barbeques, open area and communal gardens. In addition, level 15 houses a rooftop terrace for communal gardening and urban farming.

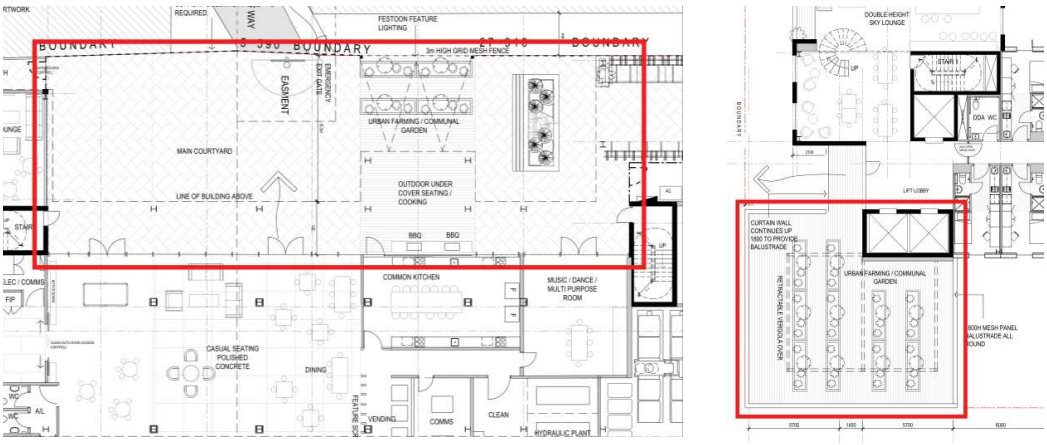


Figure 8: Communal private open space provided at Ground Floor and Level 15

2.8 SUSTAINABLE TRANSPORT

A secure bicycle storage area capable of accommodating 80 bicycles (1 per 10 students) has been proposed at ground floor to facilitate and encourage low-carbon forms of transportation, refer to the figure below. This location has a secure and convenient entry for residents from Playhouse Lane.

This initiative contributes towards achieving the Adelaide City Council's target to achieving a balance between transport options, by providing world class cycling infrastructure with a view to reducing city carbon emissions by 35% by 2020 (from 2006-07 baseline). This is presented in the Council's "Smart Move Transport and Movement Strategy Interim Action Plan 2016-2018"; refer to Appendix B.

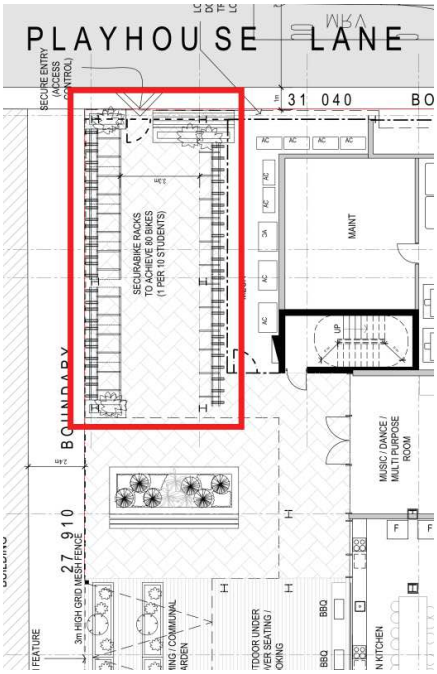


Figure 9: Proposed location of secure bicycle storage at ground floor.

APPENDIX A – EXTRACTS FROM ADELAIDE CITY COUNCIL'S DEVELOPMENT PLAN

Student Accommodation

OBJECTIVE

Objective 9: High-quality student accommodation that creates an affordable, safe, healthy and comfortable living environment.

PRINCIPLES OF DEVELOPMENT CONTROL

10 Residential development specifically designed for the short-term occupation of students may provide reduced internal floor areas, car parking, storage areas and/or areas of private open space provided that:

(a) residents have access to common or shared facilities that enable a more efficient use of space (such as cooking, laundry, common rooms or communal open space);

(b) every living room has a window that provides an external outlook and maximises access to natural light;

(c) the development is designed to enable easy adaptation or reconfiguration to accommodate an alternative use;

(d) the development is designed to maximise opportunities to access natural ventilation and natural light;

(e) private open space is provided in the form of balconies and/or substituted with communal open space (including rooftop gardens, common rooms or the like) that is accessible to all occupants of the building; and

(f) the internal layout and facilities provide sufficient space and amenity for the requirements of student life and promote social interaction.

11 Internal common areas should be capable of being used in a variety of ways to meet the study, social and cultural needs of students.

12 Development should provide secure long-term storage space in both communal and private areas.

13 Student accommodation with shared living areas should ensure bedrooms are of a suitable size to accommodate a single bed, book shelves, a desk and workspace, and a cupboard/wardrobe.

(Extract from p.18)

Energy Efficiency

OBJECTIVE

Objective 30: Development which is compatible with the long term sustainability of the environment, minimises consumption of non-renewable resources and utilises alternative energy generation systems.

All Development

106 Buildings should provide adequate thermal comfort for occupants and minimise the need for energy use for heating, cooling and lighting by:

(a) providing an internal day living area with a north-facing window, other than for minor additions*, by:

(i) arranging and concentrating main activity areas of a building to the north for solar penetration; and

(ii) placing buildings on east-west allotments against or close to the southern boundary to maximise northern solar access and separation to other buildings to the north.

(b) efficient layout, such as zoning house layout to enable main living areas to be separately heated and cooled, other than for minor additions;

(c) locating, sizing and shading windows to reduce summer heat loads and permit entry of winter sun;

(d) allowing for natural cross ventilation to enable cooling breezes to reduce internal temperatures in summer;

(e) including thermal insulation of roof, walls, floors and ceilings and by draught proofing doors, windows and openings;

(f) ensuring light colours are applied to external surfaces that receive a high degree of sun exposure, but not to an extent that will cause glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles;

(g) providing an external clothes line for residential development; and

(h) use of landscaping.

(Extract from p.45-46)

APPENDIX B – EXTRACTS FROM ADELAIDE CITY COUNCIL'S "SMART MOVE" STRATEGY

Balancing transport options

The City of Adelaide will seek to balance the full range of transport options including public transport, pedestrians, motor vehicles, cyclists and two-wheeled vehicles. Actions will focus on meeting the needs of multiple movement forms and will not disadvantage a particular transport type. In particular, infrastructure will be installed to minimise impacts on car parking, public safety, accessibility and traffic flow, with every effort made to mitigate unavoidable impacts.

Sourced directly from the City of Adelaide's Strategic Plan 2016-2020, which states a desired future for Adelaide to be the easy movement of people into, out of and around the city. Achieving a better balance between the full suite of transport options including vehicles, public transport, cycling and walking is vital to a prosperous city. Achieving this balance between various modes of transport is a key refinement outlined by this Smart Move Interim Action Plan 2016-18.

(Extract from p.14)

Cycling

North-south bikeway (6)
Design and implement the Frome Street, Frome Road and Lefevre Terrace bikeway route, including reconstruction of the existing Frome Bikeway to accommodate four lanes of traffic during peak periods in collaboration with DPTI.

East-west bikeway (7)
Assess east-west bikeway route options; and select, design and implement a preferred route in collaboration with DPTI.

Public bike share scheme study
Undertake a feasibility study to research, identify and assess point to point public bike share options, whilst continuing to operate the Adelaide Free Bike scheme.

Bikeways network implementation plan
Research, plan and prioritise a City of Adelaide Bikeways Network to guide future bikeway projects.

End of trip bike facilities
Install racks and/or on-street bike parking nodes where demand is high and impact on car parking and pedestrians is low.

Cycling education and promotion
Promote and encourage safe cycling via a range of activities and events, including annual cordon counts.

(Extract from p.19)

4. Cycling

Strategic Plan 2016-2020 Alignment:

- Create world class infrastructure by adopting a three year rolling capital works program for the City and Park Lands to ensure all new and existing infrastructure are delivered and maintained to high quality standards, incorporating universal access, technology, heritage, arts and green elements.
- City carbon emissions will be reduced by 35% from the 2006-07 baseline by 2020, on the way to an 80% real reduction by 2040.
- Plan and deliver priority walking and cycling routes throughout and beyond the city and Park Lands, including the provision of East-West and North-South cycleways and connections.
- Plan and seek partnerships for major city infrastructure projects, including cycling corridors, major transport routes, laneways and city squares.

(Extract from p.32-33)

ATTACHMENT G

BICYCLE, PARKING & REFUSE VEHICLE ASSESSMENT

GTA CONSULTANTS

REF: S165960

DATE: 19 December 2018

Brown Falconer
28 Chesser Street
Adelaide SA 5000

Attention: Mr. Rowan Barbary (Architect)

Dear Rowan,

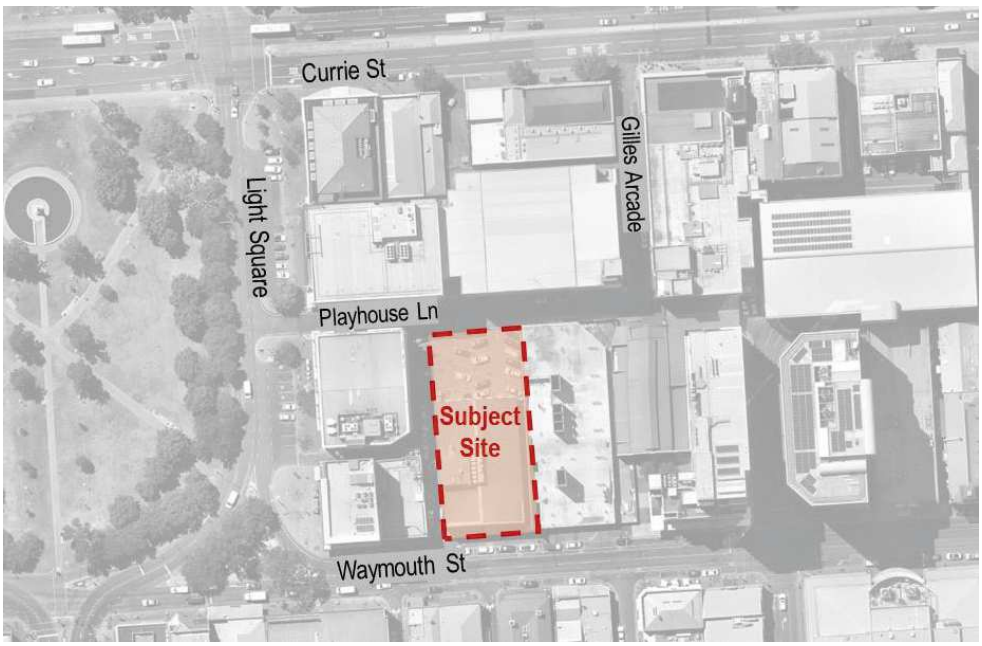
RE: WAYMOUTH STREET, STUDENT ACCOMMODATION

Pursuant to the proposed Student Accommodation to be located on 124 Waymouth Street in Adelaide, GTA has undertaken a bicycle parking and refuse vehicle access assessment of the proposed development. The assessment has been undertaken based on plans prepared by Brown Falconer.

Subject Site and Surrounds

The subject site is located at 124 Waymouth Street in Adelaide, within the Capital City Zone. The site of approximately 1,860sq.m has a frontage of approximately 31 metres to Playhouse Lane and 30.5 metres to Waymouth Street. The properties surrounding the subject site are a mix of residential, retail and commercial. Figure 1 shows the subject site in relation to its surrounds.

Figure 1: Subject Site and Surrounds



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Waymouth Street is a Collector Road under the care and control of the City of Adelaide Council. It is a two-way road aligned in an approximate east/west direction. Marked on-street parking bays are located on either side of Waymouth Street subject to time restrictions. Bicycle lanes are located on either side of the street in the vicinity of the subject site. Waymouth Street is subject to the default urban speed limit of 50km/h and carries approximately 9,000 vehicles per day[1].

Playhouse Lane is a local road under the care and control of the City of Adelaide Council. It is a two-way road aligned in an approximate east/west direction. Directly adjacent to the site, Playhouse Lane is configured with a 6-metre-wide carriageway set within a 9-metre-wide road reserve. Kerbside parking is permitted on the northern side of the road, subject to time restrictions. Playhouse Lane is subject to the default urban speed limit of 50km/h.

Gilles Arcade is a one-lane two-way local road aligned in a north-south direction. It is configured with a 5.5-metre-wide carriageway set within a 9-metre-wide road reserve (approx.). Kerbside parking and loading is permitted on the eastern side of the road, subject to time restrictions. Gilles Arcade is subject to the default urban speed limit of 50km/h.

Proposed Development

The proposed development includes the construction of a multi-storey student accommodation building with a total of 787 beds across Level 1 to Level 16.

The proposed development does not include any car parking spaces and there is no minimum parking requirement. Bicycle parking provision of 80 spaces is included on the ground floor. A loading area for refuse collection and delivery is proposed at the north of the site on the ground floor, accessible via Playhouse Lane.

Bicycle Parking Provision

Recommended bicycle parking rates for new development in the City of Adelaide are contained in Table Adel/6 of the Adelaide (City) Development Plan (consolidated 07 June 2018). Given an absence of a specific bicycle parking rate in the Development Plan for Student Accommodation, GTA has undertaken an empirical assessment of bicycle parking requirements at other student accommodation developments in Australia (including one on Bank Street in Adelaide).

Table 1 summarises the bicycle parking provision and demand at other student accommodation developments in Australia.

Table 1: Bicycle parking provision and demand – student accommodation developments

Location	Total Beds	Total Spaces Provided	Total Spaces Occupied	No. Beds Per Bicycle	Comments
Quays Street, Haymarket, Sydney	334	44	10	33.4	City centre location, close proximity to UTS and Sydney University.
Bank Street, Adelaide	503	24	22	22.9	City centre location, Close proximity to Uni SA and University of Adelaide
South Bank, Brisbane	755	75	29	26.0	City centre location
City Road, Sydney	440	98	5	88.0	Sydney University on campus location (opened July 2015)
Cleveland Street, Sydney	461	135	15	30.7	Chippendale, close proximity to UTS and Sydney University
Sydney Central	665	86	13	51.2	Ultimo, close proximity to UTS
Melbourne Central	461	81	11	41.9	Carlton, close proximity to University of Melbourne
Carlton	272	41	18	15.1	Carlton, close proximity to University of Melbourne
Average No. Beds Per Bicycle				**38.6**	

[1] Source: DPTI, Traffic Volume Estimate, base year 2009, accessed via Location SA

Based on the bicycle parking demands at similar student accommodation developments across Australia, the average bicycle parking demand rate is approximately 1 space per 38.6 beds. The proposed 787 beds would generate a bicycle parking demand of 21 spaces. Based on the most comparable Adelaide site at Urban Nest in Bank Street, the proposed site would generate a bicycle parking demand of 34 spaces. The provision of 80 spaces (1 space per 10 beds) will therefore be adequate to meet the anticipated bicycle parking demand.

The proposed development is located approximately 250m to Tafe Adelaide Campus, 650m to UniSA City West Campus and approximately 800m to Adelaide University health and medical science campus. The proposed development is within walking distances to bus stops on Currie Street which provide services to various destinations. The site is also located approximately 420m from Pirie Street Tram Stop providing tram services to various destinations such as Rundle Mall, Railway Station and City West.

Based on the above discussion, GTA considers the proposed bicycle storage room capable of accommodating 80 bicycles, is appropriate for the proposed student accommodation development.

Loading facilities

The Adelaide (City) Development Plan (dated 07 June 2018) provides guidance for loading/unloading facilities. Principle of Development Control (PDC) 241 in the Transport and Access section of the Development Plan applies to the proposed development. PDC 241 is as follows:

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

It is proposed that loading and refuse collection will occur on site within the loading area accessed via Playhouse Lane. The loading area has been designed to accommodate a refuse collection vehicle up to 10.0 metres long, which is the largest standard refuse vehicle. It is proposed that the vehicle will enter Playhouse Lane via Gilles Arcade in a forward direction and reverse into the loading area. The refuse vehicle will then exit the loading area onto Playhouse Lane in a forward direction and exit onto Light Square in a forward direction.

GTA has completed a swept path assessment using AutoTURN software to assess the ability for the proposed refuse collection vehicle to enter and exit the proposed loading area. Figure 2 shows the truck reversing into the loading area, while Figure 3 shows the truck exiting the loading zone in a forward direction onto Playhouse Lane.

Figure 2: Proposed Loading Ingress – 10m Refuse Vehicle

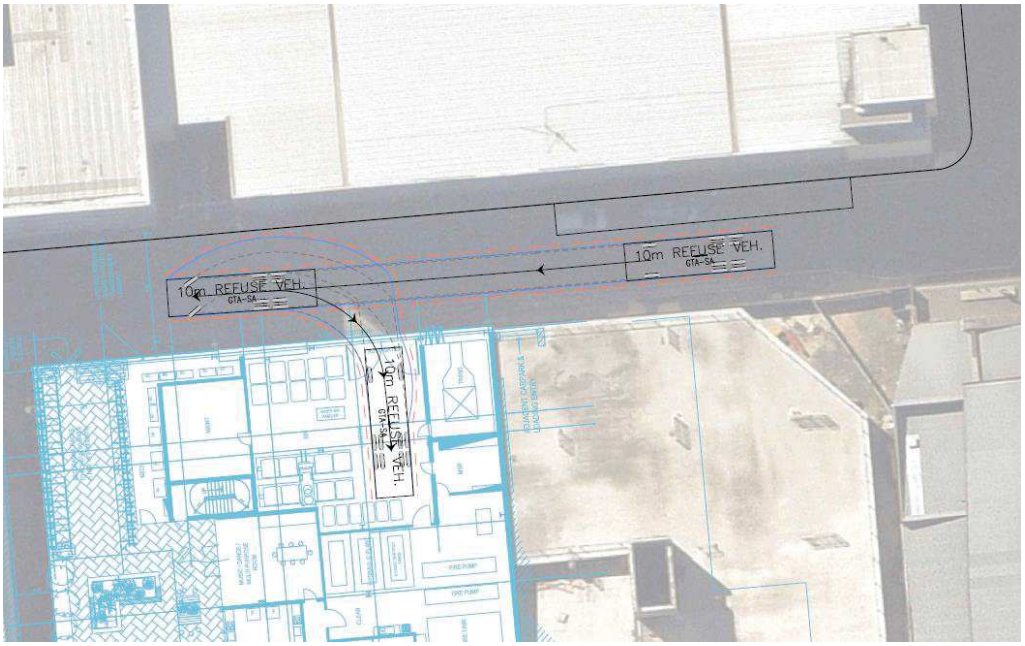
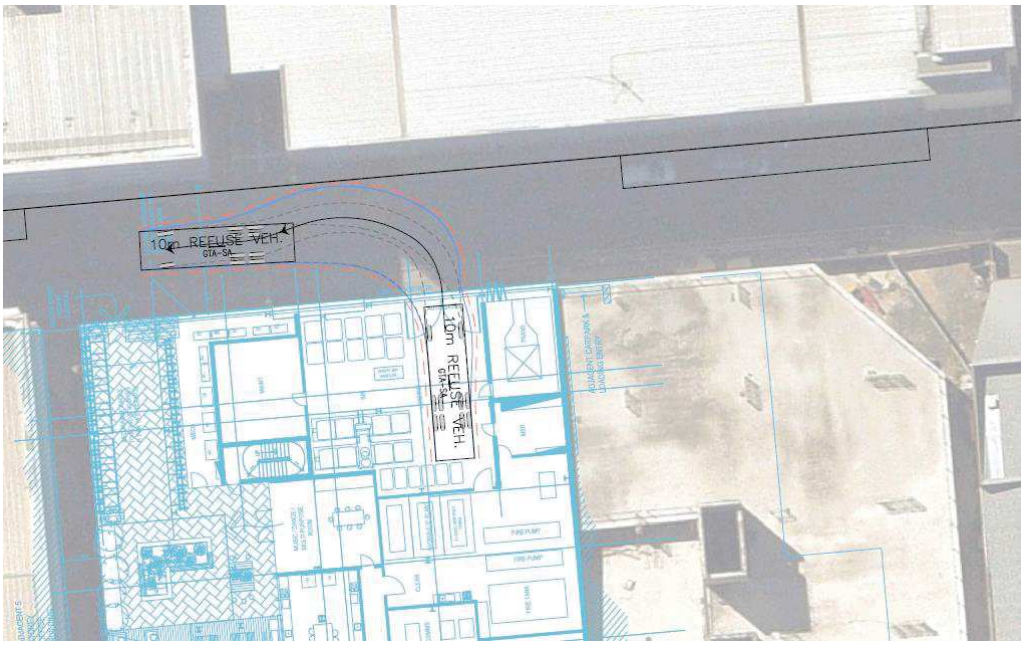


Figure 3: Proposed Loading Egress – 10m Refuse Vehicle



Alternatively, the 10m refuse vehicle could enter Playhouse Lane from Light Square and reverse into the proposed loading zone and exit onto Playhouse Lane and Gilles Arcade, as shown in Figure 4 and Figure 5. The egress swept path shows limited clearance between the vehicle and the existing on-street parking space on Playhouse Lane to the northeast of the site. However, it is considered feasible for the refuse vehicle to exit to the east of the site when the end space of the on-street parking is occupied.

It is noted that vehicles generally turn better in reality than the simulation in AutoTURN due to the conservative manner of AutoTURN simulation. The vehicle egress swept path was generated without using 'turn wheels from stop'. In reality, the refuse vehicle will be able to adjust its wheel positions (turn wheels from stop) once within Playhouse Lane and could also reverse a little on Playhouse Lane to avoid encroachment onto the on-street parking space, if required.

Figure 4: Alternative Loading Ingress – 10m Refuse Vehicle Entering via Light Square

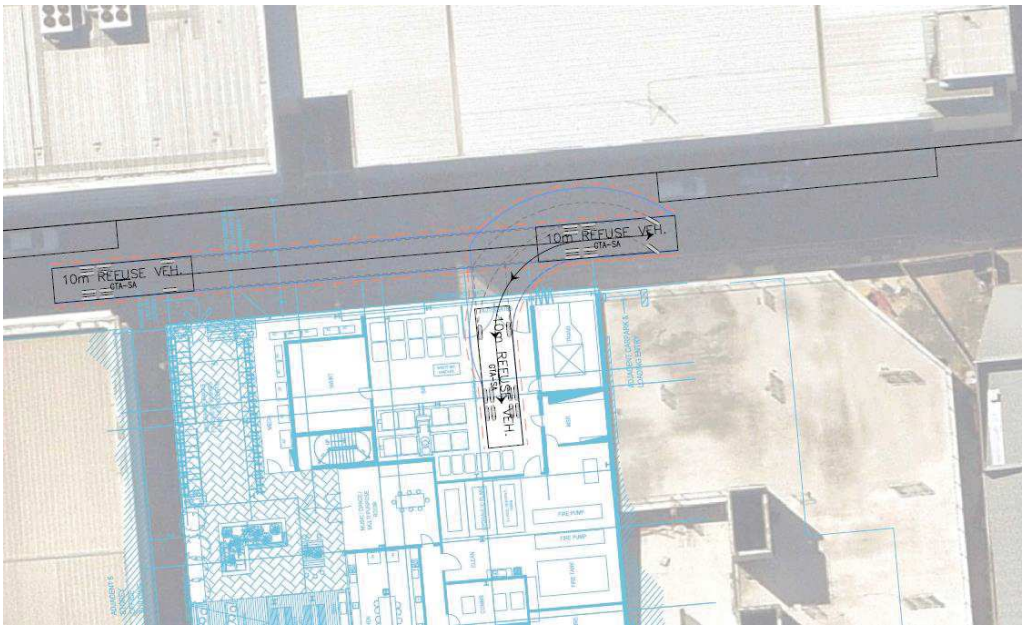
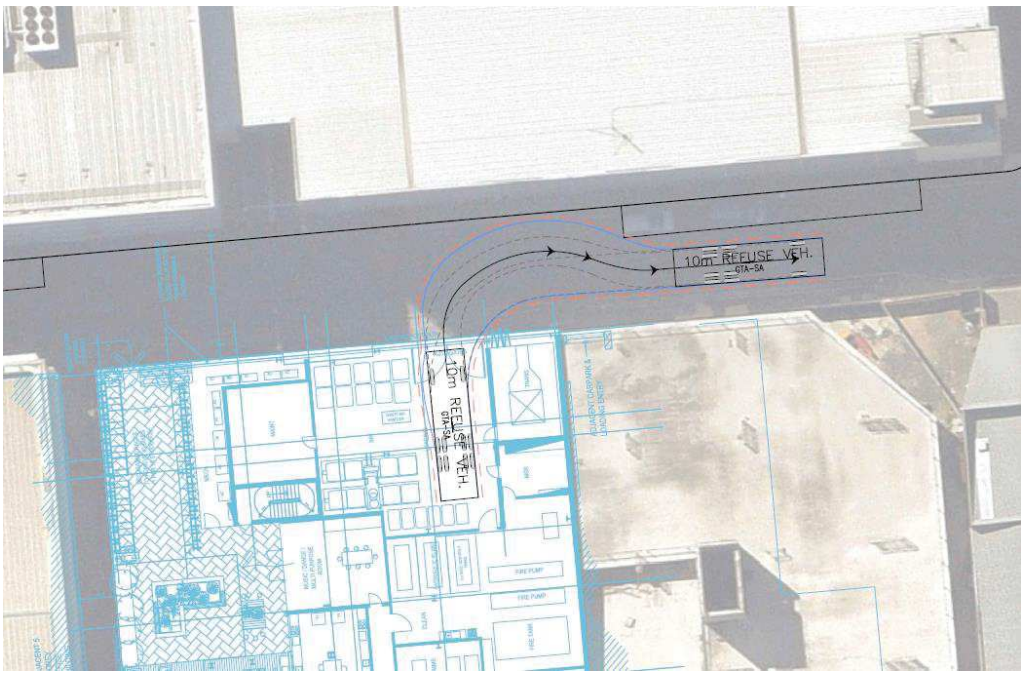


Figure 5: Alternative Loading Egress – 10m Refuse Vehicle Exiting to the East



Conclusion

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

1. The proposed student accommodation incorporates a total of 787 beds and a bicycle storage room capable of accommodating 80 bicycles.
2. The proposed development does not include any car parking spaces and does not generate a minimum car parking requirement.
3. The proposed development is expected to generate demand for up to 34 bicycle parking spaces. The proposed 80 bicycle parking spaces will be able to accommodate the anticipated bicycle parking demand.
4. The loading/refuse collection area is designed to accommodate vehicles up to a 10m refuse vehicle. The proposed loading arrangement is that the vehicle will enter via Gilles Arcade and reverse into the loading area from Playhouse Lane. The vehicle will be able to exit the loading area to the west in a forward direction to Light Square.
5. Alternatively, the vehicle could enter via Light Square and reverse into the loading area, then exit in a forward direction to the east of Playhouse Lane.

Naturally, should you have any questions or require any further information, please do not hesitate to contact me on (08) 8334 3600.

Yours sincerely

GTA CONSULTANTS

Paul Froggatt
Associate Director

ATTACHMENT H

WASTE MANAGEMENT PLAN

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124 Waymouth Street Student Accommodation

(Residential High-density Development)

Waste Management Plan

Prepared for: Brown Falconer

December 2018

- IMPORTANT NOTES -

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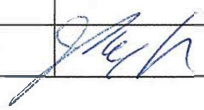
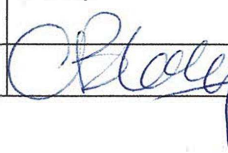
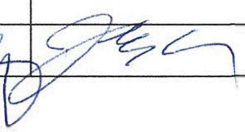
Document verification

Description	124 Waymouth Street Waste Management Plan		
Version	Rev 0 – FOR SUBMISSION		
Issued	19/12/2018		
Verification	Prepared by	Checked by	Approved by
Name	J. Phillips	C. Colby	J. Phillips
Signature			

Contents

1 Introduction

This document presents a waste management plan (WMP) for the proposed student accommodation building at 124 Waymouth Street (the "Development"). The Proponent is Wee Hur, Project Architect is Brown Falconer, and Traffic Engineer is GTA Consultants.

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 types 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 124 Waymouth Street, Adelaide, in the City of Adelaide (Council). Per plans provided (received 17 December 2018), the Development is a seventeen-storey building on a *ca.* 1,800m^2 site, with *ca.* 30.5m frontage onto Waymouth Street and rear access via Playhouse Lane – see

Figure 2-1 two pages overleaf which reproduces the Ground Level plan for the site. *[This figure illustrates proposed waste system features for the Development at Ground Level which will be discussed later in this WMP.]* Table 2-1 overleaf gives the Development's land use metrics (used for waste system design). In summary, the Development comprises:

- *Student Accommodation*
  - *Levels 1 to 16*
    - *a total of 787 apartments, consisting of a mix of (all 1-bed) studio, ensuite and cluster rooms;*
    - *Communal kitchen on each level, servicing 16 (cluster and studio) rooms (on that level)*
    - *Communal lounge on each level, servicing 16 (cluster and studio) rooms (on that level)*
    - *Gym on Level 1*
    - *Laundry on Level 1*
    - *Small communal garden ("urban farming") on level 15*
    - *Sky Lounge (Dining & Study Hub)*
  - *Ground Level*
    - *Access Lobby to Lift*
    - *Administration office*
    - *Cinema*
    - *Communal kitchen*
    - *Communal lounge areas*
    - *Small communal garden ("urban farming")*
    - *Bike storage*

Table 2-1 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.

Table 2-1 – Summary of land uses for the Development, their WRGR Description(s) and relevant Development Metric(s)

Land Use	Location	WRGR Description / Assumption^	Development Metric(s)	
Student Accommodation	Levels 1-16	Serviced Apartment, Backpacker or Boarding Houses	787	Bedrooms
Shared Kitchen / Dining	Ground, Levels 1-16	Included as component of above Student Accommodation WRGR (but waste and recycling at this location has separate disposal point)	721	m^2 GFA allowed
Shared student spaces (Lounges)	Levels 1-16	Proprietary WRGRs (based on consultant's experience)**	648	m^2 GFA allowed
Gym / Cinema / Bike storage / Laundry / Other Activity / Public Access Areas	Ground, Level 1	Showrooms	880	m^2 GFA allowed
Communal gardens	Ground, Level 15	Proprietary WRGR (based on consultant's experience)	40	m^2 GFA allowed
Admin / Reception / Office*	Ground	Offices or Consulting Rooms	50	m^2 GFA allowed (activated area)

* Active space estimate used for waste volume calculations

^ From State Guideline (Zero Waste SA, 2014) (unless mentioned otherwise)

** Estimated by consultant as no State Guideline value exists for this situation

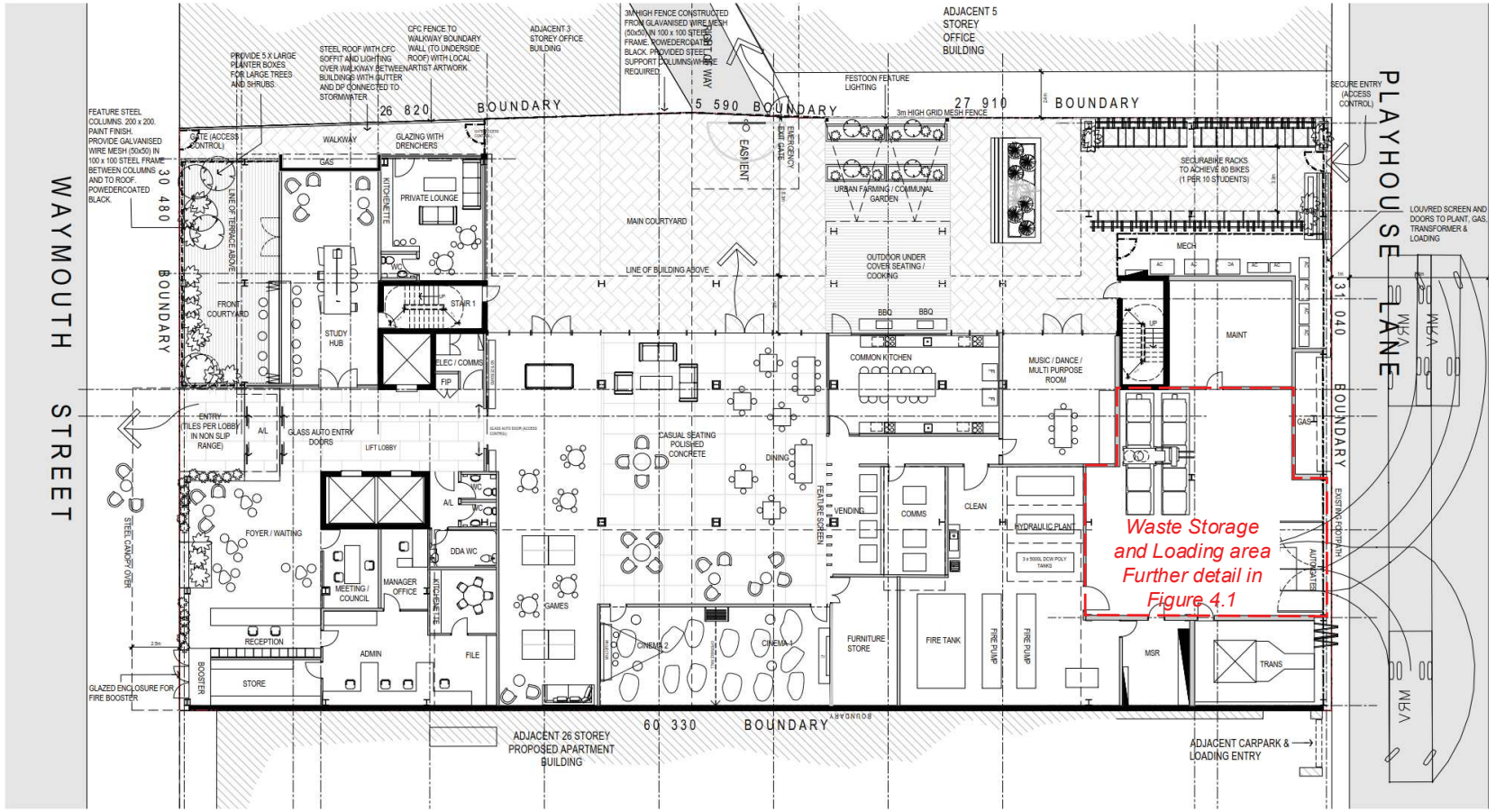


Figure 2-1 – Ground Level plan and site boundary for Development, reproduced from the Drawings.

3 Design Assumptions

3.1 Waste & Recycling Service Provision

Table 3-1 outlines the recommended waste services by land use per Table 2-1. The different waste service classifications listed in Table 3-1 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.
    - *These Services would be provided by a private / commercial contractor*
- ***At-call services –*** These involve non-frequent collections, such as Hard waste and are organised and provided on an as-needed basis.
    - *These Services would be provided by a private / commercial contractor*
- ***Maintenance services –*** Some waste items (e.g. lighting in common areas or commercial tenancies) 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, local waste depot) (and thus, separate on-site waste storage is not usually needed or provided).

Table 3-1 – Expected or recommended waste & recycling services for the Development

Service Classification	Site Service
Routine (regularly scheduled)	General Waste Recycling (inc. Bulky Cardboard) Food waste
At-call (as needed)	Confidential (Admin/Offices only)
	Hard/E-waste Lighting Printer Cartridges Batteries
Maintenance (waste removed by contractor)	Lighting (where applicable) Sanitary waste (public toilets/feminine) Garden waste Property maintenance waste
External (by resident/tenant off-site)	*Not Applicable to this site: All services provided on-site by operator*

3.2 Waste & Recycling Volumes

Table 3-2 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.*

Table 3-2 – Estimated waste & recycling volumes (Litres/week) for Development. *Greyed out, N/A – Not Applicable; NE – Not estimated*

Waste / Recycling Service	*Student Accommodation*	*Kitchen / Dining*	*Shared student spaces (Lounges)*	*Gym / Cinema / Bike storage / Laundry / Other Activity / Public Access Areas*	*Communal gardens*	*Admin / Reception / Office*
	L/week	*L/week*	*L/week*	*L/week*	*L/week*	*L/week*
General Waste	13380*	3070	2360	2610	30	530
Dry Comingled Recycling	9840	2880	980	620	10	530
Food waste		2050			140	90
Confidential Paper						90
Sanitary Waste (Feminine)	NE (Maintenance Service)					
Hard waste	5509			34		27
E-waste	984			6		7
Lighting waste	NE (At-call Service)					
Printer Cartridges/Batteries	NE (At-call Service)					
Garden Waste	NE (Maintenance Service)					
Property Maintenance Waste	NE (At-call service)					
TOTAL	**29713**	**8000**	**3340**	**3270**	**180**	**1275**

** Uncompacted volume*

4 Waste Management System

4.1 Waste Storage Area(s)

There would be the following waste bin storages (Waste Storage Areas) at the Development, which are also shown in Figure 4-2, Figure 4-4, and Figure 4-3.

1) **Bin room for aggregation of chute waste and other building wastes –** *see* Figure 4-1
    - *This central shared waste storage would be a separate area at the Ground Level, adjacent the collection point in the truck loading bay.*
        - *Entry to the loading bay by collection trucks is from Playhouse Lane.*
    - *The waste storage area would comprise:*
        - *Chute discharge area with 2×3-bin linear automatic bin conveyers for general waste and recycling 1100L skip bins*
            - *These bin conveyers would automatically changeover full bins with empty bins under each chute discharge.*
            - *The general waste chute would have a compactor on chute discharge or overhead bin compactor (with final selection decided at detailed design).*
                - *This compactor would halve the general waste volume from the chutes (and thus number of bins) requiring collection.*
            - *This arrangement is expected to provide enough chute discharge storage capacity for greater than 2 days.*
            - *Note: An **alternative** layout using a Carousel bin changer for Recycled waste bins in lieu of a linear conveyor may be considered. This layout will need additional work to confirm access will be retained. This would be looked at further during detailed design. The alternative layout would achieve an equivalent outcome for Waste Management on site.*
        - *Cleaners / property management local disposal area.*
            - *This area would include the following bins:*
                - *1 x 1,100L General Waste Skip*
                - *1 x 1,100L Co-mingled Recycling Skip*
                - *1 x 660L Food Organics Skip*
            - *A bin lifter would be provided for emptying of MGBs from user or local disposal areas elsewhere in the building*
        - *Bin storage area to store full and empty bins from conveyers and Cleaners / property management local disposal area*
            - *This would have space for:*
                - *4×1,100L General waste bins*
                    i. *Note: Additional 2 bin storage provided on conveyor and Cleaners' Disposal Area*
                - *4 x 1,100L Co-mingled Recycling bin*
                    i. *Note: Additional 2 bin storage provided on conveyor and Cleaners' Disposal Area*
                - *1 x 660L Food Organics bin*
                    i. *Note: Additional 1 bin storage provided in Cleaners' Disposal Area*
            - *The above storage should provide enough bin capacity for greater than 2 days for each service*

Table 4-1 gives a schedule of recommended bin storage in each of these Waste Storage Areas for Routine Services. This Table includes for each land use and service:

- *Number and type of bins;*
- *Collection frequency (expected or proposed); and*
- *Service provider.*

Potential bin configurations in these Waste Storage Areas for the recommended bin storage (per Table 4-1) are shown in Figure 4-2, Figure 4-2, and Figure 4-3. These illustrations demonstrate that adequate space is or can be provided in these Waste Storage Areas to meet the site's waste management requirements.

Table 4-1 – Waste storage and bin schedule for Routine Services, including collection frequency and collection service provider.

Storage Area	Service	Waste volume (L/week)	Service Provider	Collection (No/week) Frequency	Bins collected *(up to, per event)*			
					No	Size		
Student Accommodation	General Waste	6690*	Private	3 times per week	3	1,100	L	Skip
	Dry Comingled Recycling	9840			2	1,100	L	Skip
Communal and Administration	General Waste	8600		3 times per week	4	1,100	L	Skip
	Dry Comingled Recycling	5020			2	1,100	L	Skip
	Food waste	2280			1	660	L	Skip
	Confidential Paper (At-call)	90		Every 2-3 weeks	1	240	L	MGB

* Compacted volume

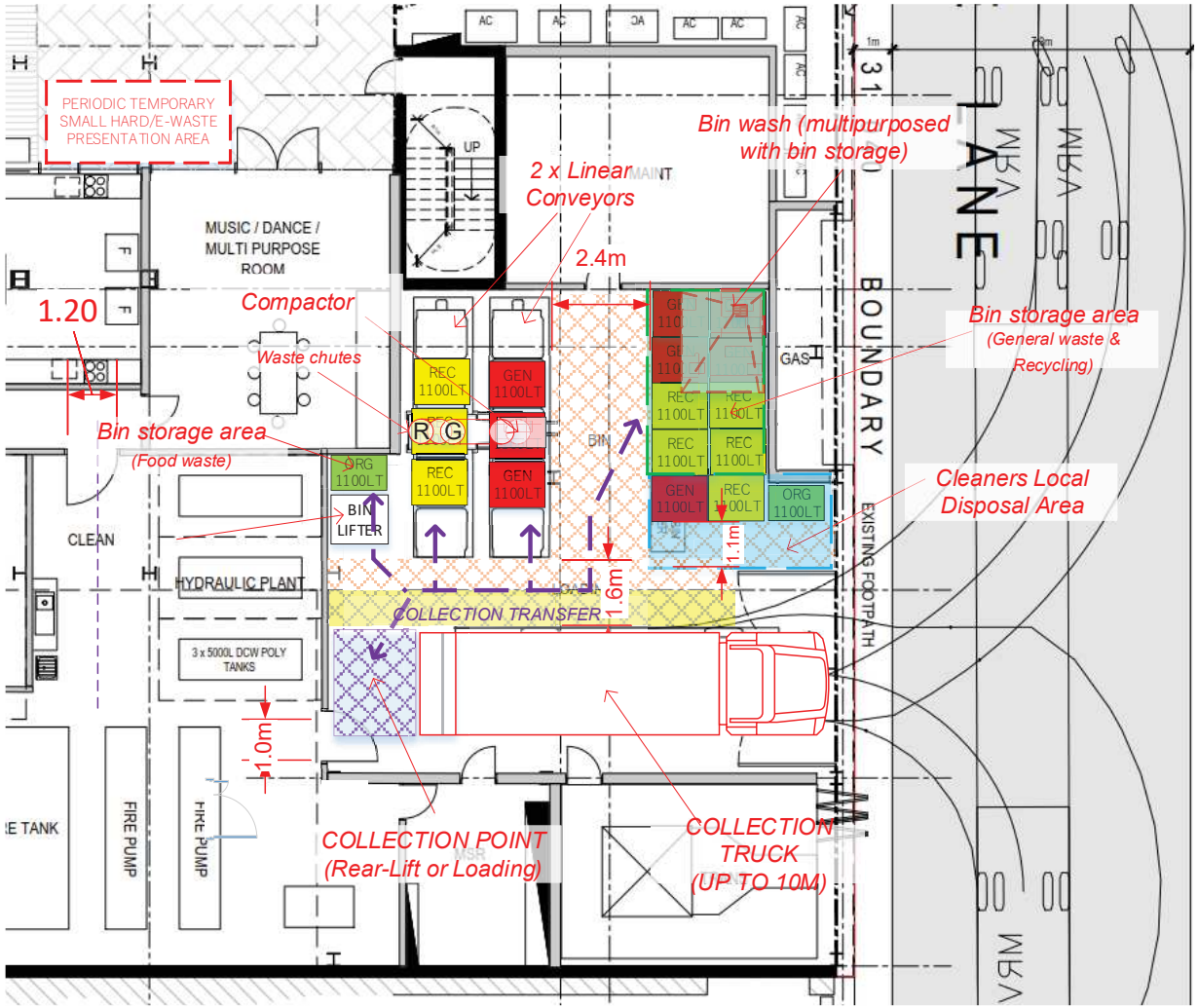


Figure 4-1 – Example illustration of how waste storage on Ground Level could be organised. Final configuration to be decided at time of building fit-out.

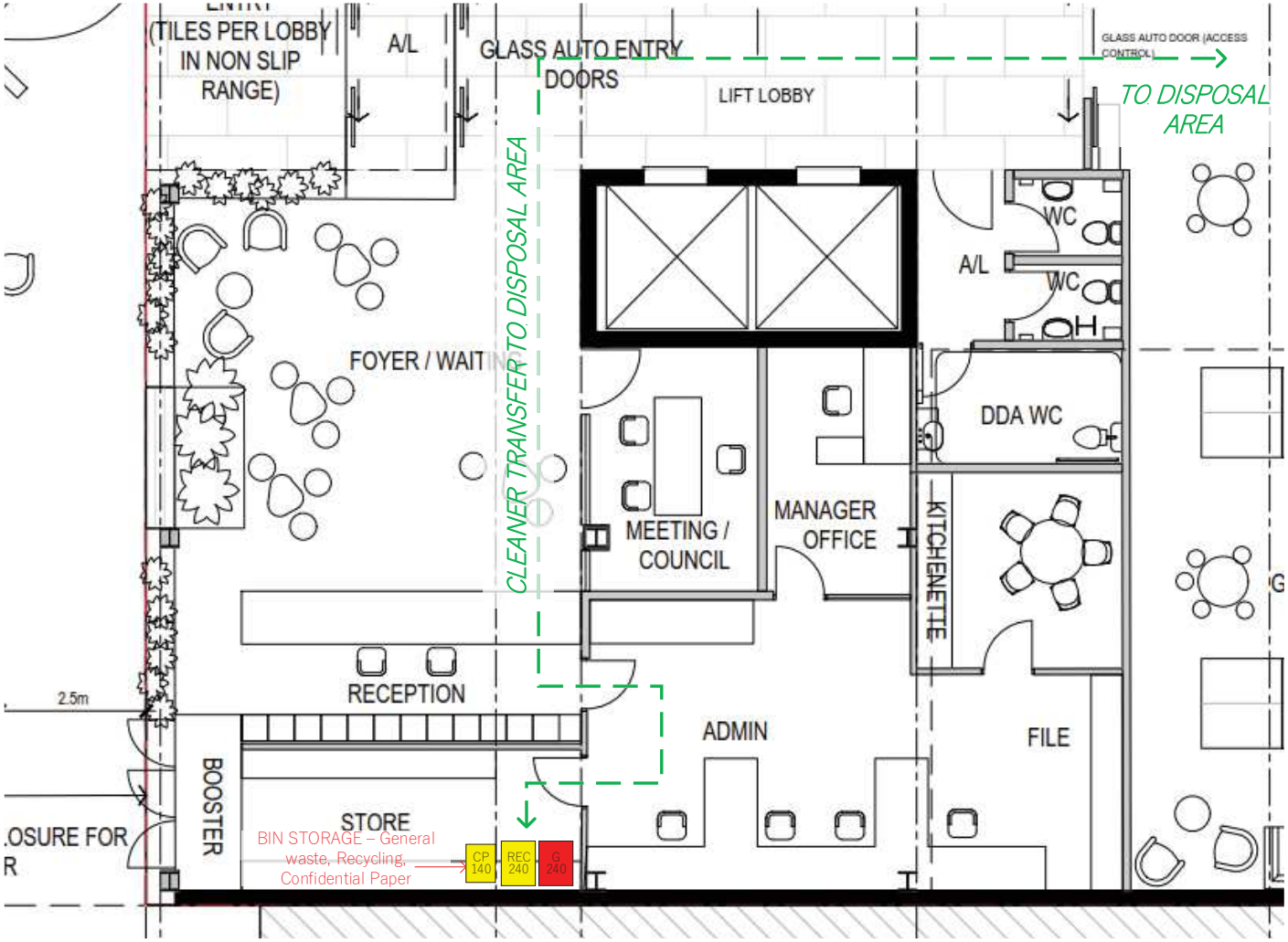


Figure 4-2 – Example illustration of how commercial waste storage in Administration area could be organised. *Final configuration to be decided at time of building fit-out*

Figure 4-3 – Example illustration of how waste storage on Levels 1 - 16 could be organised. *Final configuration to be decided at time of building fit-out*

4.2 System Operation

4.2.1 Routine Services

The following summarise how the waste systems would operate for each land use at the Development.

4.2.1.1 Student Accommodation Waste Chute System

User Storage – Residents would be provided with suitable kitchen bins with handles to enable easy carriage from their dwellings to the nearest Waste Chute, e.g. Figure 4-4 below:

a) General waste bin – at least 20L in size (bag lined)
b) Commingled recycling waste bin - at least 20L in size

Figure 4-4 – Examples of suitable waste and recycling kitchen bins: *2×20L Buckets with carry-handles in pull-out drawer* **(Adelaide City Council, 2016)**

Local Disposal – The residents would carry waste in their kitchen bins via corridors to the Waste Chute Disposal Room on each level (near northern stair case) – see Figure 4-3.

- This room would have:
  - Dedicated waste chute disposal access points for general waste and co-mingled recycling.
  - Bulky Cardboard set-down area or bin, e.g. for pizza boxes and moving boxes. T
    - This cardboard or the bins containing it would be transferred by property maintenance staff to the waste storage area bin room on Ground Level and emptied into the recycling bin in the Cleaners' Local Disposal Area.

Waste Storage – Per Figure 4-1 and described in Section 4.1, this would be located at Ground Level.

Presentation – The Ground Level Waste Storage Area (bin storage areas) would be the presentation area for collection.

- The waste contractor may also empty full 1100L skip bins for general waste and recycling directly from the 3-bin conveyers

Collection Transfer / Collection –

- A private contractor would collect the skip bins in Waste Storage Area using rear-lift truck, parking in the adjacent loading bay via the rear gates on Playhouse Lane (using key or fob or secure access code).
  - The truck would reverse into the loading bay from Playhouse Lane, then exit in forward direction.

- Collections would be three times per week.
- The collection event duration would be 10-15 mins per service.

4.2.1.2 Communal areas (Kitchens, lounges, etc)

User Storage – Bins will be located in each area. The type of bins would be decided at detailed design and building fit-out but would be suitable for cleaners to transfer and empty waste and recycling to the Cleaners' Local Disposal Area.

Local Disposal – Property maintenance staff / cleaners will gather waste from each location. For smaller bins, bags may be removed and carried on a trolley. For larger bins (140L or 240L MGBs) these may be loaded directly onto a trolley. All wastes will be transferred via service lift to the bin room on ground level. Movement of wastes may be as shown in Figure 4-3 (page 11). Transfer of wastes will be daily, or as deemed necessary once the building is operational.

Waste Storage area – **These would be 1,100L skip bins with number as per**

Table 4-1 and illustrated in Figure 4-1, located in the Bin Room on Ground Level. Bins for aggregation of these waste streams will be floor mounted (i.e. not on the conveyors) and will not be compacted.

- Bags of waste / recycling / organics can be manually loaded into the appropriate 1,100L skip
- MGBs can be lifted and tipped into 1,100L skips using a mobile lifter (Figure 4-5), which may have a protective cage around it.

Presentation / Collection Transfer / Collection – will be as described for Student Apartments above.

Figure 4-5 – Typical Mobile Garbage Bin lifter shown without protective cage (source: www.rjcox.com.au)

4.2.1.3 Administration area

User Storage – Bins will be located in each area. These will typically be sized between 40L swingtop bins up to 240L MGBs, depending on the size and function of each area. Selections will be made during building fitout.

Local Disposal, Waste Storage, Presentation, Collection Transfer, Collection – will be as described in Communal areas section above. Movement of wastes may be as shown in Figure 4-2 (page 10).

4.2.1.4 Communal garden areas

User Storage – Bins for general waste, recycling and organics will be located at each of the two communal garden areas. Sizes of bins will be confirmed during detailed design

Local Disposal, Waste Storage, Presentation, Collection Transfer, Collection – will be as described in Communal areas section above.

4.2.2 At-call services

4.2.2.1 Hard/E-waste

- Hard waste and E-waste may be arranged by the Building Facilities Manager on behalf of residents. These may be arranged on a regular basis (e.g. every 1 or 2 months) as determined by the Building / Facilities Manager. Additional collections may be arranged at peak times (e.g. at the start and end of the student year when residents are moving in and moving out).
- A potential area for temporary aggregation of hard waste has been indicated in Figure 4-1.

The Building User Manual(s) for residents at the Development would advise on availability and/or organizing the Council Hard /E-waste collection services.

4.2.3 Maintenance Services

Waste would be generated by some maintenance services or activities in the building (e.g. lighting, repair work, cleaning of communal 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.]

4.2.4 External

Residents 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 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.

4.2.5 Bin cleaning (& On-site Bin Wash Area)

A dedicated on-site bin cleaning area would be provided and multi-purposed with the bin storage area in the Bin room at Ground Level – see Figure 4-1.

- *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 would be timed to occur immediately after bins are emptied.*

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 4-6 below.*
    - *Or some will remove bins from site, replacing them with an empty spare, clean the bins, then return them to site.*

Figure 4-6 – On-site bin wash system for rear-lift trucks on back of ute. *Source: http://binforce.com.au/*

4.2.6 Transfer pathways

There are range of transfer pathways for the waste systems at the Development, which were described in Sections 4.2.1 and 4.2.2. The following is provided as a guide for sizing and designing these transfer pathways.

- *Transfer pathways –*
  - *User disposal – less than 30m 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 1,500mm*
- *Floors – Hard surfaces where bins and skips are to be carted*
- *Lifts – All lifts should be sized to allow for bulky hard waste items.*

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.

4.3 Collection & Traffic Issues

A loading bay has been provided in the building design. The bay is large enough to accommodate a truck up to 10m in length, and maintaining useable space behind and to the side of the truck for loading.

The truck will enter the loading by driving in either direction along Playhouse Lane, stopping (safely/legally) outside the building, unlocking/opening the loading bay gates, and reversing into the loading bay. This is likely to take between 1 and 2 minutes to complete entry and exit.

Collection times would be arranged to avoid disruption to traffic, especially the car park entry across the road.

Refer to the Traffic Engineer's report for further information on truck access to site.

No traffic issues are expected.

4.4 Management & Communication

4.4.1 Responsibilities

Table 4-2 summarises the responsibilities of different parties / stakeholders for proposed waste management and operational activities at the Development. In summary:

- ***Residential*** – The Building 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 Manager with resident engagement and education to help drive good waste management outcomes; and
- ***Administration*** – The Building Manager would manage the waste system, including ensuring that good waste management outcomes by staff were achieved.

Table 4-2 – Management & operational responsibilities for the waste systems at the Development

Waste System	Activity	Responsible party
Residential	*Local Disposal & External Disposal*	Residents
	Waste Storage Areas, Hygiene, Odour Management & Cleaning	Property management staff
	Collection services – Standard Waste & Recycling	Commercial / Private Contractor(s)
	Collection services – Hard Waste by Council	Council with Building Manager booking a regular collection with Council (up to 12 times per year)
	Management	Building Manager
	Education, Training & Engagement (Residents)	Building Manager
Administration	*Local Disposal, Hard Waste & External Disposal*	Staff
	Waste Storage Areas, Hygiene, Odour Management & Cleaning	Staff
	Collection services – Waste & Recycling	Commercial / Private Contractor(s)
	Management	Building Manager
	Education, Training & Engagement (tenants)	Building Manager

4.4.2 Implementation & Communication

To successfully implement this WMP, the following may need to be considered or should be put in place.

- ***Mandated responsibilities for apartment residents and staff –*** Obligations for residents and staff 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:
    - *Private collection services suspended or not available;*
    - *Incorrect use by residents of the waste systems; and*
    - *Illegal dumping on-site.*

4.5 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).

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 Building 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 Local Disposal and 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 Local Disposal and/or Waste Storage areas that lids are closed after use.*

4) **Access & security** –
    - Local Disposal (chute rooms at each level) will be accessible to residents at that level
    - Waste Storage Areas 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 property management staff and/or waste contractor(s) collecting from these areas.*

5 References

Zero Waste SA. (2014). South Australian Better Practice Guide – Waste Management in Residential or Mixed Use Developments.

20 March 2019

Lauren Talbot
Department of Planning, Transport & Infrastructure
GPO Box 1815
ADELAIDE SA 5001

Dear Lauren,

DEVELOPMENT NUMBER: **DA 020/A004/19**
APPLICANT: **WH Waymouth Street**
NATURE OF DEVELOPMENT: **Multi Storey Student Accommodation Building**
SUBJECT LAND: **124 Waymouth Street, ADELAIDE, SOUTH AUSTRALIA, 5000**

The application has been assessed and the building at a proposed height of RL 99.55m AHD the application **will** penetrate the Adelaide Airport Obstacle Limitation surfaces (OLS) which is protected airspace for aircraft operations.

The application will require approval in accordance with the Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996 and therefore will be forwarded to the Department of Infrastructure and Regional Development for their approval.

The developments will penetrate the OLS by approximately 9 metres.

If the development is approved by the Department of Infrastructure, Regional Development and Cities any associated lighting would also need to conform to the airport lighting restrictions and shielded from aircraft flight paths.

Crane operations associated with construction, if approved, will also be subject to a separate application.

Should you require any additional information or wish to discuss this matter further please contact the undersigned on 8308 9245.

Yours sincerely,

Brett Eaton
Airside Operations Manager

Adelaide Airport

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Enquiries: Seb Grose 8203 7195
CoA Ref: S10/4/2019
SCAP Ref: 020/A004/19

8 February 2019

State Commission Assessment Panel
By email: lauren.talbot@sa.gov.au

Attention: State Commission Assessment Panel

Dear Sir/Madam

Application: S10/4/2019
Applicant: WH WAYMOUTH TRUST
Address: 124-132 Waymouth Street, ADELAIDE SA 5000
Description: Staged development of multi storey student accommodation building

Council has the following comments to make on the above application:

TECHNICAL COMMENTS

ROADS / FOOTPATHS	Existing boundary (back of path) levels must not be modified. Finished floor levels should be based around retaining the existing back of path levels. Any damage caused to City of Adelaide (CoA) road, footpath and kerbing infrastructure during development will be the responsibility of the developer to rectify to a standard that equals or improves the pre-development condition.
LIGHTING	The proposed development works may impact on public lighting within the proximity of the development site. The existing street lighting on Waymouth Street is owned by CoA and consists of street lighting columns and associated underground cabling and pits. The street lighting in Playhouse lane is owned and maintained by SA Power Networks and consists of consists of street lighting columns and associated cabling/pits.

TRAFFIC / TRANSPORT	The doorway to the right of way opens directly into private road space. There is a risk that the door and pedestrians may be struck, particularly if future increased vehicle use occurs. The footpath in this location is inadequate, particularly between the site and Light Square. This area is used primarily for waste collection, emergency egress and what appears to be occasional vehicle access to adjacent land. As this would be used as a core pedestrian access point for students travelling to and from the Universities (being the most direct route), modifications to this area to improve pedestrian safety and amenity are necessary.
WASTE	From review of the plans and supporting documents, including engagement with the waste management consultants, the development as proposed is supported.

PLANNING RELATED COMMENTS

Council Administration has not undertaken a thorough planning assessment of the proposal but makes the following comments in relation to the proposed development:

RESIDENTIAL AMENITY	Studio and ensuite rooms do not appear to provide for a persons with a temporary disability. The ensuite room does not appear to provide adequate width for movement between the desk chair position and cupboard. The toilet facilities in the studio and ensuite rooms appear challenging to use Whilst no details or dimensions are provided, the DDA rooms do not appear to be compliant, particularly in terms of door access and shower position in the bathroom. There appears to be no evidence to support potential adaptive re-use. Minimal storage has been provided. The height of the balustrade for the break out area balcony should be reviewed to reduce risk for persons using this balcony.
DESIGN & APPEARANCE	The western façade will be highly visible from Light Square. Capital City Zone PDC 7 stipulates that buildings should achieve a high standard of external appearance by using high quality materials and finishes.

Furthermore, a high degree of visual interest should be provided through articulation, avoiding any large blank facades and incorporating design features within blank walls on side boundaries which have the potential to be built out.

Attempts to articulate the blank portions of the western façade by use of a precast concrete 'weave' pattern are acknowledged. However, there is concern a large portion will essentially appear as a blank white/light toned façade, particularly when viewed from a distance, including Light Square.

It is questionable why the small central portion, that does not incorporate windows, and is setback from the western façade, is windowless. This façade should incorporate windows, especially considering its setback from the boundary.

The design of the western facade should be reconsidered to include higher quality materials and greater articulation. The inclusion of green infrastructure would be particularly beneficial to improve the visual appearance of this façade and to also provide benefit for building occupants.

ENCROACHMENTS

The canopy proposed over the Waymouth Street footpath satisfies Council's Encroachment Policy.

There appears to be a canopy proposed over Playhouse Lane as shown on the east and west elevations. The canopy appears to satisfy the minimum 3 metre above footpath level requirement. However, the canopy has not been shown on the site/ground floor plan in relation to the existing footpath. The canopy will need to be located at least 600mm behind the kerb.

Yours faithfully

Rebecca Rutschack
MANAGER - PLANNING ASSESSMENT

OFFICE FOR DESIGN + ARCHITECTURE SA

File No:
2014/11234/01

Ref No:
13587124

31 January 2019

Lauren Talbot
Senior Planning Officer
Planning and Development Directorate
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
Adelaide SA 5000

lauren.talbot@sa.gov.au

For the attention of the State Commission Assessment Panel

124 Waymouth Street, Adelaide

Further to the referral 020/A004/19 received 14 January 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 for your consideration.

The proposal was presented to the Design Review panel on one occasion. A pre-lodgement agreement was not reached in advance of lodgement.

In principle, I support the project team's aspiration to deliver a high density student residential facility in this location. The proposal is likely to remain highly visible due to its location and scale, and therefore must be supported by high quality design, particularly in relation to architectural expression, cityscape contribution and the delivery of high quality amenity for residents both in individual units and shared spaces.

The site is located on the northern side of Waymouth Street, east of Light Square within the Capital City Zone where building heights up to 53 metres are envisaged. It is rectangular in shape with a 30.48 metre frontage to Waymouth Street and Playhouse Lane and is 60 metres deep. The site also adjoins a private lane along the northern half of the western boundary. To the east of the site, a 27 storey mixed use development (U2) is currently under construction. The existing built form context of the northern side of Waymouth Street is characterised by commercial buildings with heights varying between three to 13 storeys. A 17 storey UNO apartment building for Housing SA is located to the east of the U2 development site and former Queens Theatre (State heritage place). The existing built form character of the southern side of Waymouth Street is smaller in scale between two and six storeys, and includes two Local heritage places directly opposite the site (Federation Trading at 127-133 Waymouth Street and Shakespeare Chambers at 123 Waymouth Street). Playhouse Lane provides a link between Light Square and Currie Street. Directly opposite the site on the north side of Playhouse Lane are an eight storey commercial building and an eight storey open deck car parking structure.

The proposal is approximately 53 metres in height, excluding parapet walls to screen rooftop services, comprising 17 floors of student accommodation units,

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DESIGN +
ARCHITECTURE SA

File No:
2014/11234/01

Ref No:
13587124

indoor and outdoor communal spaces and associated infrastructure. I support the proposed height, however I also recognise the potential for building heights beyond the maximum envisaged height of 53 metres for the site, due to its direct adjacency to the area with no prescribed height limit and a 27 storey building currently under construction.

The proposed development includes a visually defined podium element, which is predominantly one storey with the southwest corner expressed as a two storey form. The ground floor built form is proposed on the eastern boundary and set back from the western boundary to create a communal open space behind the built form along the Waymouth Street frontage. Above the podium, the building is 'I' shaped in plan with the front and rear built forms generally proposed to the boundaries, connected by the deeply recessed middle element. The building is expressed as five separate vertical solid elements connected by the contrasting coloured recessive section, with the intent to reduce the apparent bulk and scale. The solid built forms (towers) are located at the corners of the site as well as one at the centre that faces west. The western half of the front built form (south west tower) is set back by three metres from Waymouth Street to provide variety in built form composition and reinforce the building expression as a series of vertical elements. The fifth central tower includes a built form break on levels 12 and 13, which accommodates a double height terrace. In principle, I support the design direction of expressing the building as a collection of visually separated slender built forms. I also support the intent for an asymmetrical built form composition through differentiation of heights and shifting of the south western tower. I acknowledge that the additional height through parapet walls has been introduced to the north east tower to reinforce the variation in heights on the northern elevation. However in my opinion, an opportunity exists to further develop the composition of tower elements to strengthen the design intent through increased variation in heights. I am also of the view that the proportion of the central tower is at odds with the overall design concept. I recommend further refinement of built form composition to deliver a bold and coherent outcome that convincingly reflects the design intent.

The base of the building includes a two storey projecting pergola over the courtyard and the first floor terrace, which are proposed within the front setback area at the base of the south west tower. The ground floor of the south east tower is also recessively expressed with a highly permeable glazed facade to Waymouth Street. In principle, I support the recessed ground floor along the main street frontage as an alternative to a podium form on the boundary. In my opinion, the proposed arrangement presents as a well-considered junction between the tall built forms and the ground plane. In addition, I am of the view that providing active use spaces directly accessible from Waymouth Street provides a potential for a meaningful engagement with the streetscape. To that end, I recommend further refinement of the courtyard screening treatment to improve the visual connection between the proposal and the street.

The solid towers are clad in three dimensionally articulated precast concrete panels with the intent to achieve a consistent weaving pattern. Recessed sections of the building are clad in dark coloured concrete panels or dark coloured glazing to contrast the towers. Clear glass curtain wall facades are proposed to the southern communal spaces on levels 15 and 16 and the northern shared space on level 16. Vertical shading fins are proposed on the western facade to control the solar loads. In principle, I support the design intent to create a uniform weave pattern for the towers. Given the subtle and singular expression proposed, the success of the overall project is highly reliant on the full delivery of design intent through resolution

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of the design details during the upcoming phases of the project realisation. To that end, I recommend prototyping of the articulated concrete panels to ensure the envisaged visual effects can be achieved.

On the ground floor, pedestrian access points are proposed on Waymouth Street and Playhouse Lane. The main entry on Waymouth Street has a foyer/waiting area and the adjoining reception, while the rear entry off Playhouse Lane is proposed with a security gate. A secure connection is also proposed along the western boundary between the central communal open space and Waymouth Street, locating the gas meter away from the Waymouth Street frontage, which I support. Other services infrastructure, including an onsite refuse collection area, are proposed at the rear of the site along the Playhouse frontage. At the middle of the site, a series of internal communal spaces extend to the eastern boundary, connected to a large communal outdoor space along the western boundary. I support the consolidation of the communal courtyard to offer a larger and more usable open space with improved amenity. Acknowledging the potential building management and Crime Prevention through Environmental Design (CPTED) issues to be managed, an opportunity exists to open up the mid-site access point, with the view to improving the site's permeability and connection with the city. I also support the widening of the rear access arrangement off Playhouse Lane with the intent to provide a more generous entry sequence for this main access point to and from the tertiary education precinct to the north.

In addition to the communal spaces on the ground floor, communal facilities, including laundry and gym, are also proposed to the front of the first floor. Communal spaces proposed in the south west corner of levels 15 and 16 are vertically connected with a double height void and provide access to an 'urban farm' on the rooftop. Levels two to 14 are dedicated to residential units, with a minor exception of small breakout spaces at the centre on levels 12 and 13, connected to the west facing double height terrace. While I acknowledge that the consolidation of communal space is informed by the established business models for student accommodation, I remain concerned by the lack of easily accessible communal spaces from many of the mid-level units. While the small breakout space on each floor assists in providing relief to the long central corridor, I am of the view that the size and location of the space does not offer high quality user amenity. While I acknowledge and support the increase of the rooftop communal garden space and improved solar access, I recommend further exploration of opportunities to better distribute the communal spaces throughout the building. In my opinion, the provision of easily accessible and high quality shared spaces are critical in ensuring residential amenity, particularly given the tight planning of individual units. In my view, an opportunity exists to offer outlook from west facing shared spaces on upper floor levels.

The residential floors offer a mix of student accommodation options, including accessible studios, studios and 16-bedroom clusters with shared kitchen/dining and lounge spaces. I support the variety of residential options proposed. While the bedroom sizes are small, I acknowledge that the planning is based on the established business models for student accommodation. However I reiterate my view that the proposed residential arrangement must be supported by high quality and easily accessible shared facilities to provide optimum amenity for the students. While I acknowledge that rearrangement of the cluster room common areas to ensure access to natural light and ventilation, I remain concerned about the size of these shared spaces. I recommend review of the cluster room arrangement to provide sufficient common spaces and facilities to be shared by 16 students.

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In principle, I support the provision of active use spaces, such as the entry foyer, open study hub and the connected courtyard along the Waymouth Street frontage as the interface to the streetscape. However, I am yet to be convinced by the resolution of the proposed arrangement of the front courtyard regarding the potential to deliver an active space that positively contributes to the public realm. I recommend further development of the overall Waymouth Street frontage to ensure meaningful engagement with the street, informed by CPTED principles, orientation and micro climate. I support the provision of soft landscaping to the rooftop in principle, and welcome the engagement of a landscape architect with the intent to integrate soft landscaping with the overall development.

I support the intent to utilise the facade treatment for passive climate control, however I am yet to be convinced that the current application of 340mm deep vertical fins sufficiently manage solar loads to the western facade as envisaged. I recommend continuing development of the facade design and detailing to respond to each orientation and site specific conditions.

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:

- Further refinement of built form composition to enhance variation in heights and create a bold and coherent outcome.
- Further refinement of the courtyard screening treatment to improve contribution to the public realm by positively engaging with Waymouth Street.
- Development of facade design and detailing, including effective solar load management with vertical fins and prototyping of the articulated concrete panels during the next phases of design development.
- Continuing development of the communal facility strategy to ensure sufficient spaces, high quality amenity and usability is provided for the envisaged approximately 800 students.

Yours sincerely

Kirsteen Mackay
South Australian Government Architect

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Government of South Australia

From:	Shirai-Doull, Aya (DPTI)
To:	Talbot, Lauren (DPTI)
Cc:	McMahon, Gabrielle (DPTI)
Subject:	124 Waymouth Street (DA 020/A004/19)
Date:	Tuesday, 19 March 2019 1:55:52 PM
Attachments:	image001.png image002.png image003.png image004.png

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Lauren,

This email is in response to the applicant's response to the Government Architect's referral letter and the associated revised drawings forwarded on 15 March 2019.

I acknowledge and support the introduction of window hoods on the west elevation to improve the effectiveness of solar load management.

I also acknowledge and support the provision of an exit gate to the adjoining laneway to the west.

Kind regards,

Aya Shirai-Doull on behalf of Kirsteen Mackay (South Australian Government Architect)
Senior Design Advisor
Office for Design + Architecture SA
Planning and Land Use Services
Department of Planning, Transport and Infrastructure
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collaboration . honesty . excellence . enjoyment . respect

We acknowledge and respect Aboriginal peoples as South Australia's first peoples and nations, we recognise Aboriginal peoples as traditional owners and occupants of land and waters in South Australia and that their spiritual, social, cultural and economic practices come from their traditional lands and waters; and they maintain their cultural and heritage beliefs, languages and laws which are of ongoing importance. We pay our respects to their ancestors and to their Elders.

MASTERPLAN
TOWN + COUNTRY PLANNERS

13 March 2019

Ms Lauren Talbot
Case Manager/Senior Planning Officer
Planning and Land Use Services – DPTI
Box 1815
ADELAIDE SA 5001

Dear Lauren

Re: DA 020/A004/19
(124 Waymouth Street Adelaide)

We refer to the Government Architect's response to our client's application to develop a multi storey student accommodation building at 124 Waymouth Street, Adelaide.

The drop-box link below contains an amended set of drawings by Brown Falconer Architects. These drawings respond to the matters detailed in the Government Architect's letter.

https://www.dropbox.com/sh/397twcuavt4sgg0/AADH8Ge-xKBQmMmObsgM2oo9a?dl=0

Site Demolition

Before we respond to the Government Architect's matters, we bring to your attention that the City of Adelaide will not support our client's demolition application. The reasons for Council's position are difficult to understand, given that the Council approved our client's application to demolish buildings at Gray Street by way of a separate application supported with adequate security.

Be that as it may, we now request that site demolition form part of DA 020/A004/19. The drawing set included with this letter includes a Demolition Plan for this purpose.

As a consequence, the staging sequence will be as detailed in Section 4.7 of our Planning Report, but the paragraph in Section 4.7 explaining that the City of Adelaide will be responsible for that stage of the development no longer applies.

Response to Government Architect

1. Building Height

Our client does not consider that it is necessary to vary building height and building form, noting that the building is made up of a number of building components which we believe appropriately contributes to what the Government Architect describes as "*refinement of built form composition to deliver a bold and coherent outcome that convincingly reflects the design intent*".

Additional detailing has however been introduced to the western façade by inclusion of window hoods.

2. Better Distribute Communal Spaces Throughout Building

Most of the proposal's indoor and outdoor communal space is provided at Ground Floor level. Indeed, the majority of the site is set aside for communal use at this level, with 660 square metres internally and 700 square metres externally.

At Level 1, 280 square metres of internal floor space and 23 square metres of external floor space will be set aside for communal use.

At Levels 2 to 14, there will be a generously proportioned lift lobby at the southern end of each floor, a Breakout Space half way along the building and a common lounge/TV room/kitchen/dining room at the northern end. The shared common areas at Levels 2 to 14 amounts to 60 square metres, which we consider to be generous.

At Level 12, there will be a 35 square metre internal Breakout Space, with a 15 square metre external Terrace. Level 13 will feature a 15 square metre Breakout Space.

At Level 15 there will be a 105 square metre Sky Lounge plus an 11 square metre Terrace. In addition, there will be a 145 square metre Urban Farm together with a 50 square metre internal Mezzanine Lounge.

In total, the amended proposal delivers 2,099 square metres of Community Space throughout the building.

3. Front Courtyard

The front courtyard has been further refined to improve its appearance. This detail is best shown on Section A – Section Through Podium, showing a Feature Steel Frame in 50 millimetre x 50 millimetre black steel mesh. This space will be accessible from the Ground Floor Study Hub. The front courtyard will be landscaped as previously detailed on the Landscape Concept prepared by Hemisphere Design.

4. Solar Load Management

The façade design is further detailed on the 'Details' sheet prepared by Brown Falconer.

The west facing windows will be protected from sunlight penetration by window hoods as detailed on the Shading Device Analysis sheet. These hoods are the same as those used for our client's Gray Street project. All west facing windows will furthermore be fitted with wind-out, double glazed awnings on windows to facilitate natural ventilation and improved solar performance.

Closure

We trust that the amended application will now be presented to the next available SCAP meeting for a decision.

Brown Falconer Architect and the writer would be pleased to attend that meeting to answer questions from SCAP members.

Yours sincerely

Graham Burns
MasterPlan SA Pty Ltd

cc: Brown Falconer Architects
Wee Hur Group

From: Graham Burns [mailto:GrahamB@masterplan.com.au]
Sent: Thursday, 21 March 2019 1:49 PM
To: Talbot, Lauren (DPTI) <Lauren.Talbot@sa.gov.au>
Cc: Rowan Barbary <r.barbary@brownfalconer.com.au>; 'Lochlan Pellew' <l.pellew@brownfalconer.com.au>; 'Mario Dreosti' <M.Dreosti@brownfalconer.com.au>; Goh Wee Ping <gohweeping@weehur.com.sg>; gohchengyu@weehur.com.au; Christie Bailey <c.bailey@brownfalconer.com.au>
Subject: RE: Student Accommodation Application - 124 Waymouth Street Adelaide - DA 020/A004/19

Hi Lauren.

Thanks for your email.

My answers to Council's comments are in red below.

Regards,

Graham Burns
0413 832 602
www.masterplan.com.au

From: Talbot, Lauren (DPTI) <Lauren.Talbot@sa.gov.au>
Sent: Friday, 15 March 2019 4:38 PM
To: Graham Burns <GrahamB@masterplan.com.au>
Cc: Rowan Barbary <r.barbary@brownfalconer.com.au>; 'Lochlan Pellew' <l.pellew@brownfalconer.com.au>; 'Mario Dreosti' <M.Dreosti@brownfalconer.com.au>; Goh Wee Ping <gohweeping@weehur.com.sg>; gohchengyu@weehur.com.au; Christie Bailey <c.bailey@brownfalconer.com.au>
Subject: RE: Student Accommodation Application - 124 Waymouth Street Adelaide - DA 020/A004/19

Hi Graham,

Thanks for this. I have referred the amended plans to ODASA for comments.

It would be best if you at least provide some commentary on responses to Council's concerns as well. I have summarised them below:

- The doorway to the right of way opens directly into private road space- risk of safe passage if utilised as a pedestrian access point. Modifications to this area to improve pedestrian safety and amenity are necessary.

The latest set of drawings that were sent to you with our letter dated 13th March 2019 addresses this concern by 'flipping' the gate so that it opens inwards. The associated note stating that the gate is egress only has also been removed. Refer Ground Floor Plan.

- Studio and ensuite rooms do not cater for temporary disability

Neither Brown Falconer Architects nor MasterPlan are familiar with the term "temporary disability" in either the Development Plan or the Bui8lding Code of Australia. That is not to say that the rooms do not cater for persons with a temporary disability, but of course that will depend on the nature and severity of the temporary disability.

- DDA rooms not dimensioned

Every DDA room has been designed to the relevant standards and specifications to ensure that they conform to minimum entry door clearances, bathroom size, bed clearance and overall circulation space.

- No 'evidence' to support adaptive re-use

The drawing set has always included a floor plan layout showing how the building could be adaptively reused. This layout is shown on" Typical Adaptive Re-use Floor Plan" on page 09 of the drawing set.

- Minimal storage

Storage is provided under each bed, above the robes and in open shelving above the study desk. This detail can be seen on some of the images on Drawing page 10. The attached photographs of the Gray Street building, taken 20th March 2019, also show a number of semi-completed rooms where provision has been made for storage in the fit-out.

- Height of balustrade on breakout area balcony reviewed

The images on page 10 (Breakout Space - Level 12-13) and Drawing page 11 shows this detail. BCA requirements for balustrades is 1.0 metre but the balustrades will be higher than this for safety and security reasons.

- Western façade should be reconsidered to include higher quality materials, greater articulation i.e. inclusion of green infrastructure and/or windows

We are confident that the weave pattern will be noticeable and effective. The weave pattern will furthermore be tested and verified by the production of actual scale samples during design development. We invite SCAP to impose a condition to this effect on the Decision Notification Form.

- Clarification of 600mm setback from kerb of canopy to Playhouse Lane

The canopy over Playhouse Lane has been deleted.

Finally, I **attach** a three (3) photographs taken on 20th March 2019 of rooms and the corridor/breakout space in the Gray Street student accommodation building which is under construction by our client and nearing completion. We trust the photographs clearly convey the quality of that build in terms of fixtures and fittings, room dimensions and overall amenity being provided for its occupants.


NOT
IF I
SEE
YOU
FIRST
eric lindstrom

CAPITAL CITY ZONE

Introduction

The Desired Character, Objectives and Principles of Development Control that follow apply in the whole of the Capital City Zone shown on Maps Adel/17 to 20, 23 to 26 and 29 to 31. They are additional to those expressed for the whole of the Council area and in cases of apparent conflict, take precedence over the more general provisions. In the assessment of development, the greatest weight is to be applied to satisfying the Desired Character for the Zone.

DESIRED CHARACTER

This Zone is the economic and cultural focus of the State and includes a range of employment, community, educational, tourism and entertainment facilities. It is anticipated that an increased population within the Zone will complement the range of opportunities and experiences provided in the City and increase its vibrancy.

The Zone will be active during the day, evening and late night. Licensed entertainment premises, nightclubs and bars are encouraged throughout the Zone, particularly where they are located above or below ground floor level to maintain street level activation during the day and evening.

High-scale development is envisaged in the Zone with high street walls that frame the streets. However an interesting pedestrian environment and human scale will be created at ground floor levels through careful building articulation and fenestration, frequent openings in building façades, verandahs, balconies, awnings and other features that provide weather protection.
In important pedestrian areas, buildings will be set back at higher levels above the street wall to provide views to the sky and create a comfortable pedestrian environment. In narrow streets and laneways the street setback above the street wall may be relatively shallow or non-existent to create intimate spaces through a greater sense of enclosure. In the Central Business Policy Areas, upper level setbacks are not envisaged.

Non-residential land uses at ground floor level that generate high levels of pedestrian activity such as shops, cafés and restaurants will occur throughout the Zone. Within the Central Business Policy Area, residential land uses at ground level are discouraged. At ground level, development will continue to provide visual interest after hours by being well lit and having no external shutters. Non-residential and / or residential land uses will face the street at the first floor level to contribute to street vibrancy.

New development will achieve high design quality by being:

(a) **Contextual** – so that it responds to its surroundings, recognises and carefully considers the adjacent built form, and positively contributes to the character of the immediate area.

(b) **Durable** – by being fit for purpose, adaptable and long lasting, and carefully considers the existing development around it.

(c) **Inclusive** – by integrating landscape design to optimize pedestrian and cyclist usability, privacy, and equitable access, and also promote the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimize security and safety both internally and into the public realm, for occupants and visitors alike.

(d) **Sustainable** – by integrating sustainable systems into new buildings and the surrounding landscape design to improve environmental performance and minimise energy consumption.

(e) **Amenable** – by providing natural light and ventilation to habitable spaces.
Contemporary juxtapositions will provide new settings for heritage places. Innovative design is expected in areas of identified street character with an emphasis on contemporary architecture that responds to site context and broader streetscape, while supporting optimal site development. The addition of height, bulk and massing of new form should be given due consideration in the wider context of the proposed development.

There will also be a rich display of art that is accessible to the public and contextually relevant.

Adelaide's pattern of streets and squares

The distinctive grid pattern of Adelaide will be reinforced through the creation of a series of attractive boulevards as shown on Concept Plan Figures CC/1 and 2. These boulevards will provide a clear sense of arrival into the City and be characterised by buildings that are aligned to the street pattern, particularly at ground level.

Views to important civic landmarks, the Park Lands and the Adelaide Hills will be retained as an important part of the City's charm and character.

The City's boulevards, terraces and Squares will be developed as follows:

(a) North Terrace will be reinforced as an important pedestrian promenade and cultural boulevard that provides an important northern edge to the City square mile.

(b) King William Street will be enhanced as the City's principal north-south boulevard and will be reinforced as the City's commercial spine.

(c) Grote Street-Wakefield Street will be enhanced as the City's principal east-west boulevard and will be developed to provide a strong frame that presents a sense of enclosure to the street.

(d) East Terrace will be characterised by buildings that maximise views through to the Park Lands and provide a distinct City edge.

(e) West Terrace will be reinforced as the western 'gateway' to the City centre and will form an imposing frontage to the western City edge. Buildings will be constructed to the front and side boundaries, and designed to maximise views through to the Park Lands. Corner sites at the junctions of West Terrace and the major east-west streets will be developed as strongly defined visual gateways to the City. This will provide an imposing frontage to the western edge of the City, which comprises a mixture of commercial, showroom and residential development.

(f) Pulteney and Morphett streets are key north-south boulevards. A sense of activation and enclosure of these streets will be enhanced through mixed use development with a strong built form edge. Pulteney Street will include residential, office and institutional uses, and retail activities. These boulevards will become important tree-lined commercial corridors.

(g) Currie, Grenfell, Franklin and Flinders streets, as wider east-west boulevards provide important entry points to the City. Currie and Grenfell streets will become a key focus for pedestrians, cycling and public transport. These streets also provide long views to the hills as their closing vistas and these view corridors should remain uncluttered.

(h) Victoria, Hindmarsh and Light Squares will have a continuous edge of medium to high-scale development that frames the Squares and increases ground level activity.

The Zone also includes a number of Main Street areas, encompassing Rundle Mall, Rundle Street, Hindley Street and Gouger Street, which are envisaged to have a wide range of retail, commercial and community uses that generate high levels of activity. These areas will have an intimately scaled built form with narrow and frequent building frontages. These areas are shown on Concept Plan Figures CC/1 and 2.

Development fronting North Terrace, King William Street, Wakefield Street, Grote Street, the Squares, and in the Main Street Policy Area, will reflect their importance though highly contextual design that reflects and responds to their setting and role.

Minor streets and laneways will have a sense of enclosure (a tall street wall compared to street width) and an intimate, welcoming and comfortable pedestrian environment with buildings sited and composed in a way that responds to the buildings' context. There will be a strong emphasis on ground level activation through frequent window openings, land uses that spill out onto the footpath, and control of wind impacts.

Development in minor streets and laneways with a high value character will respond to important character elements and provide a comfortable pedestrian environment, particularly in the following streets: Gray, Leigh, Union, Chesser, Coromandel, Tucker, Cardwell, Kenton, Market, Ruthven, Cannon, Tatham, Benthem streets, Murrays Lane and Wright Court.

A comprehensive, safe and convenient movement network throughout the City will develop, focusing on the provision of linkages on both public and private land between important destinations and public transport. A high quality system of bicycle or shared pedestrian and bicycle routes will be established within the Zone.

OBJECTIVES

General

Objective 1: The principal focus for the economic, social and political life of metropolitan Adelaide and the State.

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

Objective 3: Design and management of City living to ensure the compatibility of residential amenity with the essential commercial and leisure functions of the Zone.

Objective 4: City streets that provide a comfortable pedestrian environment.

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

Objective 6: Buildings that reinforce the gridded layout of Adelaide's streets and respond to the underlying built-form framework of the City.

Objective 7: Large sites developed to their full potential while ensuring a cohesive scale of development and responding to a building's context.

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

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

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

Affordable housing
Aged persons accommodation
Community centre
Consulting room
Convention centre
Dwelling
Educational establishment
Emergency services facility
Hospital
Hotel
Indoor recreation centre
Licensed entertainment premises
Library
Motel
Office
Pre-school
Personal service establishment
Place of worship

Serviced apartment
Restaurant
Residential flat building
Student accommodation
Shop or group of shops
Tourist accommodation

2 Land uses that are typically closed during the day should be designed to maximise daytime and evening activation at street level and be compatible with surrounding land uses, in particular residential development.

3 Low impact industries should be located outside the Central Business Policy Area and have minimal off-site impacts with respect to noise, air, water and waste emissions, traffic generation and movement.

4 Development listed as non-complying is generally inappropriate.

Form and Character

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

Design and Appearance

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

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

(a) the use of high quality materials and finishes. This may be achieved through the use of materials such as masonry, natural stone, prefinished materials that minimise staining, discolouring or deterioration, and avoiding painted surfaces particularly above ground level;

(b) providing a high degree of visual interest though articulation, avoiding any large blank facades, and incorporating design features within blank walls on side boundaries which have the potential to be built out;

(c) ensuring lower levels are well integrated with, and contribute to a vibrant public realm; and

(d) ensuring any ground and first floor level car parking elements are sleeved by residential or non-residential land uses (such as shops, offices and consulting rooms) to ensure an activated street frontage.

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

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

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

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

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

(a) relates to the scale and context of adjoining built form;

(b) provides a human scale at street level;

(c) creates a well-defined and continuity of frontage;

(d) gives emphasis and definition to street corners to clearly define the street grid;

(e) contributes to the interest, vitality and security of the pedestrian environment;

(f) maintains a sense of openness to the sky for pedestrians and brings daylight to the street; and

(g) achieves pedestrian comfort by minimising micro climatic impacts (particularly shade/shelter, wind tunnelling and downward drafts);
other than (h) or (i):

(h) in the Central Business Policy Area;

(i) where a lesser (or zero) upper level setback and/or podium height is warranted to correspond with and complement the form of adjacent development, in which case alternative design solutions should be included to achieve a cohesive streetscape, provided parts (b) to

(g) are still achieved.

13 Buildings north of Rundle Mall, Rundle Street, Hindley Street and Gouger Street should have a built form that incorporates slender tower elements, spaces between buildings or other design techniques that enable sunlight access to the southern footpath.

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

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

16 Development that exceeds the maximum building height shown in Concept Plan Figures CC/1 and 2, and meets the relevant quantitative provisions should demonstrate a significantly higher standard of design outcome in relation to qualitative policy provisions including site configuration that acknowledges and responds to the desired future character of an area but that also responds to adjacent conditions (including any special qualities of a locality), pedestrian and cyclist amenity, activation, sustainability, and public realm and streetscape contribution.

The Squares (Victoria, Hindmarsh and Light)

17 Outdoor eating and drinking facilities associated with cafés and restaurants are appropriate ground floor uses and should contribute to the vitality of the Squares and create a focus for leisure.

18 Buildings fronting the Squares should:

(a) provide a comfortable pedestrian and recreation environment by enabling direct sunlight to a minimum of 75 percent of the landscaped part of each Square at the September equinox; and

(b) reinforce the enclosure of the Squares with a continuous built-form with no upper level set-backs.

The Terraces (North, East and West)

19 Development along the terraces should contribute to a continuous built form to frame the City edge and activate the Park Lands.

20 Development along North Terrace should reinforce the predominant scale and 'City wall' character of the Terrace frontage.

Building Height

21 Development should not exceed the maximum building height shown in Concept Plan Figures CC/1 and 2 unless;

(a) it is demonstrated that the development complements the context (having regard to adjacent built form and desired character of the locality) and anticipated city form in Concept Plan Figures CC/1 and 2, and

(b) only if:

(i) at least two of the following features are provided:

(1) the development provides an orderly transition up to an existing taller building or prescribed maximum building height in an adjoining Zone or Policy Area;

(2) the development incorporates the retention, conservation and reuse of a building which is a listed heritage place;

(3) high quality universally accessible open space that is directly connected to, and well integrated with, public realm areas of the street;

(4) universally accessible, safe and secure pedestrian linkages that connect through the development site as part of the cities pedestrian network on Map Adel/1 (Overlay 2A);

(5) on site car parking does not exceed a rate of 0.5 spaces per dwelling, car parking areas are adaptable to future uses or all car parking is provided underground;

(6) residential, office or any other actively occupied use is located on all of the street facing side of the building, with any above ground car parking located behind;

(7) a range of dwelling types that includes at least 10% of 3+ bedroom apartments;

(8) more than 15 per cent of dwellings as affordable housing.

(ii) plus all of the following sustainable design measures are provided:

(1) a rooftop garden covering a majority of the available roof area supported by services that ensure ongoing maintenance;

(2) a greenroof, or greenwalls / façades supported by services that ensure ongoing maintenance;

(3) innovative external shading devices on all of the western side of a street facing façade; and

(4) higher amenity through provision of private open space in excess of minimum requirements, access to natural light and ventilation to all habitable spaces and common circulation areas.

22 Development should have optimal height and floor space yields to take advantage of the premium City location and should have a building height no less than half the maximum

shown on Concept Plan Figures CC/1 and 2, or 28 metres in the Central Business Policy Area, except where one or more of the following applies:

(a) a lower building height is necessary to achieve compliance with the Commonwealth Airports (Protection of Airspace) Regulations;

(b) the site is adjacent to the City Living Zone or the Adelaide Historic (Conservation) Zone and a lesser building height is required to manage the interface with low-rise residential development;

(c) the site is adjacent to a heritage place, or includes a heritage place;

(d) the development includes the construction of a building in the same, or substantially the same, position as a building which was demolished, as a result of significant damage caused by an event, within the previous 3 years where the new building has the same, or substantially the same, layout and external appearance as the previous building.

Interface

23 Development should manage the interface with the City Living Zone or the Adelaide Historic (Conservation) Zone in relation to building height, overshadowing, massing, building proportions and traffic impacts and should avoid land uses, or intensity of land uses, that adversely affect residential amenity.

24 Development on all sites on the southern side of Gouger Street - Angas Street and adjacent to a northern boundary of the City Living Zone or the Adelaide Historic (Conservation) Zone should not exceed 22 metres in building height unless the Council Wide overshadowing Principles of Development Control are met.

25 Parts of a development that exceed the prescribed maximum building height shown on Concept Plan Figures CC/1 and 2 that are directly adjacent to the City Living, Main Street (Adelaide) or the Adelaide Historic (Conservation) Zone boundaries should be designed to minimise visual impacts on sensitive uses in the adjoining zones and to maintain the established or desired future character of the area. This may be achieved through a number of techniques such as additional setback, avoiding tall sheer walls, centrally locating taller elements, providing variation of light and shadow through articulation to provide a sense of depth and create visual interest, and the like

Movement

26 Pedestrian movement should be based on a network of pedestrian malls, arcades and lanes, linking the surrounding Zones and giving a variety of north-south and east-west links.

27 Development should provide pedestrian linkages for safe and convenient movement with arcades and lanes clearly designated and well-lit to encourage pedestrian access to public transport and areas of activity. Blank surfaces, shutters and solid infills lining such routes should be avoided.

28 Development should ensure existing through-site and on-street pedestrian links are maintained and new pedestrian links are developed in accordance with Map Adel/1 (Overlay 2A).

29 Car parking should be provided in accordance with Table Adel/7.

30 Multi-level car parks should locate vehicle access points away from the primary street frontage wherever possible and should not be located:

(a) within any of the following areas:

(i) the Core Pedestrian Area identified in Map Adel/1 (Overlays 2, 2A and 3)

(ii) on frontages to North Terrace, East Terrace, Rundle Street, Hindley Street, Currie Street, Waymouth Street (east of Light Square), Victoria Square or King William Street;

(b) where they conflict with existing or projected pedestrian movement and/or activity;

(c) where they would cause undue disruption to traffic flow; and

(d) where it involves creating new crossovers in North Terrace, Rundle Street, Hindley Street, Currie Street and Waymouth Street (east of Light Square), Grenfell Street and Pirie Street (west of Pulteney Street), Victoria Square, Light Square, Hindmarsh Square, Gawler Place and King William Street or access across primary City access and secondary City access roads identified in Map Adel/1 (Overlay 1).

31 Multi-level, non-ancillary car parks are inappropriate within the Core Pedestrian Area as shown on Map Adel/1 (Overlays 2, 2A and 3).

32 Vehicle parking spaces and multi-level vehicle parking structures within buildings should:

(a) enhance active street frontages by providing land uses such as commercial, retail or other non-car park uses along ground floor street frontages;

(b) complement the surrounding built form in terms of height, massing and scale; and

(c) incorporate façade treatments along major street frontages that are sufficiently enclosed and detailed to complement neighbouring buildings consistent with the Desired Character of the locality.

Advertising

33 Other than signs along Hindley Street, advertisements should use simple graphics and be restrained in their size, design and colour.

34 In minor streets and laneways, a greater diversity of type, shape, numbers and design of advertisements are appropriate provided they are of a small-scale and located to present a consistent message band to pedestrians.

35 There should be an overall consistency achieved by advertisements along individual street frontages.

36 In Chesser Street, French Street and Coromandel Place advertisements should be small and preferably square and should not be located more than 3.7 metres above natural ground level or an abutting footpath or street. However, advertisements in these streets may be considered above 3.7 metres at locations near the intersections with major streets.

37 Advertisements on the Currie Street frontages between Topham Mall and Gilbert Place and its north-south prolongation should be of a size, shape and location complementary to the desired townscape character, with particular regard to the following:

(a) On the southern side of Currie Street, advertisements should be fixed with their underside at a common height, except where the architectural detailing of building façades precludes it. At this 'canopy' level advertisements should be of a uniform size and fixed without the support of guy wires. Where architectural detailing permits, advertisements may mark the major entrances to buildings along the southern side of Currie Street with vertical projecting advertisements 1.5 metres high by 1.2 metres wide at, or marginally above, the existing canopy level. Painted wall or window signs should be restrained.

(b) On the northern side of Currie Street, advertisements should be of a uniform fixing height and consistent dimensions to match those prevailing in the area.

PROCEDURAL MATTERS
Complying Development

38 Complying developments are prescribed in Schedule 4 of the *Development Regulations 2008*. In addition, the following forms of development are assigned as **complying**:

(a) Other than in relation to a State heritage place, Local heritage place (City Significance), or Local heritage place, work undertaken within a building which does not involve a change of use or affect the external appearance of the building;

(b) Temporary depot for Council for a period of no more than 3 months where it can be demonstrated that appropriate provision has been made for:

(i) dust control;

(ii) screening, including landscaping;

(iii) containment of litter and water; and

(iv) securing of the site.

(c) Change in the use of land from a non-residential use to an office, shop or consulting room (excluding any retail showroom, adult entertainment premises, adult products and services premises or licensed premises).

Non-complying Development

39 The following kinds of development are **non-complying**:

A change in use of land to any of the following:

Amusement machine centre

Advertisements involving any of the following:

(a) third party advertising except on Hindley Street, Rundle Mall or on allotments at the intersection of Rundle Street and Pulteney Street, or temporary advertisements on construction sites;

(b) advertisements located at roof level where the sky or another building forms the background when viewed from ground level;

(c) advertisements in the area bounded by West Terrace, Grote Street, Franklin Street and Gray Street;

(d) animation of advertisements along and adjacent to the North Terrace, King William Street and Victoria Square frontages.

Total demolition of a State Heritage Place (as identified in Table Adel/1).

Vehicle parking except:

(a) where it is ancillary to an approved or existing use;

(b) it is a multi-level car park located outside the Core Pedestrian Area as indicated on Map Adel/1 (Overlay 2, 2A and 3); or

(c) it is within an existing building located outside the Core Pedestrian Area as indicated on Map Adel/1 (Overlay 2, 2A and 3).

Public Notification

40 Categories of public notification are prescribed in Schedule 9 of the *Development Regulations 2008*.

In addition, the following forms of development, or any combination of (except where the development is non-complying), are assigned:

(a) **Category 1**, public notification not required:

All forms of development other than where it is assigned Category 2.

(b) **Category 2**, public notification required. Third parties do not have any appeal rights.

Any development where the site of the development is adjacent land to land in the City Living Zone or Adelaide Historic (Conservation) Zone and it exceeds 22 metres in building height.

Council wide

Student Accommodation

OBJECTIVE

Objective 9: High-quality student accommodation that creates an affordable, safe, healthy and comfortable living environment.

PRINCIPLES OF DEVELOPMENT CONTROL

10 Residential development specifically designed for the short-term occupation of students may provide reduced internal floor areas, car parking, storage areas and/or areas of private open space provided that:

(a) residents have access to common or shared facilities that enable a more efficient use of space (such as cooking, laundry, common rooms or communal open space);

(b) every living room has a window that provides an external outlook and maximises access to natural light;

(c) the development is designed to enable easy adaptation or reconfiguration to accommodate an alternative use;

(d) the development is designed to maximise opportunities to access natural ventilation and natural light;`

(e) private open space is provided in the form of balconies and/or substituted with communal open space (including rooftop gardens, common rooms or the like) that is accessible to all occupants of the building; and

(f) the internal layout and facilities provide sufficient space and amenity for the requirements of student life and promote social interaction.

11 Internal common areas should be capable of being used in a variety of ways to meet the study, social and cultural needs of students.

12 Development should provide secure long-term storage space in both communal and private areas.

13 Student accommodation with shared living areas should ensure bedrooms are of a suitable size modate a single bed, book shelves, a desk and workspace, and a cupboard/wardrobe.

Environmental

Crime Prevention Through Urban Design

OBJECTIVES

Objective 24: A safe and secure, crime resistant environment that:

(a) ensures that land uses are integrated and designed to facilitate natural surveillance;
(b) promotes building and site security; and
(c) promotes visibility through the incorporation of clear lines of sight and appropriate lighting.

PRINCIPLES OF DEVELOPMENT CONTROL

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

(a) promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:

(i) orientating windows, doors and building entrances towards the street**,** open spaces, car parks, pedestrian routes and public transport stops;
(ii) avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;
(iii) arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;
(iv) positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;
(v) creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;
(vi) locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;
(vii) ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and
(viii) ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.

(b) provide access control by facilitating communication, escape and path finding within development through legible design by:

(i) incorporating clear directional devices;
(ii) avoiding opportunities for concealment near well travelled routes;
(iii) closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;
(iv) use of devices such as stainless steel mirrors where a passage has a bend;
(v) locating main entrances and exits at the front of a site and in view of a street;
(vi) providing open space and pedestrian routes which are clearly defined and have clear and direct sightlines for the users; and
(vii) locating elevators and stairwells where they can be viewed by a maximum number of people, near the edge of buildings where there is a glass wall at the entrance.

(c) promote territoriality or sense of ownership through physical features that express ownership and control over the environment and provide a clear delineation of public and private space by:

(i) clear delineation of boundaries marking public, private and semi-private space, such as by paving, lighting, walls and planting;
(ii) dividing large development sites into territorial zones to create a sense of ownership of common space by smaller groups of dwellings; and
(iii) locating main entrances and exits at the front of a site and in view of a street.

(d) provide awareness through design of what is around and what is ahead so that legitimate users and observers can make an accurate assessment of the safety of a locality and site and plan their behaviour accordingly by:

(i) avoiding blind sharp corners, pillars, tall solid fences and a sudden change in grade of pathways, stairs or corridors so that movement can be predicted;
(ii) using devices such as convex security mirrors or reflective surfaces where lines of sight are impeded;
(iii) ensuring barriers along pathways such as landscaping, fencing and walls are permeable;
(iv) planting shrubs that have a mature height less than one metre and trees with a canopy that begins at two metres;
(v) adequate and consistent lighting of open spaces, building entrances, parking and pedestrian areas to avoid the creation of shadowed areas; and
(vi) use of robust and durable design features to discourage vandalism.

34 Residential development should be designed to overlook streets, public and communal open space to allow casual surveillance**.**

35 To maximise security and safety, buildings should be designed to minimise access between roofs, balconies and windows of adjacent buildings.

36 Security features should be incorporated within the design of shop fronts to complement the design of the frontage and allow window shopping out of hours. If security grilles are provided, these should:

(a) be transparent and illuminated to complement the appearance of the frontage;
(b) provide for window shopping; and
(c) allow for the spill of light from the shop front onto the street.
Solid shutters with less than 75 percent permeability are not acceptable.

37 Public toilets should be designed and located to:

(a) promote the visibility of people entering and exiting the facility by avoiding recessed entrances and dense shrubbery which obstructs passive surveillance;
(b) limit opportunities for vandalism through the use of vandal proof lighting on the public toilet buildings and nearby;
(c) avoid features which facilitate loitering, such as seating or telephones immediately adjacent the structure; and
(d) maximise surveillance through location near public transport links, pedestrian and cyclist networks.

Noise Emissions

OBJECTIVES

Objective 26: Development that does not unreasonably interfere with the desired character of the locality by generating unduly annoying or disturbing noise.

Objective 27: Noise sensitive development designed to protect its occupants from existing noise sources and from noise sources contemplated within the relevant Zone or Policy Area and that does not unreasonably interfere with the operation of non residential uses contemplated within the relevant Zone or Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

Noise Sources

40 Development with potential to emit significant noise (including licensed entertainment premises and licensed premises) should incorporate appropriate noise attenuation measures in to their design to prevent noise from causing unreasonable interference with the amenity and desired character of the locality, as contemplated in the relevant Zone and Policy Area.

41 Development of licensed premises or licensed entertainment premises or similar in or adjacent to a City Living Zone, the Adelaide Historic (Conservation) Zone or the North Adelaide Historic (Conservation) Zone should include noise attenuation measures to achieve the following when assessed at the nearest existing or envisaged future noise sensitive development:

(a) the music noise ($L_{10,\ 15\ min}$) is:

(i) less than 8 dB above the level of background noise[2] ($L_{90,15\ min}$) in any octave band of the sound spectrum; and
(ii) less than 5 dB(A) above the level of background noise ($L_{A\ 90,15\ min}$) for the overall (sum of all octave bands) A-weighted level.

42 Development of licensed premises or licensed entertainment premises or similar in the Capital City, Main Street, Mixed Use and City Frame Zones should include noise attenuation measures to achieve the following when assessed at:

(a) the nearest existing noise sensitive location in or adjacent to that Zone:

(i) music noise ($L_{10,\ 15\ min}$) less than 8 dB above the level of background noise ($L_{90,15\ min}$) in any octave band of the sound spectrum; and
(ii) music noise ($L_{A10,\ 15\ min}$) less than 5 dB(A) above the level of background noise ($L_{A90,15\ min}$) for the overall (sum of all octave bands) A-weighted levels; or

(b) the nearest envisaged future noise sensitive location in or adjacent to that Zone:

(i) music noise ($L_{10,\ 15\ min}$) less than 8dB above the level of background noise ($L_{90,15\ min}$) in any octave band of the sound spectrum and music noise ($L_{10,\ 15\ min}$) less than 5dB(A) above the level of background noise ($L_{A90,15\ min}$) for the overall (sum of all octave bands) A-weighted levels; or
(ii) music noise ($L_{10,\ 15\ min}$) less than 60dB(Lin) in any octave band of the sound spectrum and the overall ($L_{A10,15\ min}$) noise level is less than 55 dB(A).

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

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

44 To ensure minimal disturbance to residents:

(a) ancillary activities such as deliveries, collection, movement of private waste bins, goods, empty bottles and the like should not occur:

(i) after 10.00pm; and

(ii) before 7.00am Monday to Saturday or before 9.00am on a Sunday or Public Holiday.

(b) typical activity within any car park area including vehicles being started, doors closing and vehicles moving away from the premises should not result in sleep disturbance when proposed for use after 10.00pm as defined by the limits recommended by the World Health Organisation.

Noise Receivers

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

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

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

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

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

(c) noise level in any bedroom, when exposed to music noise (L_{10}) from existing entertainment premises, being:

(i) less than 8 dB above the level of background noise ($L_{90,15\ min}$) in any octave band of the sound spectrum; and

(ii) less than 5 dB(A) above the level of background noise ($L_{A90,15\ min}$) for the overall (sum of all octave bands) A-weighted levels

Background noise within the habitable room can be taken to be that expected in a typical residential/apartment development of the type proposed, that is inclusive of internal noise sources such as air conditioning systems, refrigerators and the like as deemed appropriate.

Waste Management

OBJECTIVE

Objective 28: Development which supports high local environmental quality, promotes waste minimisation, re-use and recycling, encourages waste water, grey water and stormwater re-use and does not generate unacceptable levels of air, liquid or solid pollution.

PRINCIPLES OF DEVELOPMENT CONTROL

48 A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.

49 A dedicated area for the collection and sorting of construction waste and the recycling of building materials during construction as appropriate to the size and nature of the development should be provided and screened from public view.

50 Development greater than 2 000 square metres of total floor area should manage waste by:

(a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;
(b) on-site storage and management of waste;
(c) disposal of non-recyclable waste; and
(d) incorporating waste water and stormwater re-use including the treatment and re-use of grey water.

51 Development should not result in emission of atmospheric, liquid or other pollutants, or cause unacceptable levels of smell and odour which would detrimentally affect the amenity of adjacent properties or its locality. Land uses such as restaurants, shops, cafés or other uses that generate smell and odour should:

(a) ensure extraction flues, ventilation and plant equipment are located in appropriate locations that will not detrimentally affect the amenity of adjacent occupiers in terms of noise, odours and the appearance of the equipment;
(b) ensure ventilation and extraction equipment and ducting have the capacity to clean and filter the air before being released into the atmosphere; and
(c) ensure the size of the ventilation and extraction equipment is suitable and has the capacity to adequately cater for the demand generated by the potential number of patrons.

Contaminated Sites

OBJECTIVE

Objective 29: A safe and healthy living and working environment**.**

PRINCIPLES OF DEVELOPMENT CONTROL

52 Where there is evidence of, or reasonable suspicion that land, buildings and/or water, including underground water, may have been contaminated, or there is evidence of past potentially contaminating activity/ies, development should only occur where it is demonstrated that the land, buildings and/or water can be made suitable for its intended use prior to commencement of that use.

Energy Efficiency

OBJECTIVE

Objective 30: Development which is compatible with the long term sustainability of the environment, minimises consumption of non-renewable resources and utilises alternative energy generation systems.

PRINCIPLES OF DEVELOPMENT CONTROL

All Development

53 Buildings should provide adequate thermal comfort for occupants and minimise the need for energy use for heating, cooling and lighting by:

(a) providing an internal day living area with a north-facing window, other than for minor
additions*, by:

(i) arranging and concentrating main activity areas of a building to the north for solar
penetration; and
(ii) placing buildings on east-west allotments against or close to the southern boundary to
maximise northern solar access and separation to other buildings to the north.

(b) efficient layout, such as zoning house layout to enable main living areas to be separately heated and cooled, other than for minor additions;
(c) locating, sizing and shading windows to reduce summer heat loads and permit entry of winter sun;
(d) allowing for natural cross ventilation to enable cooling breezes to reduce internal temperatures in summer;
(e) including thermal insulation of roof, walls, floors and ceilings and by draught proofing doors, windows and openings;
(f) ensuring light colours are applied to external surfaces that receive a high degree of sun exposure, but not to an extent that will cause glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles;
(g) providing an external clothes line for residential development; and
(h) use of landscaping.

54 All development should be designed to promote naturally ventilated and day lit buildings to minimise the need for mechanical ventilation and lighting systems.

55 Energy reductions should, where possible, be achieved by the following:

(a) appropriate orientation of the building by:

(i) maximising north/south facing facades;
(ii) designing and locating the building so the north facade receives good direct solar radiation;
(iii) minimising east/west facades to protect the building from summer sun and winter winds;
(iv) narrow floor plates to maximise the amount of floor area receiving good daylight; and/or
(v) minimising the ratio of wall surface to floor area.

(b) window orientation and shading;
(c) adequate thermal mass including night time purging to cool thermal mass;
(d) appropriate insulation by:

(i) insulating windows, walls, floors and roofs; and
(ii) sealing of external openings to minimise infiltration.

(e) maximising natural ventilation including the provision of openable windows;
(f) appropriate selection of materials, colours and finishes; and
(g) introduction of efficient energy use technologies such as geo-exchange and embedded, distributed energy generation systems such as cogeneration*, wind power, fuel cells and solar photovoltaic panels that supplement the energy needs of the building and in some cases, export surplus energy to the electricity grid.

56 Orientation and pitch of the roof should facilitate the efficient use of solar collectors and photovoltaic cells.

57 Buildings, where practical, should be refurbished, adapted and reused to ensure an efficient use of resources.

58 New buildings should be readily adaptable to future alternative uses.

59 Selection of internal materials for all buildings should be made with regard to internal air quality and ensure low toxic emissions, particularly with respect to paint and joinery products.

Residential Development

60 New residential development and residential extensions should be designed to minimise energy consumption and limit greenhouse gas emissions.

61 Development is encouraged to avoid heat loss by incorporating treatments, such as double glazing of windows along the southern elevation, or by minimizing the extent of windows facing south.

Renewable Energy

OBJECTIVES

Objective 31: The development of renewable energy facilities, such as wind and biomass energy facilities, in appropriate locations.

Objective 32: Renewable energy facilities located, sited, designed and operated to avoid or minimise adverse impacts and maximise positive impacts on the environment, local community and the State.

PRINCIPLES OF DEVELOPMENT CONTROL

62 Renewable energy facilities, including wind farms, should be located, sited, designed and operated in a manner which avoids or minimises adverse impacts and maximises positive impacts on the environment, local community and the State.

63 Renewable energy facilities, including wind farms, and ancillary developments should be located in areas that maximise efficient generation and supply of electricity.

Micro-climate and Sunlight

OBJECTIVES

Objective 33: Buildings which are designed and sited to be energy efficient and to minimise micro-climatic and solar access impacts on land or other buildings.

Objective 34: Protection from rain, wind and sun without causing detriment to heritage places, street trees or the integrity of the streetscape.

PRINCIPLES OF DEVELOPMENT CONTROL

64 Development should be designed and sited to minimise micro-climatic and solar access impact on adjacent land or buildings, including effects of patterns of wind, temperature, daylight, sunlight, glare and shadow.

65 Development should be designed and sited to ensure an adequate level of daylight, minimise overshadowing of buildings, and public and private outdoor spaces, particularly during the lunch time hours.

66 Development should not significantly reduce daylight to private open space, communal open space, where such communal open space provides the primary private open space, and habitable rooms in adjacent City Living Zone, Adelaide Historic (Conservation) Zone and North
Adelaide Historic (Conservation) Zone.

67 Glazing on building facades should not result in glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles.

68 Buildings within the Core and Primary Pedestrian Areas identified in Map Adel/1 (Overlays 2, 2A and 3), unless specified otherwise within the relevant Zone or Policy Area, should be

designed to provide weather protection for pedestrians against rain, wind and sun. The design of canopies, verandahs and awnings should be compatible with the style and character of the building and adjoining buildings, as well as the desired character, both in scale and detail.

69 Weather protection should not be introduced where it would interfere with the integrity or heritage value of heritage places or unduly affect street trees.

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

Infrastructure

OBJECTIVES

Objective 40: Minimisation of the visual impact of infrastructure facilities.

Objective 41: Provision of services and infrastructure that are appropriate for the intended development and the desired character of the Zone or Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

71 Provision should be made for utility services to the site of a development, including provision for the supply of water, gas and electricity and for the satisfactory disposal and potential re-use of sewage and waste water, drainage and storm water from the site of the development.

72 Service structures, plant and equipment within a site should be designed to be an integral part of the development and should be suitably screened from public spaces or streets.

Built Form and Townscape

OBJECTIVES

Objective 46: Reinforcement of the city's grid pattern of streets through:

(a) high rise development framing city boulevards, the Squares and Park Lands
(b) vibrant main streets of a more intimate scale that help bring the city to life
(c) unique and interesting laneways that provide a sense of enclosure and intimacy.

Objective 47: Buildings should be designed to:

(a) reinforce the desired character of the area as contemplated by the minimum and maximum building heights in the Zone and Policy Area provisions;
(b) maintain a sense of openness to the sky and daylight to public spaces, open space areas and existing buildings;
(c) contribute to pedestrian safety and comfort; and
(d) provide for a transition of building heights between Zone and Policy Areas where building height guidelines differ.

Objective 48: Development which incorporates a high level of design excellence in terms of scale, bulk, massing, materials, finishes, colours and architectural treatment.

PRINCIPLES OF DEVELOPMENT CONTROL

76 Where development significantly exceeds quantitative policy provisions, it should demonstrate significantly higher standard of design outcome in relation to qualitative policy provisions including pedestrian and cyclist amenity, activation, sustainability and public realm and streetscape contribution.

Height, Bulk and Scale

PRINCIPLES OF DEVELOPMENT CONTROL

77 Development should be of a high standard of design and should reinforce the grid layout and distinctive urban character of the City by maintaining a clear distinction between the following:

(a) the intense urban development and built-form of the town acres in the Capital City, Main Street, Mixed Use, City Frame and City Living Zones;
(b) the less intense and more informal groupings of buildings set within the landscaped environment of the Institutional Zones;
(c) the historic character of the Adelaide and North Adelaide Historic (Conservation) Zones and groups of historic housing within the City Living Zone; and
(d) the open landscape of the Park Lands Zone.

78 The height and scale of development and the type of land use should reflect and respond to the role of the street it fronts as illustrated on Map Adel/1 (Overlay 1).

79 The height, scale and massing of buildings should reinforce:

(a) the desired character, built form, public environment and scale of the streetscape as contemplated within the Zone and Policy Area, and have regard to:

(i) maintaining consistent parapet lines, floor levels, height and massing with existing buildings consistent with the areas desired character;
(ii) reflecting the prevailing pattern of visual sub-division of neighbouring building frontages where frontages display a character pattern of vertical and horizontal sub-divisions; and
(iii) avoiding massive unbroken facades.

(b) a comfortable proportion of human scale at street level by:

(i) building ground level to the street frontage where zero set-backs prevail;
(ii) breaking up the building facade into distinct elements;
(iii) incorporating art work and wall and window detailing; and
(iv) including attractive planting, seating and pedestrian shelter.

80 Where possible, large sites should incorporate pedestrian links and combine them with publicly accessible open space.

81 Buildings and structures should not adversely affect by way of their height and location the long term operational, safety and commercial requirements of Adelaide International Airport. Buildings and structures which exceed the heights shown in Map Adel/1 (Overlay 5) and which penetrate the Obstacle Limitation Surfaces (OLS) should be designed, marked or lit to ensure the safe operation of aircraft within the airspace around the Adelaide International Airport.

82 Buildings within the Capital City Zone should be built to the street edge to reinforce the grid pattern, create a continuity of frontage and provide definition and enclosure to the public realm whilst contributing to the interest, vitality and security of the pedestrian environment.

Composition and Proportion

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

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

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

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

Articulation and Modelling

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

86 Balconies should:

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

87 No part of any fully enclosed building should extend over property boundaries, including streets and public spaces, whether above a balcony at a lower level or not.

Materials, Colours and Finishes

88 The design, external materials, colours and finishes of buildings should have regard to their surrounding townscape context, built form and public environment, consistent with the desired character of the relevant Zone and Policy Area.

89 Development should be finished with materials that are sympathetic to the design and setting of the new building and which incorporate recycled or low embodied energy materials. The form, colour, texture and quality of materials should be of high quality, durable and contribute to the desired character of the locality. Materials, colours and finishes should not necessarily imitate materials and colours of an existing streetscape

90 Materials and finishes that are easily maintained and do not readily stain, discolour or deteriorate should be utilised.

91 Development should avoid the use of large expanses of highly reflective materials and large areas of monotonous, sheer materials (such as polished granite and curtained wall glazing).

Sky and Roof Lines

OBJECTIVE

Objective 49: Innovative and interesting skylines which contribute to the overall design and performance of the building.

PRINCIPLES OF DEVELOPMENT CONTROL

92 Where a prevailing pattern of roof form assists in establishing the desired character of the locality, new roof forms should be complementary to the shape, pitch, angle and materials of adjacent building roofs.

93 Buildings should be designed to incorporate well designed roof tops that:

(a) reinforce the desired character of the locality, as expressed in the relevant Zone or Policy Area;
(b) enhance the skyline and local views;

(c) contribute to the architectural quality of the building;
(d) provide a compositional relationship between the upper-most levels and the lower portions of the building;
(e) provide an expression of identity;
(f) articulate the roof, breaking down its massing on large buildings to minimise apparent bulk;
(g) respond to the orientation of the site; and
(h) create minimal glare.

Active Street Frontages

OBJECTIVES

Objective 50: Development that enhances the public environment and, where appropriate provides activity and interest at street level, reinforcing a locality's desired character.

Objective 51: Development designed to promote pedestrian activity and provide a high quality experience for City residents, workers and visitors by:

(a) enlivening building edges;
(b) creating welcoming, safe and vibrant spaces;
(c) improving perceptions of public safety through passive surveillance; and
(d) creating interesting and lively pedestrian environments.

PRINCIPLES OF DEVELOPMENT CONTROL

94 Development should be designed to create active street frontages that provide activity and interest to passing pedestrians and contribute to the liveliness, vitality and security of the public realm.

95 Retail frontages should be designed to provide interest to passing pedestrians at street level and relief to building mass.

96 Commercial buildings should be designed to ensure that ground floor facades are rich in detail so they are exciting to walk by, interesting to look at and to stand beside.

Outdoor Dining

OBJECTIVE

Objective 52: Development that contributes to the vibrancy, activity and desired character of a locality.

PRINCIPLES OF DEVELOPMENT CONTROL

97 Outdoor dining should:

(a) be located outside the associated premises;
(b) provide sufficient set-backs, such as from kerbs and property boundaries, and clearances, such as from buildings;
(c) be located in an area safe for patrons where the security of the building is not compromised;
(d) ensure the dining area is set back from the building line at street intersections;
(e) ensure unimpeded pedestrian flow through free and uninterrupted pedestrian paths; and
(f) ensure wheelchair access to pedestrian ramps is not compromised.

98 Structures should:
(a)
(b) be of high quality design and form an integral part of the streetscape;
(b) not restrict public access;

(c) not detract or restrict views of significant sightlines, buildings and landmarks;

99 Signage that identifies the business name or logo, or advertises goods sold on the premises is only appropriate on glass and canvas screens and umbrellas and should meet the following:

(a) signage and advertisements should be designed to improve and complement the amenity of the premises, be of an appropriate design and consistent with the desired character of the locality;
(b) advertisements on outdoor dining items such as umbrellas and canvas screens should not exceed a portion that covers 10 percent of the total available space on each outdoor dining item, up to half of which may be commercial advertisements in the form of product logos used or sold by the premises;
(c) advertisements should not be illuminated or animated; and
(d) third party advertising on outdoor dining items is inappropriate.

Landscaping

OBJECTIVE

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

PRINCIPLES OF DEVELOPMENT CONTROL

100 Landscaping should:

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

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

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

103 Landscaping between the road and dwellings should be provided to screen and protect the dwellings from dust and visual impacts of the road.

Advertising

OBJECTIVE

Objective 56: Outdoor advertisements that are designed and located to:

(a) reinforce the desired character and amenity of the locality within which it is located and rectify existing unsatisfactory situations;
(b) be concise and efficient in communicating with the public, avoiding a proliferation of confusing and cluttered displays or a large number of advertisements; and
(c) not create a hazard.

PRINCIPLES OF DEVELOPMENT CONTROL

104 Advertisements should be designed to respect and enhance the desired character and amenity of the locality by the means listed below:

(a) the scale, type, design, location, materials, colour, style and illumination of any

advertisements should be compatible with the design and character of the buildings and land to which it is related, and should be in accordance with provisions for the Zone and Policy Area in which it is situated and any relevant adjacent Zones or Policy Areas;
(b) advertisements should be integrated with the architectural form, style and colour of buildings and wherever possible, requirements for advertisements should be considered in the design of new buildings;
(c) advertisements should be artistically interesting in terms of graphics and construction with intricacy and individuality in design encouraged while maintaining consistency in design and style where co-ordinated advertisements are appropriate;
(d) structural supports should be concealed from public view or of minimal visual impact;
(e) advertisements on individual premises should be co-ordinated in terms of type and design and should be limited in number to minimize visual clutter;
(f) advertisements should be displayed on fascia signs or located below canopy level;
(g) advertisements on buildings or sites occupied by a number of tenants should be coordinated, complementary and the number kept to a minimum; and
(h) advertisements on or adjacent to a heritage place should be designed and located to respect the heritage value of the heritage place.

105 Product advertisements illustrating products sold on the premises in conjunction with the business name should not exceed 25 percent of the area of any advertisement.

106 Advertisements should not endanger public safety or detrimentally affect the amenity of adjacent premises by reason of their location, position, construction or design and should:

(a) not emit excessive glare or reflection from internal or external illumination;
(b) not obscure road users' and pedestrians' views of vehicles, pedestrians or potentially hazardous road features;
(c) not cause confusion with, or reduce the effectiveness of traffic control devices;
(d) have a clearance between the footpath and base or underside of projecting signage of at least 2.5 metres for permanent advertisements and 2.3 metres for temporary advertisements, and between the kerb face and outside edge of the sign of at least 600 millimetres; and
(e) permit safe and convenient pedestrian movement.

107 Temporary advertisement hoardings or shrouds required for the screening of construction sites or for creating visual interest should occur only where they are:

(a) of a high standard of design;
(b) displayed only during the period of construction;
(c) comprised of high quality opaque, solid and non-reflective material that is durable, low maintenance and appropriate to the City context;
(d) required to conceal wiring and conduits; and
(e) do not create undue risk to public or private safety.

Transport and Access

Access and Movement

OBJECTIVE

Objective 60: Access to and movement within the City that is easy, safe, comfortable and convenient with priority given to pedestrian and cyclist safety and access.

PRINCIPLES OF DEVELOPMENT CONTROL

108 Development should provide safe, convenient and comfortable access and movement.

109 Vehicle access points along primary and secondary city access roads and local connector roads, as shown on Map Adel/1 (Overlay 1) should be restricted.

Pedestrian Access

OBJECTIVES

Objective 61: Development that promotes the comfort, enjoyment and security of pedestrians by providing shelter and reducing conflict with motor vehicles.

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

Objective 63: Safe and convenient design of and access to buildings and public spaces, particularly for people with disabilities**.**

PRINCIPLES OF DEVELOPMENT CONTROL

110 Development should reflect the significance of the paths and increase the permeability of the pedestrian network identified within Map Adel/1 (Overlay 2) by ensuring:

(a) pedestrians are not disrupted or inconvenienced by badly designed or located vehicle access ramps in footpaths or streets; and
(b) vehicle and service entry points are kept to a minimum to avoid adverse impact on pedestrian amenity.

111 Within the Core, Primary and Secondary Pedestrian Areas identified within Map Adel/1 (Overlays 2, 2A and 3), development should be designed to support the establishment and maintenance of continuous footpaths so that pedestrian flow is free and uninterrupted. Pedestrian access should be provided at ground level mid-block between all streets.

112 Development should provide and maintain pedestrian shelter, access and through-site links in accordance with the walking routes identified within Map Adel/1 (Overlays 2, 2A and 3) and the provisions of the Zone or Policy Area in which it is located. Such facilities should be appropriately designed and detailed to enhance the pedestrian environment, have regard to the mobility needs of people with disabilities, and be safe, suitable and accessible.

113 Corner buildings in the Central Business Policy Area of the Capital City Zone, buildings adjacent to street intersections and buildings along a high concentration public transport route or along public transport pedestrian routes identified within Map Adel/1 (Overlay 4) should provide weather protection for pedestrians in the form of verandahs, awnings or canopies. Where verandahs or awnings are provided which block street lighting, they should include additional lighting beneath the canopy.

114 Permanent structures over a footpath should have a minimum clearance of 3.0 metres above the existing footpath level, except for advertisements which should have a minimum clearance of 2.5 metres and temporary structures and retractable canopies which should have a minimum clearance of 2.3 metres above the existing footpath level.

115 Where posts are required to support permanent structures, they should be located at least 600 millimetres from the kerb line.

116 Access for people with disabilities should be provided to and within all buildings to which members of the public have access in accordance with the relevant Australian Standards. Such access should be provided through the principal entrance, subject to heritage considerations and for exemptions under the relevant legislation.

Bicycle Access

OBJECTIVES

Objective 64: Greater use of bicycles for travel to and within the City and the improvement of conditions, safety and facilities for cyclists.

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

PRINCIPLES OF DEVELOPMENT CONTROL

117 Development should have regard to the bicycle routes identified within Map Adel/1 (Overlay 3) by:

(a) limiting vehicular access points; and
(b) ensuring that vehicles can enter and leave the site in a forward direction, thereby avoiding reverse manoeuvres.

118 An adequate supply of on-site secure bicycle parking should be provided to meet the demand generated by the development within the site area of the development. Bicycle parking should be provided in accordance with the requirements set out in Table Adel/6.

119 Onsite secure bicycle parking facilities for residents and employees (long stay) should be:

(a) located in a prominent place;
(b) located at ground floor level;
(c) located undercover;
(d) located where passive surveillance is possible, or covered by CCTV;
(e) well lit and well signed;
(f) close to well used entrances;
(g) accessible by cycling along a safe, well lit route;
(h) take the form of a secure cage with locking rails inside or individual bicycle lockers; and
(i) in the case of a cage have an access key/pass common to the building access key/pass.

120 Onsite secure bicycle parking facilities for short stay users (i.e. bicycle rails) should be:

(a) directly associated with the main entrance;
(b) located at ground floor level;
(c) located undercover;
(d) well lit and well signed;
(e) located where passive surveillance is possible, or covered by CCTV; and
(f) accessible by cycling along a safe, well lit route.

121 Access to bicycle parking should be designed to:

(a) minimise conflict with motor vehicles and pedestrians;
(b) ensure the route is well signed and well lit including the use of road markings such as a bicycle logo if appropriate to help guide cyclists; and
(c) ensure the route is unhindered by low roof heights.

Traffic and Vehicle Access

OBJECTIVES

Objective 68: Development that supports a shift toward active and sustainable transport modes (i.e. public transport, cycling and walking).

Objective 69: An enhanced City environment and the maintenance of an appropriate hierarchy of roads to distribute traffic into the City to serve development in preference to through traffic.

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

PRINCIPLES OF DEVELOPMENT CONTROL

122 Development should be designed so that vehicle access points for parking, servicing or deliveries, and pedestrian access to a site, are located to minimise traffic hazards and vehicle queuing on public roads. Access should be safe, convenient and suitable for the development on the site, and should be obtained from minor streets and lanes unless otherwise stated in the provisions for the relevant Zone or Policy Area and provided residential amenity is not unreasonably affected.

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

124 Where practicable, development sites should contain sufficient space for the location of construction equipment during the course of building construction, so that development does not rely on the use of Council road reserves to locate such equipment**.**

125 Vehicular access to development located within the Core and Primary Pedestrian Areas identified in Map Adel/1 (Overlay 2A) should be limited and designed to minimise interruption to street frontages.

126 Where vehicular access to a development is gained by an existing crossing in the Core Pedestrian Area identified in Map Adel/1 (Overlay 2A), there should be no increase in the number of parking spaces served by the crossing, nor any increase in the number of existing crossings serving that development.

Economic Growth and Land Use

OBJECTIVES

Objective 73: The role of the City enhanced as:

(a) the community, civic and cultural heart of South Australia and as a driving force in the prosperity of the State;
(b) the State centre for business, administration, services, employment, education, political and cultural activities, government and public administration;
(c) a welcoming, secure, attractive and accessible meeting place for the people of metropolitan Adelaide and beyond for leisure, entertainment, civic and cultural activity, specialty shopping, personal and community services;
(d) the gateway to the attractions of South Australia for international and interstate visitors by developing a wide range of visitor accommodation, facilities and attractions, particularly attractions which showcase the particular strengths of South Australia; and
(e) a great place to live, with a growing diversity of accommodation for different incomes and lifestyles.

Objective 74: A business environment which encourages investment from domestic and foreign sources, business development and employment.

Objective 75: Development which reinforces clusters and nodes of activity and distinctive local character.

Objective 76: A diverse mix of commercial, community, civic and residential activities to meet the future needs of the Capital City of South Australia.

PRINCIPLES OF DEVELOPMENT CONTROL

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

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