

Trust Company (Australia) Limited as trustee for WH Gray Street Trust, c/- Masterplan SA Pty Ltd

Staged construction of student accommodation building of ground and 16 upper floors with 2 shops and ancillary facilities

101-109 Gray Street, Adelaide 5000

DA Number 020/A053/17

TABLE OF CONTENTS

	PAGE NO
AGENDA REPORT	2- 30
ATTACHMENTS	
1: PLANS	31
2: APPLICATION DOCUMENTS	
a. Certificates of Title	59
b. Planning Report – Masterplan Town + Country Planners	68
c. Design Statement – Brown Falconer	111
d. Environmental Noise Assessment - Sonus	116
e. Airspace Assessment – Thompson GCS	130
f. Environmental Site History, Soil and Groundwater Assessment – A.M. Environmental Consulting	149
g. Waste Collection Access Review and Bicycle Parking – GTA Consultants	584
h. Wind Impact Statement – Vipac	589



	PAGE NO
i. Waste Management Plan – Rawtec j. Sustainability Management Plan – Lucid Consulting k. Site Landscaping Plan	
3: City of Adelaide comments and applicant responses	
4: AGENCY COMMENTS a. Associate Government Architect b. Commonwealth Secretary for the Department of Transport and Regional Services	
5: ADDITIONAL INFORMATION a. Minutes of Meeting – Pre-lodgement service – 12 April 2017 b. DPTI comments and applicant responses c. Applicant Responses to Associate Government Architect comments d. Response by Sonus to Council comments on acoustic impacts e. Applicant Scale Comparison	

OVERVIEW

Application No	020/A053/17
Unique ID/KNET ID	Appian ID 2303 / Knet 2017/16163/01
Applicant	Trust Company (Australia) Limited as trustee for WH Gray Street Trust
Proposal	Staged construction of student accommodation building of ground and 16 upper floors with 2 shops and ancillary facilities
Subject Land	101-109 Gray Street, Adelaide 5000
Zone/Policy Area	Capital City Zone. No applicable Policy Area.
Relevant Authority	State Commission Assessment Panel
Lodgement Date	10 July 2017 (substituted plan set received on 25 October 2017)
Council	City of Adelaide
Development Plan	Adelaide (City) Development Plan, Consolidated 20 June 2017
Type of Development	Merit
Public Notification	Category 1
Representations	N/A
Referral Agencies	Government Architect Commonwealth Secretary for Department of Transport and Regional Services
Report Author	David Barone, Consultant Planner
RECOMMENDATION	Development Plan Consent subject to conditions

EXECUTIVE SUMMARY

The application is for the staged construction of a student accommodation building of ground and 16 upper floors with 2 shops and ancillary facilities. The development will comprise 756 rooms (in total 772 beds) in a single tower.

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

A maximum building height of 43 metres is specified for development on the subject site. The proposed development seeks to exceed this level by 16 metres, and because it incorporates specified design features is considered eligible to do so in accordance with recently amended over-height provisions of the Capital City Zone.

The proposal has been subject to several iterations throughout the pre-lodgement and assessment phases to respond to matters raised by the Associate Government Architect and the City of Adelaide. On 25 October 2017 a revised plan set was provided, to substitute for the plan set which accompanied the original application.

The resulting application, as amended, is considered to respond well to Development Plan policy guiding design and appearance of medium to high-scale development, and particularly **Student Accommodation, in Adelaide's CBD.**

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 Strategic Context

The site is within the Capital City Zone, but outside any specified Policy Area. The Objectives and the Desired Character for the Capital City Zone encourage a wide range of commercial, community and residential land uses, a high scale of development with an activated pedestrian environment, and an emphasis on high quality contemporary architecture. Student accommodation is specifically envisaged as a land use in the Capital City Zone.

The site is subject to a prescribed maximum height limit of 43 metres, but following the commencement of the Capital City Policy Review (Design Quality) Ministerial amendment to the Adelaide (City) Development Plan in May 2017, discretion exists for the approval of development which exceeds a prescribed mandatory height in specific circumstances. Approval to exceed a prescribed maximum height will be appropriate for a development which reinforces the anticipated city form and includes specified design and sustainability measures.

Mandatory height limits and resulting conditions arising from Adelaide Airport operations are also applicable and must be complied with.

1.2 Pre-Lodgement Process

The applicant participated in the Department of Planning, Transport and **Infrastructure's** pre-lodgement service, including a Design Review Panel session on 24 May 2017.

While a Pre-Lodgement Agreement was not concluded in relation to the proposed development, the Associate Government Architect has acknowledged that the lodged scheme (which was formally referred to the Associate Government Architect on 25 September 2017) addresses most of the issues and concerns raised in the Design Review session.

The issues raised by the Associate Government Architect and the design changes and other responses made by the applicant are outlined in section 5.2, below.

1.3 Substituted plans

On 25 October 2017 the applicant provided the State Commission Assessment Panel with a revised set of application plans (including site and context plans, floor plans, elevations and perspectives) to substitute for the original application plan set. The substituted plan set responds to issues previously raised by the Associate Government Architect, by the City of Adelaide and by DPTI.

2. DESCRIPTION OF PROPOSAL

Application details are contained in the ATTACHMENTS.

The proposal is for the construction of a single building of ground and 16 upper floors, providing 756 student accommodation rooms, indoor and outdoor common areas including a gated outdoor courtyard, a rooftop garden on Level 16, other facilities and services and 2 retail tenancies.

The room mix is comprised of the following:

- Studio: 533
- DDA (disability): 16 (1 per level)
- Twin Bed Share: 16 (32 beds) (1 per level)
- 6 Bed Clusters: 192 (2 clusters per level)

The facility will be managed by UniLodge who also operate a number of other facilities in Adelaide (including the nearby building at 304 Waymouth Street).

The building is designed with a base podium comprising the ground floor in an L shape addressing the Gray Street and Albert Street frontages, with the tower element set back between 3 metres (northern end) and 7 metres (southern end) from the Gray Street frontage. The principal building access is via a glazed entry located along the Gray Street frontage. The building is set back 4 metres from the northern side boundary and approximately 3 metres and from the western boundary.

A ground level courtyard of approximately 580 square metres is positioned to the north-west of the building and is fenced for security and privacy. Access to the courtyard is via security coded gates from Queen Street and through the main building entry. The courtyard interfaces with the centralised communal living spaces and study hub on ground level.

The building is proposed to be finished with precast concrete panels with Class 1 finish with a dark grey oxide coloured finish to levels 1 and 2. A ground level, the building materials include expressed jointed sheet in a grey colour with an Ashlar pattern finish to wall and parapet elements, aluminium framed glazing with timber look aluminium fins at certain locations. The central module of the building will be faced with a green facade system positioned 500mm from the façade and comprising planters every second floor level and full height mesh with 240mm apertures.

Development Approval for the demolition of the existing warehouse/office buildings on the subject site was granted by Adelaide City Council on 20 October 2017.

The applicant has advised of the following construction stages for the development:

- Stage 1: Piling;
- Stage 2: Pile Capping;
- Stage 3: Superstructure;
- Stage 4: Façade, fit-out and services.

A summary of the proposal is as follows:

Land Use Description	Student Accommodation and Shop
Building Height	59 metres above ground level (to top of lift overrun)
Description of levels	<p>Ground Floor: Building entrance and foyer, reception, office and administrative facilities, study rooms, dining rooms and games area, gym and theatre, laundry, bike store, 2 retail tenancies (of 90m² and 53m²), bin room, fenced and gated outdoor courtyard.</p> <p>Levels 1 to 16: 756 student accommodation rooms providing a total of 772 beds, comprising a combination of studio, twin and cluster (shared bathroom) rooms. One twin room and one DDA-compliant room to each floor.</p> <p>Level 16: Rooftop garden</p>
Apartment floor area (excluding balconies)	<p>Typical floor areas:</p> <p>Studio – 17m²</p> <p>Twin Room – 33.5m²</p> <p>Cluster (6 beds) – 97m²</p>
Private open space	No private open space to apartments. Communal open space includes ground-floor courtyard (580m ²), rooftop garden on Levels 15 and 16 (each approximately 90m ²).
Site Access	<p>Principal pedestrian access – Gray Street</p> <p>Bicycle room access – Albert Street</p> <p>Waste collection – Gray Street</p>
Car and Bicycle Parking	<p>104 bicycle parking spaces in bike store room</p> <p>Additional visitor bike parking adjacent main entry</p> <p>(No provision for on-site car parking spaces)</p>
Encroachments	None indicated in application materials
Staging	<p>The following staging is indicated in the application materials:</p> <ol style="list-style-type: none"> 1. Piling 2. Pile Capping 3. Superstructure 4. Façade, fit-out and services

3. SITE AND LOCALITY

3.1 Site Description

The site consists of 3 allotments, described as follows:

Lot No	Street	Suburb	Hundred	Title
A61 FP40006	101-109 Gray Street	Adelaide	Adelaide	CT 6166/510
A487	101-109 Gray Street	Adelaide	Adelaide	CT 6166/511
A488 FP181330	101-109 Gray Street	Adelaide	Adelaide	CT 6166/512

The subject site is located at 101-109 Gray Street, Adelaide, on the western side of Gray Street between Currie Street to the north and Waymouth Street to the south. The subject site is L-shaped with frontages to Gray Street (approximately 65 metres), Albert Street (approximately 41 metres) and Queens Court (approximately 15 metres).

Existing improvements on the subject site comprise a warehouse and office buildings of one to two storeys (to the Gray Street and Albert Street frontages), with off-street parking for approximately five vehicles to the Queens Court frontage.

The subject site is flat and, the whole of it being substantially covered by buildings, does not feature any vegetation or other distinguishing features.

3.2 Locality

Within the locality, Gray Street is identified by Council as a key north-south pedestrian corridor, and is designated for upgrade to improve pedestrian amenity.

The Edinburgh Castle Hotel, located directly to the north of the subject site, and the former West Terrace Hotel, located to the south, are Local Heritage Places. The Edinburgh Castle has a prominent secondary frontage to Gray Street, with a walled beer garden adjoining the subject site along its northern boundary. It remains in use as a hotel.

The former West Terrace Hotel, with its rear boundary to Albert Street facing the **subject site's southern boundary, is now used as a lodging house trading as Chipp's House Budget Accommodation.**

Development along the eastern side of Gray Street is characterised by two- to three-storey townhouses, commercial buildings and warehouses.

Adjoining the subject site to the west is a large industrial building used by Rowell & Searle as an automotive workshop and, beyond that, a small precinct of cottages and townhouses facing Queens Court and Albert Street. The existing multi-storey UniLodge facility fronting Waymouth Street bookends Albert Street to the west.

Figure 1 – Location Map



4. COUNCIL COMMENTS or TECHNICAL ADVICE

4.1 City of Adelaide

Council provided written comment on the application on 8 September 2017.

Council's key comments are summarised as follows:

- Waste Management – storage space and additional bin rotation is needed to meet the likely waste generation and service frequency. Additional space is

needed for regular change-over and clear safe accessibility. Commercial and residential waste streams should be combined to create greater efficiency in waste stream collections.

- Traffic – insufficient bicycle parking is provided given the location and expected bicycle ownership rates for residents of the building.
- Lighting, Electrical and CCTV – the proposed development will impact on public lighting (owned and maintained by SA Power Networks along Gray Street and Albert Street). Works or modifications to public lighting and associated infrastructure should be to Council requirements and **at the developer's cost**. Any damage to City of Adelaide infrastructure, including public lighting and underground ducting, caused by project works will be repaired to Council **requirements at the developer's cost**. Lighting to any new canopies must be **the City of Adelaide's** under-veranda requirements. Lighting design and installation should be compliant with Australian Standard AS 4282 – 1997 Control of the obtrusive effects of outdoor lighting, with the relevant lighting **calculation grid, detailing property boundary lines, provided for Council's** review and records.
- River Torrens and Stormwater Impacts – stormwater runoff from the proposed development must be contained within property boundaries and collected and discharged to the Gray Street road reserve. Stormwater runoff should not be discharged to Queens Court or Albert Street. Approximately equal volumes of stormwater should be discharged from the proposed development to the northern and southern property frontages to spread runoff flow to each of the two separate Gray Street catchments.

Proposed building floor levels and levels of any proposed internal stormwater grated inlet pits or openings must provide a minimum 100mm free board to 1% AEP flood levels in Gray Street, which can be assumed to be top of kerb level.

Any seepage water from proposed planter boxes and landscaped areas located in the courtyard adjacent to the Queens Court frontage must be collected and discharged to the sewer. Seepage water must not be discharged to the building stormwater system.

Council encourages the collection, retention and re-use of stormwater for irrigation, laundry and toilet flushing and notes the 56kL firewater tank and two 8kL tanks possibly designated for stormwater re-use.

- Roads and Footpaths – Damage caused to road, footpath and kerbing infrastructure during development should be re-instated by the developer.

Applicant's response

On 25 September 2017 the applicant responded to Council's comments in the following terms:

- **Council's concerns in relation to waste management are addressed in the applicant's response to the Associate Government Architect (see section 5.2, below) and in Rawtec's amended Waste Management Plan (section 8.6.3).**
- **Council's concerns in relation to bicycle parking are addressed in the applicant's response to the Associate Government Architect and in the GTA Letter (section 8.5, below). (In any event, the substituted plans provided by the applicant on 25 October 2017 substantially increase the provision of bicycle spaces).**
- The applicant agrees to liaise with SAPN to ensure that public lighting is protected and maintained during and following construction. Requirements in relation to modifications and reinstatement of infrastructure and applicable lighting standards are noted and agreed.

- Council's requirements in relation to stormwater are noted and agreed. The applicant invites the imposition of appropriate conditions. The Sustainability Management Plan (see section 8.6.4, below) addresses water efficiency.
- All applicable requirements in relation to roads and footpaths will be complied with. The applicant invites the imposition of appropriate conditions.

4.2 Department of Planning, Transport and Infrastructure

DPTI provided written comments on the proposal on 8 September 2017. DPTI's key comments are as follows:

- A concern about the lack of rooftop garden, greenwalls or greenroof, meaning that the criteria for exceeding the prescribed height limit would not be met.
- Concern about the significant shortfall in bicycle parking spaces.
- A requirement to receive the findings of Phase 2 site contamination investigations, once available.
- A preference for larger communal breakout spaces on each level and for cluster rooms larger than proposed in the then-current application plans.
- Concerns about the bulk, scale and massing of the building as shown on the then-current application plans.
- Concerns about bin storage and waste chute locations, and green waste management strategies for each unit.

Applicant's response

The applicant replied on 25 September 2017 and in summary:

- Noted the provision of the large ground-level courtyard in lieu of a rooftop garden or terraces. (The substituted plan set received on 25 October 2017 now includes a rooftop garden and green walls).
- Noted the provision of additional bicycle facilities bringing provision to a level exceeding the average around Australia and a level in excess of expected actual usage. (The substituted plan set received on 25 October 2017 has provided a further substantial increase to 104 bicycle parking spaces in a bike store room).
- Stated that communal breakout spaces and cluster rooms were of a size considered appropriate for their intended use and purpose.
- Noted changes made to the proposal to address concerns about building bulk, scale and massing, including a comparison to recently constructed buildings in the vicinity. (The substituted plan set received on 25 October 2017 has made further changes to the bulk, scale and massing of the building).
- Noted an increase in the space allocated for bin storage, a reduction in the frequency of waste collection and the provision of organic waste bins in waste rooms on each floor.

5. STATUTORY REFERRAL BODY COMMENTS

Referral responses are contained in the ATTACHMENTS.

5.1 Associate Government Architect

The Government Architect or the Associate Government Architect is a mandatory referral in accordance with Item 24 – Certain Development in the City of Adelaide of the table in Schedule 8 to the Development Regulations 2008. The Commission must have *regard* to this advice.

On 31 May 2017 the Associate Government Architect provided written comment following a site visit and pre-lodgement panel meeting. The Government Architect's comments were as follows:

- There is in-principle support for a mixed-use and high density student residential facility on the site.
- Support is contingent on the proposal achieving a high quality design outcome particularly in terms of residential amenity, form, massing and expression of the buildings.
- Discussions with the City of Adelaide were encouraged to develop an appropriate outcome for Gray Street taking account of pedestrian traffic, lighting, landscaping and other relevant matters.
- Building massing and configuration should be reconsidered to improve solar access and privacy to private rooms and the central courtyard. The proposed size of student rooms, particularly in the 6-bed clusters, was also a concern.
- Building articulation and design should be reconsidered to further mitigate the mass and bulk of the proposed development.
- Opportunities to locate shared student spaces and infrastructure throughout the building should be considered.
- Principles of ecologically sustainable development (ESD) should be applied to the ongoing design development of site layout, built form and landscape.

On 5 October 2017 the Associate Government Architect provided further written comment in response to a formal referral of the application on 25 September 2017. The following comments were made:

- In-principle support remains for a high density student residential facility on the site.
- The visual impact of the mass and bulk of the development is yet to be successfully mitigated, and the proposal does not offer significant amenity and sustainability merits to justify exceeding the prescribed maximum height applicable to the site.
- A street setback of six metres is required to the Gray Street frontage, above podium level.
- The bicycle facilities including number of bicycle parking spaces (35) are insufficient.
- As relevant authority, when considering the application SCAP may like to consider the following specific aspects:
 - the height of the building
 - setbacks above podium level to mitigate the impact to the streetscape
 - bicycle parking numbers
 - architectural expression and building articulation as a means of mitigating apparent bulk
 - the communal facility strategy
 - bedroom sizes in six-bed clusters
 - incorporation of ESD principles
 - the final schedule of materials and colours for building and landscaped areas.

Applicant's Response

On 25 October 2017, following a further design meeting held on 19 October 2017, the applicant provided a revised set of application drawings for substitution in place of those accompanying the original application. In addition, written comment was made by the applicant noting that:

- An accessible rooftop garden now forms part of the application plans.
- The size of individual rooms within the 6-room clusters should not be considered in isolation, but are more analogous to a 6-bedroom residence with shares bathroom, kitchen, lounge and dining rooms. Average room size in the 6-room clusters compares favourably with other developments and other room types. The 6-room clusters have been used successfully in other projects in Australia and New Zealand.
- A plan had been drawn to demonstrate how the internal layout of the proposed development might be reconfigured to a mixture of 1, 2 and 3 bedroom apartments.
- Green façades and other amendments to the west- and east-facing façades have been made to increase the articulation and reduce the visual mass of the built form. The green façades will consist of plants positioned approximately every 2 floors in purpose-made planter box modules, plumbed for irrigation and discharging to the wastewater system.
- External shading hoods will be provided to west-facing windows not protected by the green walls.
- A materials board (actual materials, not photographs) of building finishes will be provided in advance of the SCAP meeting. Concrete Class 1 will be used throughout the project.

On 1 November 2017, the Associate Government Architect provided further written comment in response to the latest plan set provided by the applicant. The following comments were made:

- Support the proposed height of 55 metres on balance as the site is proximate to the 53m maximum height area
- **The provision of 'green walls' and variation in building heights assists in managing the visual impact of the mass and bulk of the development**
- Continue to suggest a six metre setback to the Gray Street frontage to mitigate the large scale development impact on this narrow street
- The provision of 104 bicycle spaces is supported
- The folded sun-shading devices proposed to the exposed windows on the western façade is supported and are considered to be well integrated into the overall architectural expression
- Support the overall direction to break down the overall scale of the building form, but recommend additional development of modelling and three dimensional articulation strategies to further reduce the visual bulk
- Remain concerned about the proposed size of the student rooms, particularly the six bed clusters.
- Further demonstration and detail as to the success of the green wall is critical to support for the project. Support the engagement of a specialist consultant however information on design, management and maintenance is required as part of the detailed design of the development.

5.2 Commonwealth Secretary for the Department of Transport and Regional Services

The Commonwealth Secretary for the Department of Transport and Regional Services (the Secretary) is a mandatory referral in accordance with Item 9 – Airports of the table in Schedule 8 to the Development Regulations 2008, because the Development Plan contains a map entitled Airport Building Heights and the proposed development would exceed the height prescribed in that map for the subject site.

An Airspace Assessment in the form of a letter dated 15 May 2017 from Thompson GCS accompanies the Application. It notes that:

- Each of the two towers comprising the proposed development will be constructed to a maximum height of 101.0 metres AHD. A crane to be used for construction will be the subject of a separate prescribed height application.
- The Adelaide Airport Obstacle Limitation Surface (OLS) above the subject site is 65.0 metres AHD. The proposed development therefore requires approval to penetrate the Adelaide OLS by 36.0 metres.
- The Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) surface above the subject site is estimated at 140.0 metres AHD. The proposed development is therefore below the PANS-OPS surface. The crane proposed to be used for construction will remain below the PANS-OPS surface.
- An aviation study undertaken in relation to the proposed development has concluded that the proposed development will present no risk to aircraft or helicopter operations.

Under Item 9 of the table, the Secretary may direct the Commission to refuse the application, or to impose such conditions as the Secretary thinks fit if the application is approved.

On 11 October 2017 the delegate for the Secretary approved a building on the subject site to a maximum height of 101 metres AHD. The approval was made subject to 7 specific conditions. These conditions are incorporated in the Planning Conditions which form part of the Recommendation in part 9 of this report.

6. PUBLIC NOTIFICATION

Principle of Development Control 40 of the Capital City Zone provides that all forms of development other than those assigned to Category 2 are Category 1 (public notification not required) forms of development.

As the proposed development is not assigned to Category 2, it is a Category 1 development and no public notification was required.

7. POLICY OVERVIEW

The subject site is within the Capital City Zone as shown below in Figure 2 and as described within the Adelaide (City) Development Plan Consolidated 20 June 2017. No Policy Area applies to the subject site.

Relevant planning policies are contained in Appendix One and summarised below.

Figure 2 – Zoning Map



7.1 Zone

The Desired Character for the Capital City Zone is as the economic and cultural focus of the State, with an increased population complementing the opportunities and experiences provided in the City and increasing its vibrancy.

High scale development is envisaged, with walls that frame the streets, and create an interesting pedestrian environment. Maintaining human scale at ground floor levels is emphasised through careful building articulation and fenestration, frequent openings, verandahs, balconies, awnings and other features that provide weather protection. In narrow and minor streets or 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.

A 53 metres height limit is identified for the subject site, although the zone does provide for development in excess of this height where it demonstrates a number of design criteria relating to open space improved amenity and sustainability.

Non-residential land uses at ground-floor level such as shops, cafés and restaurants are encouraged.

New development is to achieve high design quality by being contextual, durable, inclusive, sustainable and amenable.

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.

Both Student Accommodation and Shop are envisaged forms of development within the Capital City Zone.

7.2 Council Wide

The Council Wide section of the Development Plan provides relevant guidance in relation to the following areas:

Housing Choice

Objectives include a variety of housing options which suite the widely differing needs of future residents (Housing Choice, Objective 6); a range of long and short term residential opportunities to increase the number and range of dwellings available (Objective 7) and a broad range of accommodation to meet the needs of specific groups while ensuring integration with existing residential communities (Objective 8).

Student Accommodation

Student accommodation should create an affordable, safe, healthy and comfortable living environment (Student Accommodation, Objective 9). Principle of Development Control (PDC) 10 provides for reduced internal floor areas, car parking storage areas and/or areas of private open space for student accommodation compared to other forms of dwellings provided a number of other measures are accommodated within the development that contribute to the needs of students, assist in maintaining a suitable level of amenity for students and provide flexibility for adaptation to other housing forms into the future.

Importantly, in the absence of specific numerical guidance, PDC 13 provides direction on the design objectives for sizing student accommodation rooms including accommodating a single bed, book shelves, a desk and workspace, and a cupboard/wardrobe.

Medium to High Scale Residential/Serviced Apartment

Medium to high-scale residential (including student accommodation) provisions high standards of amenity, environmental performance and internal layouts within development. A desire for development that is adaptable to meet a variety of accommodation and living needs is sought, including well-designed and functional recreation and storage areas.

The policies also speak to legibility and safety in the design of buildings, particularly in regard to building entrances oriented towards the street, visible and easily identified, as well as entrances to individual dwellings located as close as practical to lift and/or lobby access and avoiding the creation of potential areas for entrapment.

Built Form and Townscape

See section 8.3, below.

Transport and Access

See section 8.5, below.

Environmental

See section 8.6, below.

7.3 Overlays

7.3.1 Affordable Housing

The proposal is subject to the affordable housing overlay.

7.3.2 Adelaide Airport Building Heights

Prescribed height limits are specified for the subject site under the Adelaide (City) Airport Building Heights Map Adel/1 (Overlay 5). Refer to section 5.3 above for further detail.

8. PLANNING ASSESSMENT

The State Commission Assessment Panel is the relevant authority as per Schedule 10(4)(1) of the *Development Regulations 2008*.

The application has been assessed against the relevant provisions of the Adelaide (City) Development Plan Consolidated 20 June 2017.

8.1 Quantitative Provisions

	Development Plan Guideline	Proposed	Guideline Achieved	Comment
Site Area	No applicable Guideline in relation to Capital City Zone		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Building Height	Maximum 43 metres	59 metres (to top of lift overrun) 55 metres (to rooftop level)	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> PARTIAL <input type="checkbox"/>	Eligible for additional height in accordance with Capital City Zone – see section 8.3.1.
Land Use	Envisaged forms of development within the Capital City Zone include Student Accommodation and Shop.	Student Accommodation and Shop	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Car Parking	No requirement for provision of car parking within the Capital City Zone.	None	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Bicycle Parking	No specific ratio applied for student accommodation	104 spaces	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	Refer to section 8.5 for further discussion
Front Setback	Built to street frontage with above-podium setback of 3-6 metres		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Rear Setback	None applicable		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Side Setback	None applicable		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input type="checkbox"/>	
Private Open Space	Studio – no minimum requirement. 1 bedroom – 8m ²	No private open space; communal courtyard and roof garden	YES <input type="checkbox"/> NO <input type="checkbox"/> PARTIAL <input checked="" type="checkbox"/>	

8.2 Land Use and Character

The proposed development contributes to the Desired Character of the Capital City Zone by introducing envisaged forms of development, which will contribute to an increased population with a resulting increase in the vibrancy and level of activity in **this part of Adelaide's CBD. While the height of the building will create a tall street wall and sense of enclosure to Gray Street, the provision of active building entrances and shop frontages will contribute to an active, comfortable, human-scaled pedestrian environment along the building's Gray Street frontage.**

It is noted that the proposed development contributes to objectives in relation to housing choice, including through the provision of one DDA-compliant room on each floor.

While the planning report and application material does not specifically address the requirements of the affordable housing overlay, it is noted that the proposed apartments in varying configurations of shared and private facilities will contribute to the supply of student accommodation in a range of price brackets.

8.3 Built Form and Townscape

8.3.1 Height

Within the Capital City Zone, PDC 21 provides that development should not exceed the maximum building height shown in the relevant Concept Plan. Concept Plan Figure CC/1 shows a maximum building height of 43 metres applying to the subject site. The plans accompanying the Application show a maximum building height above street level of 55 metres to roof level, and 59 metres to the top of the lift overrun.

PDC 21 provides that development may exceed the specified maximum building height if:

- it is demonstrated that the development reinforces the anticipated city form in Concept Plan Figures CC/1 and 2; and
- at least two features from a list of 8 specified in paragraph (b) are provided; and
- all of the following sustainable design measures are provided:
 - a rooftop garden with ongoing maintenance;
 - a greenroof or greenwalls/façades with ongoing maintenance;
 - innovative external shading devices on all of the western side of a street-facing façade; and
 - higher amenity through the provision of private open space in excess of minimum requirements, access to natural light, and ventilation to all habitable spaces and common circulation areas.

In addition, PDC 16 provides that development that exceeds the applicable maximum building height, 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 desired future character, and responds to the conditions and special qualities of a locality including pedestrian and cyclist amenity, activation, sustainability and public realm and streetscape contribution.

Using the PDC 21 criteria, there is justification for the proposed development to exceed the 43 metre maximum height specified for the subject site because:

- The proposed development will reinforce the anticipated city form in Concept Plan Figure CC/1. In this regard, it is noted that all parts of the subject site are within 100 metres of those parts of the western CBD for which a maximum building height of 53 metres is specified under Concept Plan Figure CC/1. The proximity of the subject site to this boundary means that the proposed development can assist in establishing the built form transition from taller structures to the south and east.
- At least two of the features specified in paragraph (b) of PDC 21 are provided, namely an orderly transition to a prescribed maximum

building height in an adjacent area; no provision of off-street parking; and actively-occupied uses located on all of the street-facing side of the building.

- A rooftop garden is provided covering the central part of the building, with other rooftop areas occupied by solar hot water, mechanical plant and other infrastructure, and green walls are provided to the central part of the eastern and western building façades. Details have been provided as to the establishment and ongoing maintenance of these features, although further detail should be provided via condition of approval.
- Sunshades to each of the windows on the western façade of the building (other than those behind the green wall).
- While private open space is not provided to any of the apartments within the proposed development, the substantial fenced outdoor courtyard of approximately 400m², opening onto the games area, kitchen and dining area, will provide substantial indoor/outdoor recreation and gathering spaces for occupants of the building. The planning report accompanying the application indicates that every student accommodation room will have access to natural daylight and natural ventilation.

It is considered that based on changes and additions to the proposed development shown in the substituted plan set provided on 25 October 2017 the PDC 16 requirement for a design which demonstrates a sufficiently high standard of design outcome in relation to the relevant qualitative policy provisions is achieved by the proposed development.

In this instance, and given that the required PDC 21 criteria have been satisfied, the proposed height of the building at 59 metres (exceeding the 43 metres prescribed for the site in the Development Plan) is appropriate, subject to compliance with conditions in relation to Adelaide Airport operations (see section 5.3, above).

8.3.2 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.

While representing a significant increase in the scale of development in its immediate environs, the proposed development is consistent with the desired character for the Capital City Zone. The visual bulk of the proposed development has been reduced by dividing the eastern (Gray Street) frontage of the building into 3 distinct vertical elements, the central one featuring a green wall. The western frontage is similarly articulated through the use of a central green wall and varying massing of vertical elements of the building. In addition, the building has been set back behind a podium at ground level which assist in providing a sense of human scale, notwithstanding the desire within the zone to create high scale, enclosed intimate spaces for streets such as Gray Street and Albert Street. This is further assisted in the different colour treatment to the two accommodation level of the tower structure.

8.3.3 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 realms, whilst contributing to the interest, vitality and security of the pedestrian environment (Built Form and Townscape, PDC 179). However 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).

It is considered that the proposed development provides an appropriate interface with its primary (Gray Street) frontage by providing mostly minimal ground-floor setbacks to allow for an activated and well-defined pedestrian pathway along this important laneway link. This is further reinforced through the angled façade and creation of small courtyard space, providing space for bicycle racks and gathering adjacent to the entry in what is otherwise a narrow footpath along Gray Street. The setback at Level 1 and higher floors will define the street edge and provide definition and enclosure envisaged by the desired character of the zone. The Associate Government **Architect's** comments are noted, however the setbacks provided for the development are within the range of setbacks sought within PDC 12 of the zone.

No minimum side or rear boundary setbacks are applicable to the site, although the building has been set back from both the northern and western boundaries, providing some relief and transition to neighbouring developments.

8.3.4 Articulation and Modelling

PDC 182 (Built Form and Townscape) requires that building façades fronting streets or other 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.

Suggested design solutions include a design which defines a base, middle and top, related to the overall proportion of the building; using façade elements such as sun shading to reflect the orientation of the site; and using a variation of contrasting surface finishes, textures, colours or patterns.

In response to concerns raised by the Associate Government Architect about pre-lodgement plans for the proposed development, and the original application plan set, the substituted plan set provided on 25 October 2017 demonstrates considerable design changes directed towards more strongly articulating and differentiating distinct elements of the building. Specifically, green walls to the central part of the long (eastern and western) façades of the building will reduce the visual mass of the built form and divide it into distinct sections; and external shading hoods to west-facing windows will provide variation to that façade that creates some shadow and interest.

The vertical division of the building between podium level, upper floors and rooftop garden will further contribute to visual articulation.

8.3.5 Materials, colours and finishes

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 proposed within the development are considered to be appropriate for this location.

The applicant will provide a materials board in advance of the SCAP meeting that considers the proposed development. A proposed Condition will require approval by SCAP of the final detailed materials schedule in consultation with the Associate Government Architect.

8.3.6 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 proposed development, depicted on the Landscape Concept accompanying the application and including the ground-floor courtyard, the Gray Street building frontage including the main entrance, and the proposed roof garden and green walls. These elements will contribute to the amenity of the proposed development for residents and its interface with adjoining public realm areas.

8.4 Internal 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 apartments will have an external outlook with natural light and ventilation. The floor plans accompanying the application show how each of the 6-bedroom cluster 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 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 each of the room types proposed. The applicant has also provided a comparison of the proposed room sizes with that of the Urbanest development on North Terrace, demonstrating consistency and slightly larger sizes for the proposed development.

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, I am satisfied that the size and shape of the rooms can adequately achieve the design intent of PDC 13.

The application 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 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 letter from **GTA Consultants to the applicant's planning consultant dated 29 September 2017** accompanies the Application. It reviews access for waste vehicles and the adequacy of bicycle parking for the proposed development. It finds that:

- Access to the proposed waste collection sorting room and bin storage area located at the northern end of the building, by way of a 4.5-metre wide laneway to the northern end of the subject site, will be sufficient to allow a waste collection vehicle (up to Medium Rigid Vehicle, 8.8 metres) to reverse from Gray Street into the lane and manoeuvre to collect the bins.
- The anticipated frequency of waste collection (2 movements per day on average) will not generally impact on the relatively low level of traffic which uses Gray Street.
- 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 Urbanest student accommodation developments in Australia, the average bicycle parking demand is 1 space per 38.6 beds. With 792 beds in the proposed development, the provision of 35 bicycle parking spaces represents a rate of 1 space per 23 beds, exceeding the average rate determined for Australia. The close proximity of likely destinations and 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 35 bicycles is seen as appropriate for the nature and location of the proposed development and its likely demand.

It is noted that the letter from GTA Consultants **pre-dates the applicant's** provision of substituted plans on 25 October 2017. The substituted plans do not introduce the provision of any on-site vehicle parking, nor make any material change in respect of access to the waste storage and collection areas. However the substituted plans materially increase the provision of on-site bicycle facilities by providing 104 resident bicycle spaces in a bike room, and an additional 6 visitor bicycle spaces near the main building entry.

This higher level of provision of bicycle parking will therefore significantly exceed the level seen as appropriate for the proposed development by GTA Consultants. The proposal now provides one bicycle park for every 7.5 students (or 1 for every 7 rooms).

With the absence of specific bicycle parking ratios within Table Adel/6, I consider the ratios identified by GTA for other similar facilities to be an appropriate measure. I have also had regard 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 Currie 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 (Environmental – Crime Prevention Through Urban Design, PDCs 82 to 84).

The Planning Report submitted in support of the application notes that the proposed development has frontage (including common space frontage) to Gray Street, with a high proportion of glazing to allow surveillance to Gray Street and Albert Street. The main building entrance and lift foyer will be visible to the street. Ground floor spaces will be illuminated including movement-activated lighting to the side service lane. Additional opportunities for casual surveillance are provided from rooms facing onto Gray Street and Albert Street.

The proposed courtyard will be fenced for safety and security purposes. Street frontages have been designed to avoid the creation of hiding spots.

It is also noted that the introduction of over 700 new residents into the area, and the provision of retail tenancies with street frontage, will increase the volume of daytime and night-time activities in Gray Street.

8.6.2 Noise Emissions

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 Environmental Noise Assessment by Sonus Pty Ltd, dated July 2017, accompanies the Application. The Assessment considered plans and elevations of the proposed development dated 21 June 2017 (predating the revised plans and elevations provided on 25 October 2017).

The following noise sources with potential impact on the proposed development are identified:

- patrons and music at the adjacent Edinburgh Castle Hotel
- the adjacent Rowell and Searle mechanical workshop
- traffic and street activity
- mechanical plant and equipment at the proposed development.

The Assessment identifies the impact of the Edinburgh Castle Hotel as the key environmental noise issue and recommends specific and detailed façade acoustic treatment to address this impact. Road traffic, and noise from the Rowell and Searle workshop, are also identified as having potential impacts, with acoustic treatments recommended as follows:

- to all glazing, an airtight seal on all sides of the windows when closed;
- to bedrooms within units identified as 10 to 16, 23 to 25 and 27 to 37, minimum 10.38mm laminated glass and/or double glazed construction, depending on floor level and position of window on eastern or northern façade;
- to other bedrooms, minimum 6.38mm laminated glass;

- to all other spaces, standard construction.

The Assessment also 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.

By letter of 3 October 2017, Sonus Pty Ltd responded to questions raised by the City of Adelaide in relation to its initial report. Sonus provided further detail on the nature of its investigations of the subject site and its assumptions, and stated that the requirement for the Edinburgh Castle Hotel to comply with an existing condition of its liquor licence in respect of an existing noise-sensitive location (townhouses on the eastern side of Gray Street) will also protect the proposed development from the acoustic impact of events in the **hotel's outdoor area.**

The Environmental Noise Assessment, and the further response letter of 3 October 2017, both reference versions of the application plan set which predate the substitution of revised plans on 25 October 2017. However, as no change has been made to the position of the building on the site relative to the anticipated noise source (the outdoor area of the Edinburgh Castle Hotel), or the configuration of apartments within the building, the acoustic measures recommended in the Environmental Noise Assessment are considered appropriate for application to the revised design.

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 dated 8 September 2017 expressed concern about some aspects of waste management including storage space and access.

In response, the applicant provided a revised Waste Management Plan (dated 18 September 2017) in respect of the proposed development, and based on 140m² of commercial floorspace and 776 rooms (providing 792 beds) of student accommodation. In the substituted plan set provided on 25 October 2017, the amount of commercial floorspace has increased marginally (to 143m²) but the amount of student accommodation has decreased to 756 rooms (providing 772 beds).

The Waste Management Plan as amended outlines increased space for bin storage at ground floor level and a reduced frequency of waste collection to 11 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 17 bins each designated for a particular waste stream. Collection 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).

Design considerations are outlined for the development including a waste room configuration with truck access via the northern boundary lane and a potential bin wash area.

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 Environmental – Energy Efficiency PDCs 106 to 108.

A Sustainability Management Plan – Revision B, dated July 2017, 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:

- High-performance insulation materials to wall, floor and ceiling/roof.
- High-performance glazing, to maximise solar heating during winter while minimising solar heat gains during summer.
- Efficient building massing and floorplates to minimise the area of exposed floors and ceilings.
- A relatively low glazing-to-façade area ratio resulting in a high thermal mass content, helping to stabilise internal temperatures.
- Using vertical shading fins to reduce the extent of solar penetration into west-facing windows during afternoon hours. This will increase thermal comfort and reduce reliance on mechanical air conditioning. It is noted that the substituted plan set of 25 October 2017 shows sun shading canopies or a green wall to western façades of the building in lieu of the vertical fins.
- Use of low-flow fixtures and fittings, including taps with a WELS rating of not less than 5 stars; shower heads with a rating of not less than 3 stars; and water closes with a rating of not less than 4 stars. This is expected to result in a reduction of approximately 42% in water consumption compared to average residential water consumption rates.
- Provision of a bicycle storage room for 35 bikes to encourage low-carbon forms of transportation. It is noted that the substituted plan set of 25 October 2017 provides a substantial increase in the number of secure bicycle parking spaces, to 104.

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).

A Wind Impact Statement prepared by Vipac Engineers and Scientists accompanies the Application. Vipac reviewed May 2017 drawings of the proposed development, as well as updated drawings received in June 2017.

After consideration of the form and exposure of the proposed development (but without utilising any experimental data), Vipac predicts that the proposed design will present some changes to existing wind conditions in adjacent ground level areas, but does not predict any exceedance of the various recommended comfort criteria. No recommended alterations to the design of the proposed development, as reviewed, are proposed.

The Wind Analysis was not updated to refer to the substituted plan set lodged with the Panel on 25 October 2017. It is expected that as the substituted plan set does not increase the overall building envelope, and includes additional

articulation to the main building frontages, the new design will not have any unacceptable micro-climactic impacts.

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.

An Environmental Site History, Soil and Groundwater Assessment prepared by A.M. Environmental Consulting Pty Ltd accompanies the Application. The report identifies a number of potential contaminating past land uses and has undertaken a targeted soil assessment based on the historic uses and known locations of potential contamination (such as existing underground storage tank).

The assessment determines that there is not gross or widespread soil contamination on the land that would represent an actual or potential risk to human health or the environment once the site is developed and that the site can be made suitable for its intended student accommodation use.

Minor individual concentrations of TRH and PAH and heavy metals were located and can be readily managed and removed during and as part of the demolition works (which are now underway).

The assessment also recommends:

- that the completion of the site demolition work, the final site surfaces be validated, including within the underground storage tank excavations to confirm the results of the soil assessment
- that a Construction Environment Management Plan be prepared and be included as a condition of approval to present final condition of the site surface once demolition is complete.

8.7 Signage

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, including by not contributing to confusion and visual clutter, and not to create a hazard. PDCs 211 to 217 set out design and location standards for advertising signage.

While the substituted plan set and the planning report in relation to the proposed development refer to corporate identification signs at upper level and ground level, and directional signage for the service driveway, the detail required to assess the proposed signage against the principles set out in PDCs 211 to 217 has not been provided as part of the present application.

Signage should therefore be the subject of a separate application for Development Plan Consent.

9. CONCLUSION

The proposed development raises the following key planning issues:

- The height of the building, at 59 metres (to the top of the lift overrun), exceeds the maximum height of 43 metres for the site prescribed in the Capital City Zone. While the Capital City Policy Review (Design Quality) Ministerial Amendment to the Development Plan, introduced in May 2017, introduces discretion for the approval of development which exceeds a prescribed mandatory height limit in specific circumstances, it is conditional on a development reinforcing the

anticipated city form and incorporating specified design and sustainability measures.

- Building massing and articulation and the visual impact of the building, particularly the relatively long eastern elevation of the building rising above Gray Street, as well as substantial areas of glazing in the western elevation exposed to thermal impacts of summertime afternoon sun.
- 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.
- Provision of bicycle parking spaces is substantially lower than the rate prescribed in the Development Plan, of at least one for every dwelling/apartment. Even with a 104-space bicycle storage room as provided in the substituted plan set of 25 October 2017, a shortfall of some 600 bicycle parking spaces exists.
- The identification of previous potentially contaminating land uses on the site, giving rise to a requirement, prior to development of the site, to demonstrate either that contamination is not present or, if present, can be readily managed in a manner which does not present a risk to future land users.

In other respects, including land use, setbacks from site boundaries, micro-climactic (wind) impacts, the incorporation of sustainable design features, waste management access, bicycle parking and site contamination the proposed development complies with all applicable policies.

While the height of the building gives rise to a referral requirement in respect of Adelaide Airport operations, the Commonwealth Secretary for the Department of Transport and Regional Services has indicated that the proposed development is acceptable as long as certain conditions are satisfied. Those conditions are included in the Planning Conditions recommended as part of this report.

On balance, the proposed development will make a significant 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 Gray Street frontage with the main building entry, with shop frontages and with windows onto study rooms, lounges and other common areas for use by residents of the building. These activities will provide significant opportunities for active and passive surveillance of the public realm during day and night-time hours and will substantially enhance public safety.

The design of the building has been the subject of a design review and detailed comment by the Associate Government Architect, as well as by the City of Adelaide and DPTI. As a result of this comment, the applicant has revised the initial concept to address concerns in relation to a number of matters:

- Additional measures including an accessible rooftop garden, green walls to the eastern and western elevations of the building and sun shading to exposed western windows have been taken to ensure compliance with the design measures required to justify a development which exceeds the prescribed maximum building height within this part of the Capital City Zone.
- The building has been redesigned to provide for three distinct visual elements, significantly reducing the perception of visual bulk and mass from western and eastern vantage points. In addition, the proposed green walls and sun shade canopies contribute to articulation of the eastern and western building façades.
- A substantial increase in the number of secure bicycle parking spaces (to 104 for residents), plus provision for 6 visitor bicycle parking spaces near the main (Gray Street) building entrance, has been provided.

While concern has been expressed about the size of some of the student apartments in the proposed development, particularly the 6-cluster apartments, it is noted that each bedroom and each living/dining room in these clusters (as well as each studio and twin-share 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 (as identified in PDC 13), and that the applicant has demonstrated in the substituted application plan set 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 Edinburgh Castle Hotel, and will incorporate sustainability measures to reduce the consumption of energy and other resources. These reports have been updated or supplemented to address concerns raised by the City of Adelaide and DPTI. Where necessary the recommendations of these reports are reflected in the proposed Planning Conditions.

It is concluded that the proposed development should be approved in the form shown in the substituted plan set submitted on 25 October 2017 and 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 20 June 2017.
- 3) RESOLVE to grant Development Plan Consent to the proposal by Trust Company (Australia) Limited as trustee for WH Gray Street Trust for the staged construction of a student accommodation building of ground and 16 upper floors with 2 shops and ancillary facilities at 101-109 Gray Street, Adelaide, subject to the following conditions of consent.

PLANNING CONDITIONS

1. That except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in strict accordance with the details and following plans submitted in Development Application No 020/A053/17.

Architectural Plans by Brown Falconer:

Drawing Title	Drawing No.	Revision	Date
Cover Sheet	3123 DA00	D	October 2017
Context Plan	3123 DA01	C	October 2017
Context Perspectives	3123 DA01B	C	October 2017
Locality Plan	3123 DA02	C	October 2017
Gray Street – Site Elevations	3123 DA03	D	October 2017
Site Plan	3123 DA04	C	October 2017
Ground Floor Plan	3123 DA05	C	October 2017
Gray Street – Floor Plans	3123 DA06	D	October 2017
Gray Street – Floor Plans	3123 DA07	D	October 2017

Drawing Title	Drawing No.	Revision	Date
Gray Street – Floor Plans	3123 DA08	D	October 2017
Gray Street – Floor Plans	3123 DA09	D	October 2017
Roof Plan and Plant Configuration	3123 DA10	D	October 2017
Gray Street – Typical Rooms	3123 DA11	C	September 2017
Gray Street – Typical Rooms	3123 DA11B	D	October 2017
Gray Street – Elevations	3123 DA12	D	October 2017
Gray Street Podium Elevation	3123 DA13	D	October 2017
Gray Street – Sections and Yield Information	3132 DA14	D	October 2017
3D Perspectives	3123 DA15- DA23	D	October 2017
3D Perspectives	3123 DA24- DA25	B	October 2017

Reports and correspondence

- Environmental Noise Assessment – Sonus – July 2017 plus letter, Response to Peer Review, dated 3 October 2017
- Waste Management Plan (Version 3) – Rawtec – September 2017
- Sustainability Management Plan (Revision C) – Lucid Consulting - November 2017
- Environmental Site History, Soil and Groundwater Assessment – AM Environmental Consulting – 17 August 2017
- Waste Collection and Bicycle Parking Review Letters (2) – GTA Consultants – 20 September 2017 and 29 September 2017
- Wind Impact Statement – Vipac Engineers and Scientists – 7 July 2017
- Airspace Assessment – Thompson GCS – 15 May 2017
- Landscape Plan – Hemisphere Design – June 2017

External Materials

2. Prior to Development Approval being issued for superstructure works, a final detailed schedule of materials shall be submitted in consultation with the Associate Government Architect to the satisfaction of the State Commission Assessment Panel.

Driveway and parking areas

3. All vehicle driveways and vehicle entry and manoeuvring areas shall be designed and constructed in accordance with Australian Standards (AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009) and be constructed, drained and paved with bitumen, concrete or paving bricks in accordance with sound engineering practice and appropriately line marked to the reasonable satisfaction of the State Commission Assessment Panel prior to the occupation or use of the development.
4. All bicycle parking spaces shall be designed and constructed in accordance with Australian Standard 2890.3-2015.

Structure

5. 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.
6. All windows to student apartments and break-out areas on Levels 1 to 16 inclusive are to be openable to provide for natural ventilation.

Acoustics

7. Air conditioning or air extraction plant or ducting shall be screened such that no unreasonable nuisance or loss of amenity is caused to residents and users of properties in the locality to the reasonable satisfaction of the State Commission Assessment Panel.
8. The acoustic attenuation measures recommended in the Environmental Noise Assessment dated July 2017 by Sonus, and any additional measures in the letter from Sonus Response to Peer Review dated 3 October 2017, 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

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

Signage

10. No signage forms 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.

Infrastructure

11. 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

12. A detailed landscaping plan for the courtyard, rooftop terraces, green walls and Gray Street frontage shall be submitted to the reasonable satisfaction of the State Commission Assessment Panel prior to Building Rules Consent being granted for superstructure works. This shall identify planting medium depths, irrigation methods, maintenance schedules and methods and other features of the landscaping scheme to demonstrate viability of all plantings and lawn. The updated detailed landscaping plan shall be reflected, as necessary, in all other relevant plans and drawings (including, for example, sectional drawings).
13. Landscaping shown on the approved plans (including without limitation the green walls and the rooftop garden) 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.
14. 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

15. A final detailed Stormwater Management Plan shall be submitted, in consultation with the City of Adelaide and to the satisfaction of the State Commission Assessment Panel. 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.

16. 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.
17. Stormwater runoff from the proposed development must be contained within property boundaries and collected and discharged to the Gray Street road reserve. Stormwater runoff shall not be discharged to Queens Court or Albert Street. Approximately equal volumes of stormwater shall be discharged from the proposed development to the northern and southern property frontages to spread runoff flow to each of the two separate Gray Street catchments.
18. Proposed building floor levels and levels of any proposed internal stormwater grated inlet pits or openings shall provide a minimum 100mm free board to 1% AEP flood levels in Gray Street, which can be assumed to be top of kerb level.
19. Any seepage water from proposed planter boxes and landscaped areas located in the courtyard adjacent to the Queens Court frontage shall be collected and discharged to the sewer. Seepage water must not be discharged to the building stormwater system.

Adelaide Airport Prescribed Height Limit

The following are mandatory conditions required by the Secretary to the Commonwealth Department of Transport and Regional Services:

20. The building must not exceed a maximum height of 101 metres AHD, inclusive of all lift over-runs, vents, chimneys, aerials, antennas, lightning rods, any rooftop garden plantings, exhaust flues etc.
21. The building must be obstacle lit by medium intensity steady red lighting during the hours of darkness at the highest point of the building. Obstacle lights are to be arranged to ensure the building can be observed in a 360 degree radius as per subsection 9.4.3 of the Manual of Standards Part 139 - Aerodromes (MOS Part 139). Characteristics for medium intensity lights are stated in subsection 9.4.7 of MOS Part 139
22. The proponent must ensure the obstacle lighting has a remote monitoring capability, or AAL is to monitor the ongoing availability of the obstacle lighting.
23. The proponent must ensure obstacle lighting are maintained in a serviceable condition and any outage immediately reported to AAL.
24. The proponent must advise Airservices Australia at least three business days prior to the controlled activity commencing by emailing <ifp@airservicesaustralia.com> and quoting AD-CA-106.
25. Separate approval must be sought under the Regulations for any construction equipment (i.e. cranes) required to construct the building. Construction cranes may be required to operate at a height significantly higher than that of the proposed controlled activity and consequently, may not be approved under the Regulations. Therefore, it is advisable that approval to operate construction equipment (i.e. cranes) be obtained prior to any commitment to construct.
26. At the completion of the construction of the building, a certified surveyor is to notify (in writing) AAL of the finished height of the building.

Construction Management

27. A Waste Management Plan that details the proposed waste minimisation and resource recovery practices during construction shall be prepared and implemented.
28. A Construction Environment Management Plan (CEMP) shall be prepared and implemented in accordance with current industry standards – including the EPA publications “Handbook for Pollution Avoidance on Commercial and Residential Building Sites – Second Edition” and, where applicable, “Environmental Management

of On-site Remediation” – to minimise environmental harm and disturbance during construction.

A copy of the CEMP shall be provided to the SCAP prior to the commencement of site works.

EPA information sheets, guidelines documents, codes of practice, technical bulletins etc. can be accessed on the following website: <http://www.epa.sa.gov.au>

Site Contamination

29. 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 Development Assessment Commission prior to any superstructure works.

ADVISORY NOTES

- a. This Development Plan Consent will expire after 12 months from the date of this Notification, unless final Development Approval from Council has been received within that period or this Consent has been extended by the State Commission Assessment Panel.
- b. The applicant is also advised that any act or work authorised or required by this Notification must be substantially commenced within 1 year of the final Development Approval issued by Council and substantially completed within 3 years of the date of final Development Approval issued by Council, unless that Development Approval is extended by the Council.
- c. The applicant has a right of appeal against the conditions which have been imposed on this Development Plan Consent. Such an appeal must be lodged at the Environment, Resources and Development Court within two months from the day of receiving this notice or such longer time as the Court may allow. The applicant is asked to contact the Court if wishing to appeal. The Court is located in the Sir Samuel Way Building, Victoria Square, Adelaide, (telephone number 8204 0289).
- d. The applicant 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**.
- e. As work is being undertaken on or near the subject land boundary, the applicant should ensure that the boundaries are clearly defined, by a Licensed Surveyor, prior to the commencement of any building work.
- f. If temporary hoarding or site works require modification of existing Council and/or SA Power Network's **public lighting (including associated infrastructure such as cabling etc.) they shall meet Councils' requirements. The works shall be carried out to meet Council's requirements** and all costs borne directly by the developer.
- g. Any proposed works within the public realm adjacent to the site, including the installation of street furniture, planting of street trees, roadway modifications or changes to temporary parking controls shall be undertaken in consultation with the City of Adelaide. Improvements to the adjacent public realm outside of the identified subject land are not part of this planning consent.
- h. **All damage to CoA's infrastructure, including damage to public lighting and underground ducting etc. caused by projects works or loading of site crane onto pathways will be repaired to meet Councils requirements and the cost of the developer.**

- i. Any disused driveway inverts resulting from the development are to be reinstated to equivalent footpath levels to ACC standards and specifications.
- j. **Any damage caused to ACC's road, footpath and kerbing infrastructure during** development will be the responsibility of the developer to rectify to a standard that equals or improves the pre-development condition.
- k. Existing crossovers and new crossovers have been highlighted under this development. All new (or alterations to existing) crossovers firstly require ACC approval outside of the DA process. These need to be to ACC standards and specifications via the City Works Guidelines.
- l. Existing boundary (back of path) levels must not be modified. Finished floor levels should be based around retaining the existing back of path levels subject to the following:
 - If the level difference between top of kerb and back of path is less than 50 mm
 - If the existing cross fall(s) exceed 4% (1:25)

If any of the above conditions exist for any footpath infrastructure that service the perimeter of the site boundary then please contact the Asset Manager for Water Infrastructure prior to setting finished floor levels.

- m. 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.



David Barone
Consultant Planner

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



LEE HUR HOLDINGS GRAY STREET STUDENT HOUSING DEVELOPMENT

89-109 GRAY STREET, ADELAIDE, SA, 5000

DA00	COVER SHEET	D	24/10/2017	DA12	GRAY STREET - ELEVATIONS	D	24/10/2017
DA01	CONTEXT PLAN	D	24/10/2017	DA13	GRAY STREET - PODIUM ELEVATION	D	24/10/2017
DA01B	CONTEXT PERSPECTIVES	C	24/10/2017	DA14	GRAY STREET - SECTIONS AND YIELD INFORMATION	D	24/10/2017
DA02	LOCALITY PLAN	D	24/10/2017	DA15	3D PERSPECTIVES	D	24/10/2017
DA03	GRAY STREET - SITE ELEVATIONS	D	24/10/2017	DA16	3D PERSPECTIVES	D	24/10/2017
DA04	SITE PLAN	D	24/10/2017	DA17	3D PERSPECTIVES	D	24/10/2017
DA05	GROUND FLOOR PLAN	D	24/10/2017	DA18	3D PERSPECTIVES	D	24/10/2017
DA06	GRAY STREET - FLOOR PLANS	D	24/10/2017	DA19	3D PERSPECTIVES	D	24/10/2017
DA07	GRAY STREET - FLOOR PLANS	D	24/10/2017	DA20	3D PERSPECTIVES	D	24/10/2017
DA08	GRAY STREET - FLOOR PLANS	D	24/10/2017	DA21	3D PERSPECTIVES	D	24/10/2017
DA09	GRAY STREET - FLOOR PLANS	D	24/10/2017	DA22	3D PERSPECTIVES	D	24/10/2017
DA10	ROOF PLAN AND PLANT CONFIGURATION	D	24/10/2017	DA23	3D PERSPECTIVES	D	24/10/2017
DA11	GRAY STREET - TYPICAL ROOMS	D	24/10/2017	DA24	3D PERSPECTIVES	B	24/10/2017
DA11B	GRAY STREET - TYPICAL ROOMS	D	24/10/2017	DA25	3D PERSPECTIVES	B	24/10/2017

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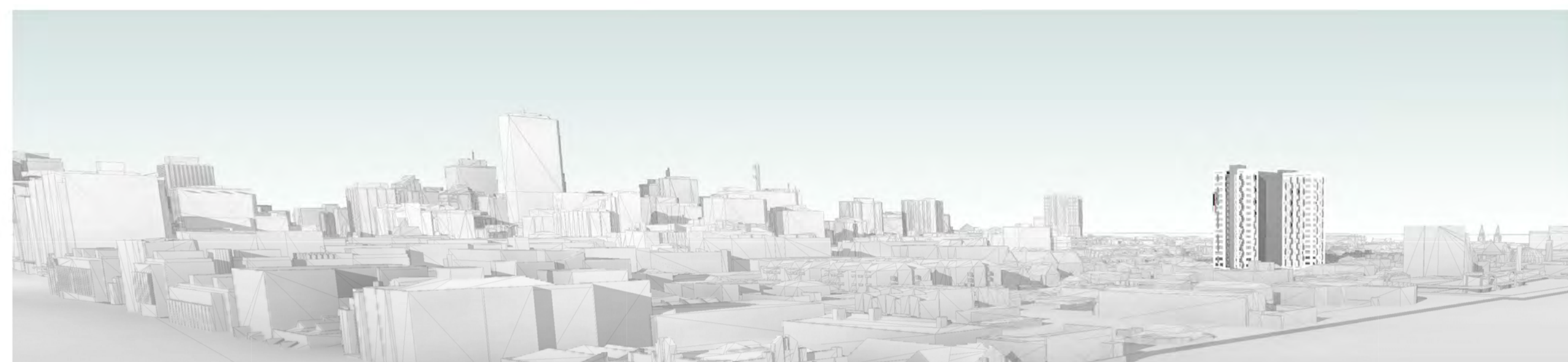
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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

COVER SHEET

Scale
Drawn DT/LP
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA00 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017



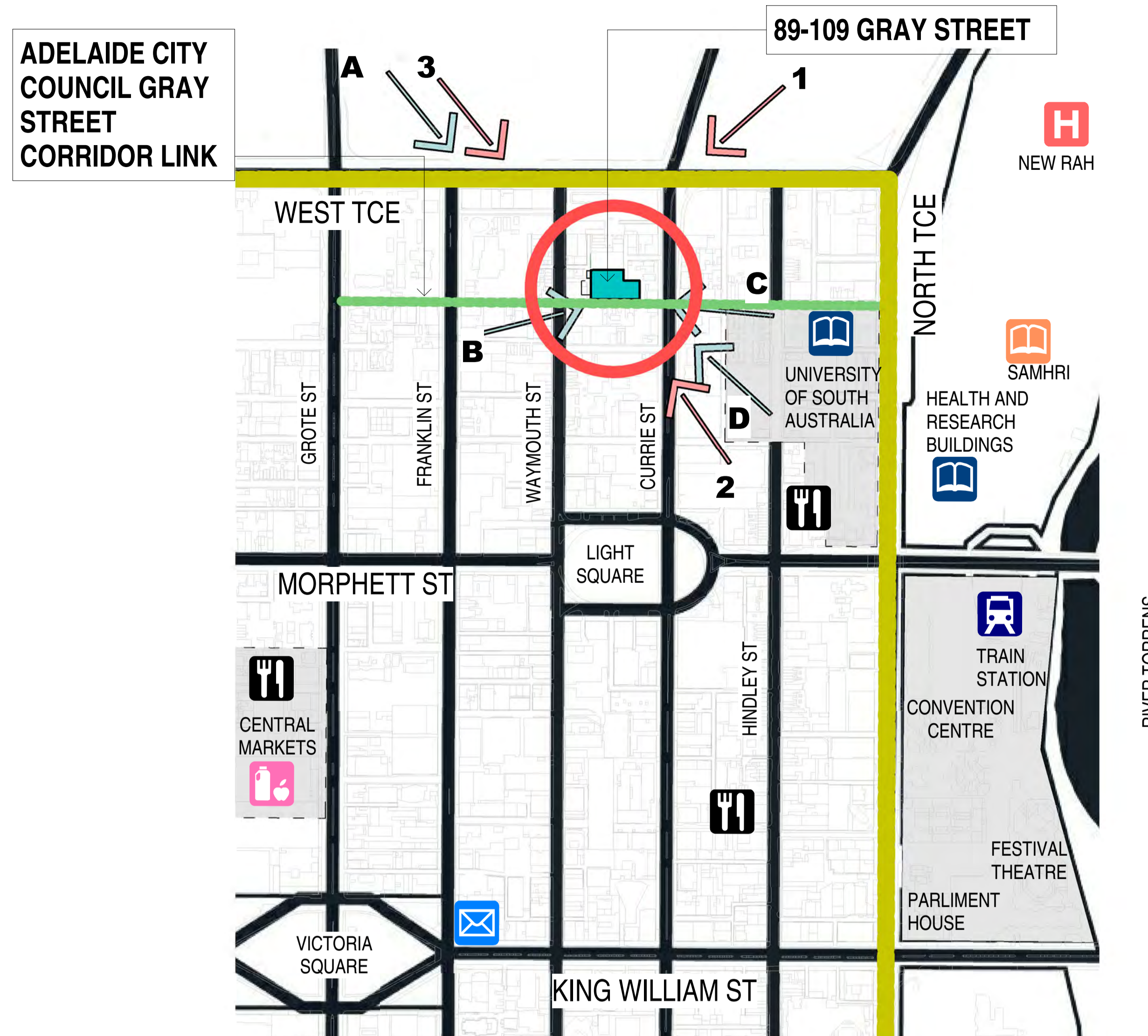
CONTEXTUAL VIEW 1 - VIEW FROM NORTH WEST



CONTEXTUAL VIEW 2 - VIEW FROM LIGHT SQUARE

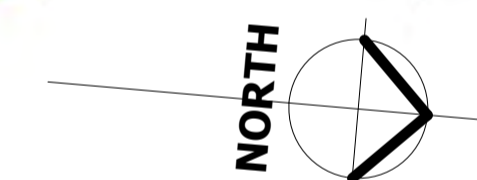
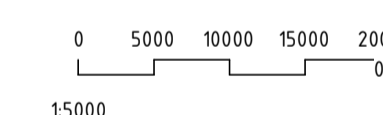


CONTEXTUAL VIEW 3 - VIEW FROM WEST TERRACE



CONTEXT PLAN

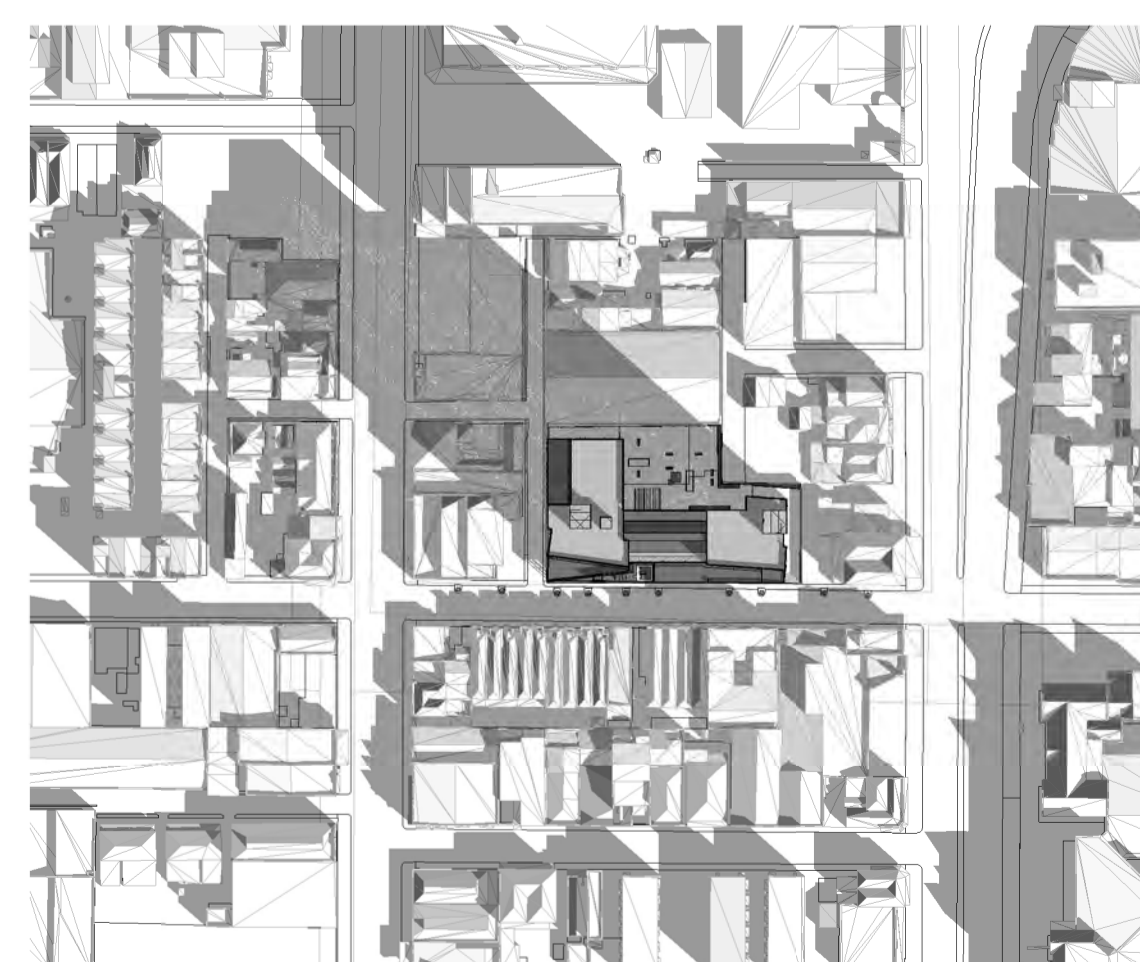
1 : 5000



SHADOW DIAGRAM SUMMER 10AM



SHADOW DIAGRAM SUMMER 3PM



SHADOW DIAGRAM WINTER 10AM



SHADOW DIAGRAM WINTER 3PM

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CONTEXT PLAN

Scale 1 : 5000

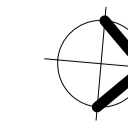
Drawn DT/LP

Date JULY 2017

Job No. 2017020

Dwg No. 3123 DA01

Rev: C A1 SHEET



Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	22/09/2017
B	ISSUED FOR APPROVAL	17/10/2017
C	ISSUED FOR APPROVAL	24/10/2017



VIEW A - FROM WEST TERRACE LOOKING EAST



VIEW B - FROM GRAY STREET - LOOKING NORTH



VIEW C - FROM GRAY STREET LOOKING SOUTH



VIEW D - FROM CURRIE STREET LOOKING SOUTH

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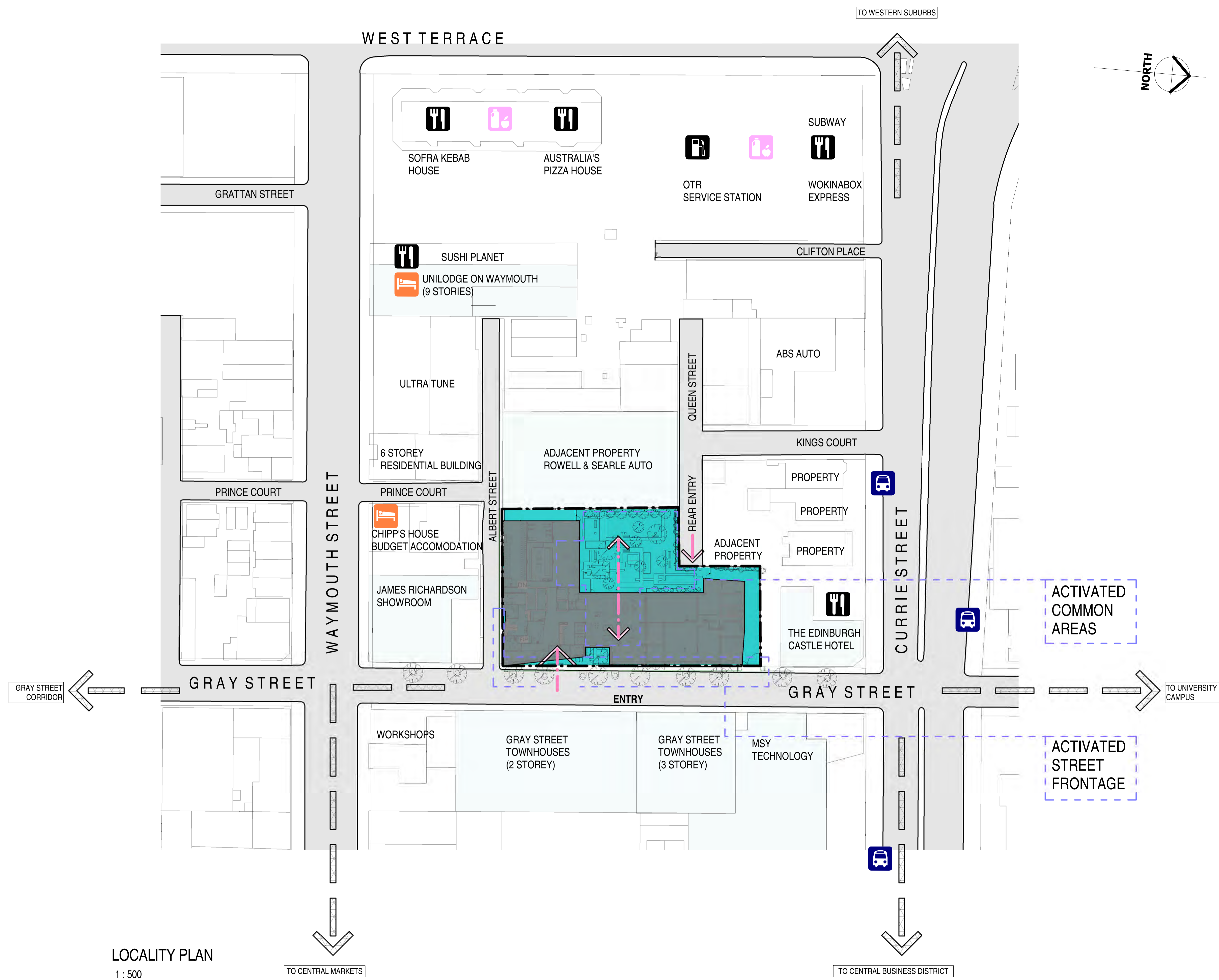
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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

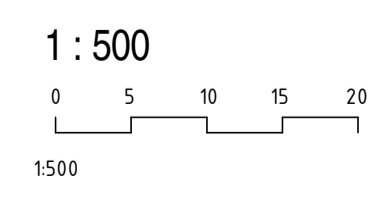
CONTEXT PERSPECTIVES

Scale
Drawn BH
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA01B Rev: C A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017



LOCALITY PLAN



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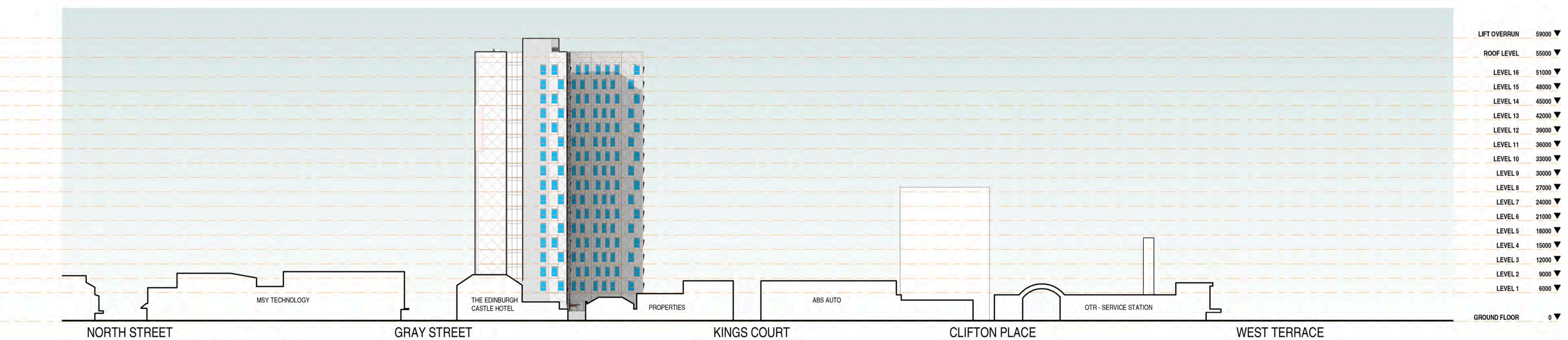
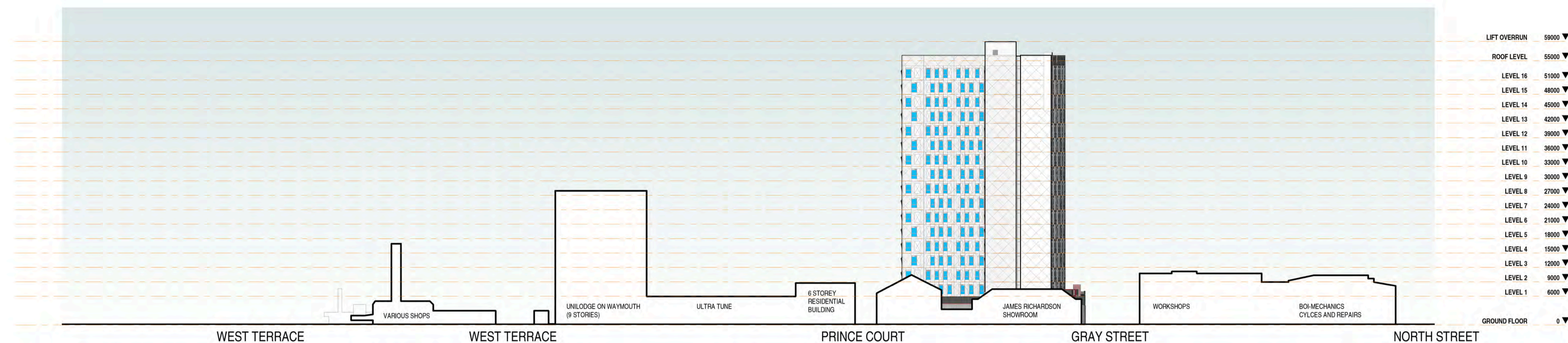
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LOCALITY PLAN

Scale 1 : 500
 Drawn DT/LP
 Date JULY 2017
 Job No. 2017020
 Dwg No. 3123 DA02 Rev: C A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



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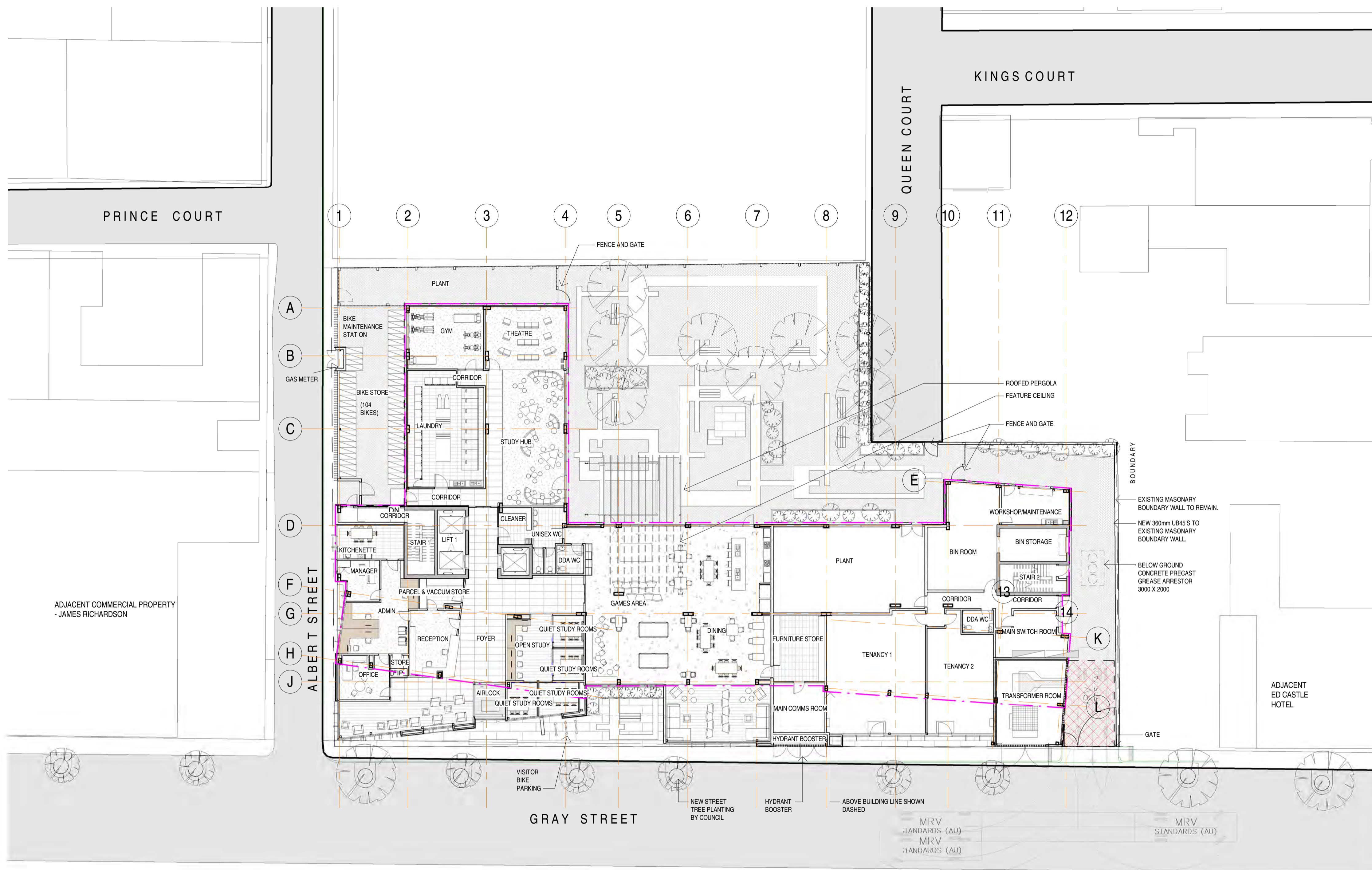
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89 - 109 GRAY STREET STUDENT HOUSING DEVELOPMENT

GRAY STREET - SITE ELEVATIONS

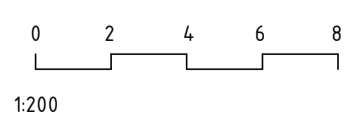
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 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020
 Dwg No. 3123 DA03 Rev. D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017



SITE/GROUND FLOOR PLAN

1 : 200



1200

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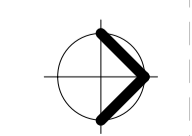
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SITE PLAN

Scale 1 : 200
 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020



Dwg No. 3123 DA04 Rev: C A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	18/10/2017



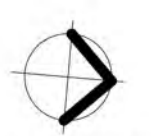
GROUND FLOOR PLAN
1 : 100

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GROUND FLOOR PLAN

Scale 1 : 100
Drawn DT/LP
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA05 Rev. C A1 SHEET

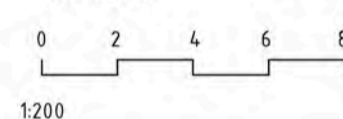


Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



LEVEL 1

1 : 200

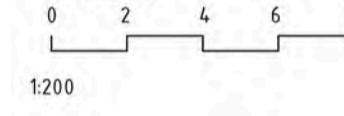


1200



LEVEL 2

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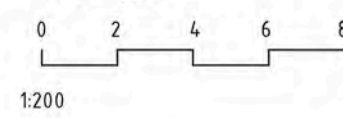


1200



LEVEL 3

1 : 200

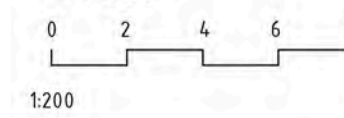


1200



LEVEL 4

1 : 200



1200

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GRAY STREET - FLOOR PLANS

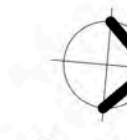
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Date OCT 2017

Job No. 2017020

Dwg No. 3123 DA06 Rev. D A1 SHEET



Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



LEVEL 5

1 : 200



LEVEL 6

1 : 200



LEVEL 7

1 : 200



LEVEL 8

1 : 200

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GRAY STREET - FLOOR PLANS

Scale 1 : 200

Drawn DT/LP

Date OCT 2017

Job No. 2017020

Dwg No. 3123 DA07

Rev: D A1 SHEET



Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



LEVEL 9

1 : 200



LEVEL 10

1 : 200



LEVEL 11

1 : 200



LEVEL 12

1 : 200

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GRAY STREET - FLOOR PLANS

Scale 1 : 200
 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020

Dwg No. 3123 DA08 Rev. D A1 SHEET



Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



LEVEL 13
1 : 200



LEVEL 14
1 : 200



LEVEL 15
1 : 200



LEVEL 16
1 : 200

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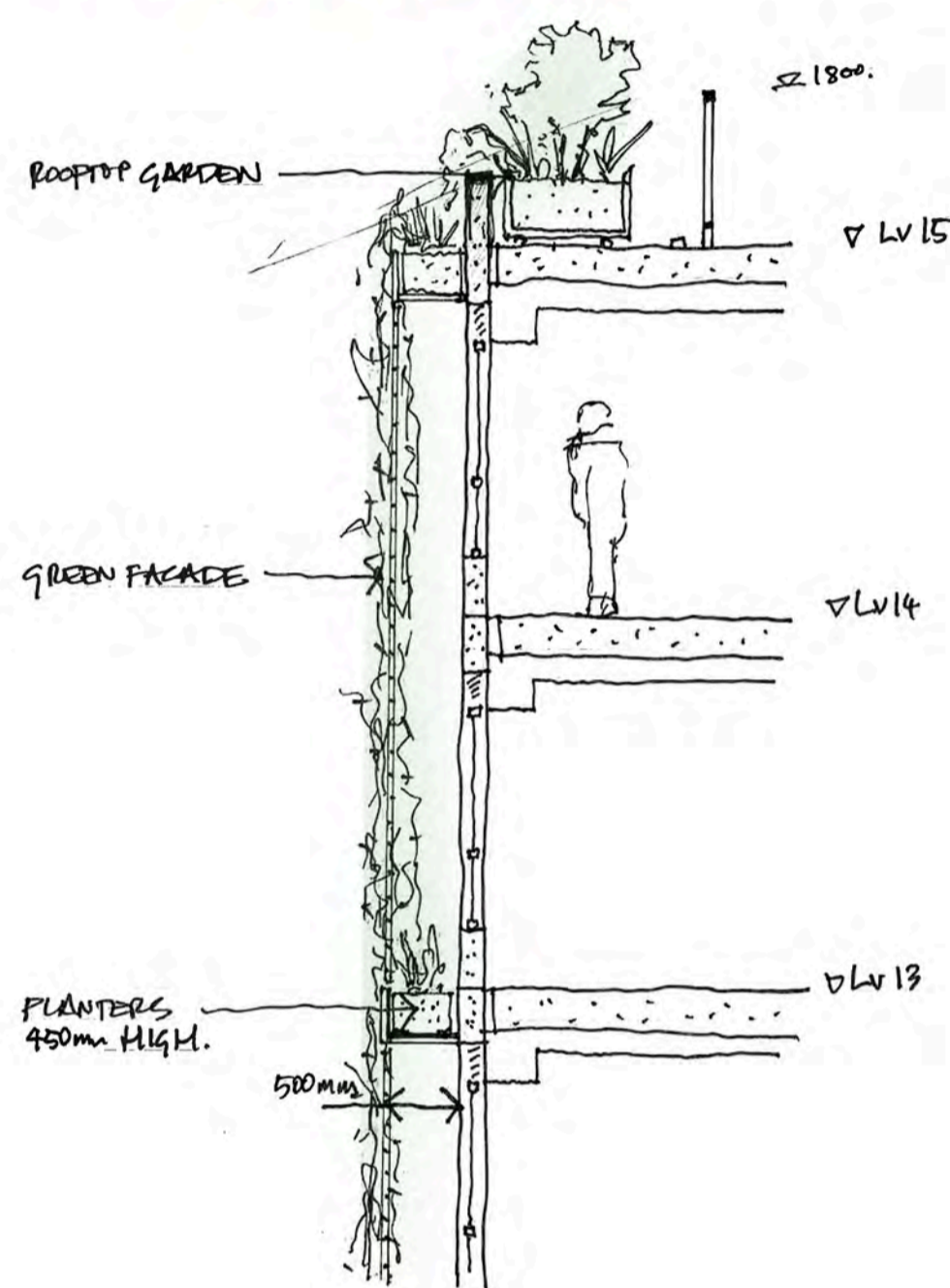
89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

GRAY STREET - FLOOR PLANS

Scale 1 : 200
Drawn DT/LP
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA09 Rev. D A1 SHEET



Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



ROOFTOP GARDEN AND GREEN FACADE SECTION DETAIL
1: 50

GREEN FACADE KEY FEATURES

PLANT SPECIES

- Plant species will be selected by botanist who specialises in green facades
- Plant species to suit the differing conditions on the east and west facades, taking into account prevailing winds and local conditions
- Example species:
 1. Trachelospermum jasminoides
 2. Pandorea jasminoides
 3. Hibbertia scandens
- Pre-growth of plants carried out on temporary trellis to ensure fast establishment

MODULES

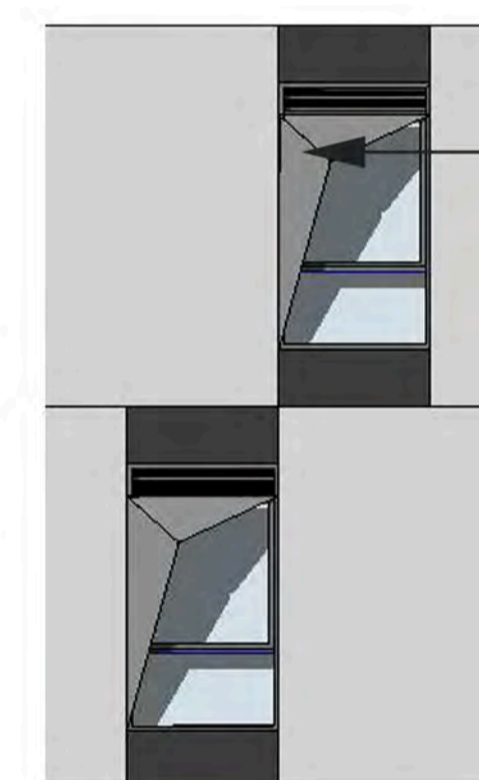
- Planter modules positioned every 2 floors
- Planter modules featuring remote controllable irrigation to allow adjustment for realtime climatic conditions
- Planter modules are plumbed and connected to centralised drainage - discharged as required by the authority
- Full height mesh positioned to outside face of planters

MAINTENANCE

- Maintenance of the green facade to be carried out via roof access from level 15 rooftop garden
- Typically requires 2-3 rope visits a year
- The mesh apertures to be 240mm in diameter to allow maintenance through the green facade

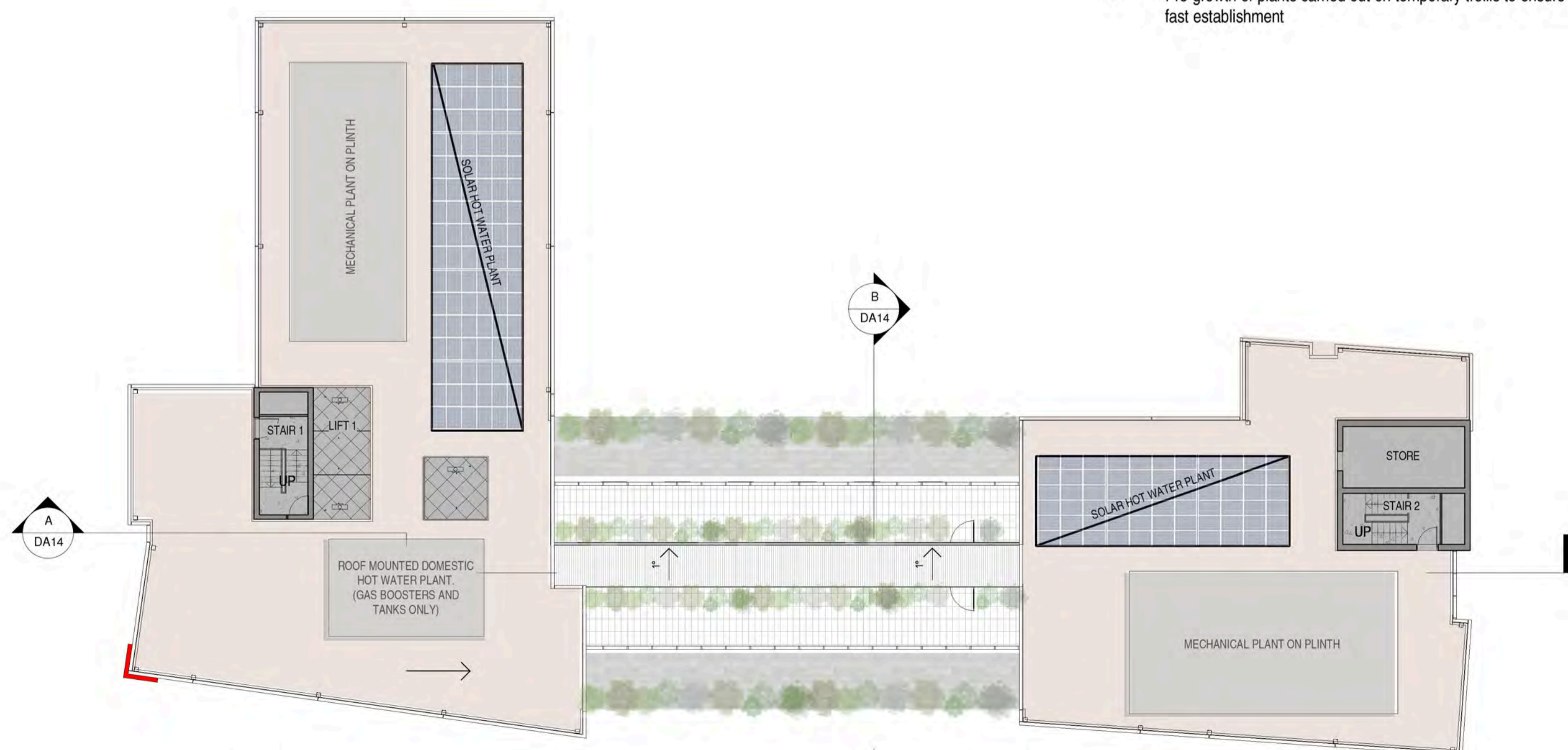
ENVIRONMENTAL/SUSTAINABILITY BENEFITS

- Provides excellent shading to east and west facing facades
- Airflow between the green facade and the external skin of the building promotes energy efficiency by natural cooling effects
- Captures rainfall and slows its entry into the stormwater system
- Attenuates noise
- Decrease carbon footprint
- Additional benefits include intercepting airborne gaseous and particulate pollutants and cities become more 'liveable' when plants are integrated successfully into the built environment.



SUN SHADE WINDOW HOOD

WESTERN WINDOW SUN SHADE DETAIL

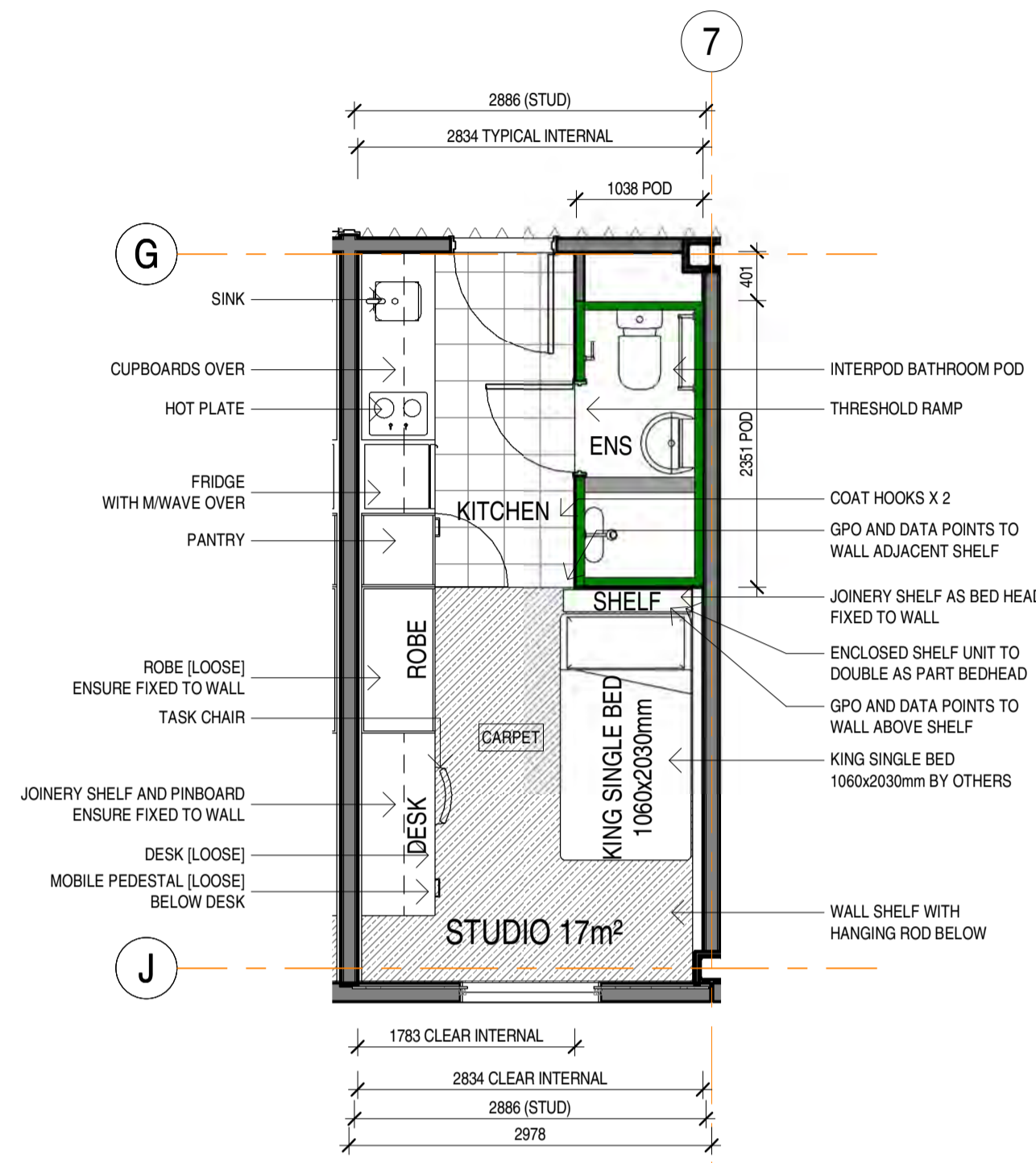


ROOF LEVEL
1: 200

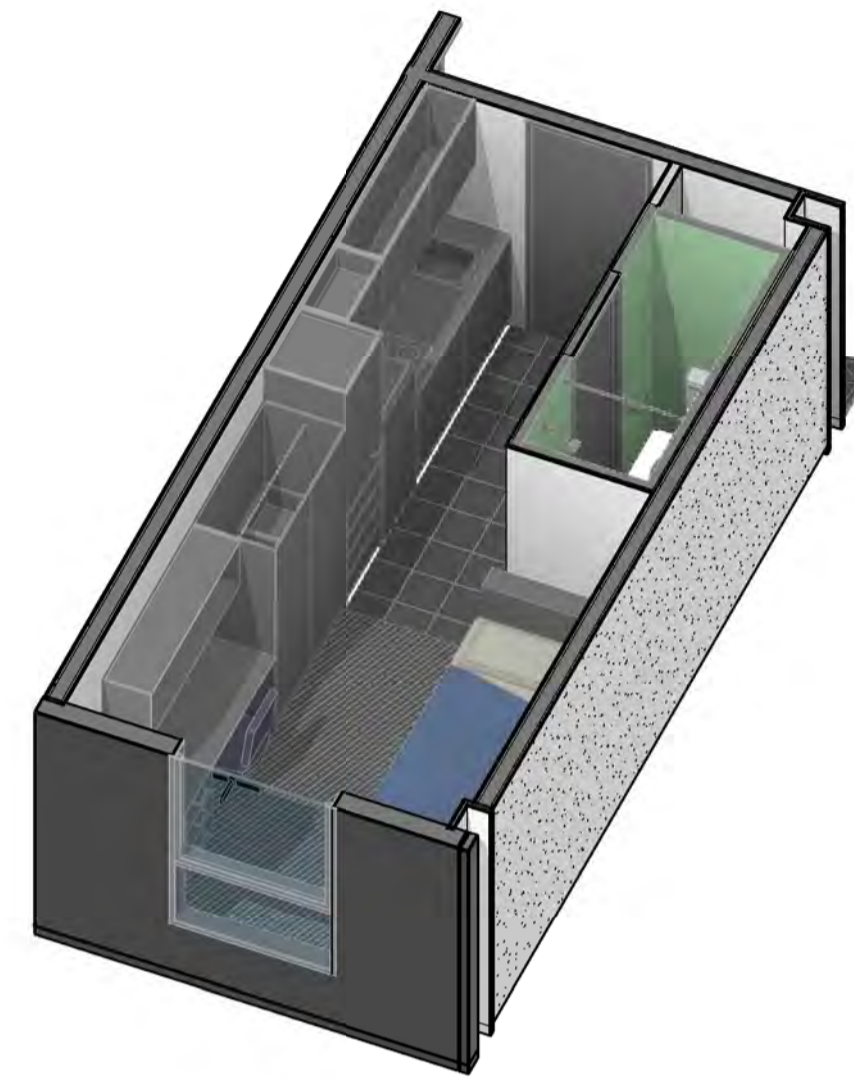


TYPICAL ADAPTED FLOOR PLAN ADAPTIVE REUSE - APARTMENT LAYOUT
1: 200

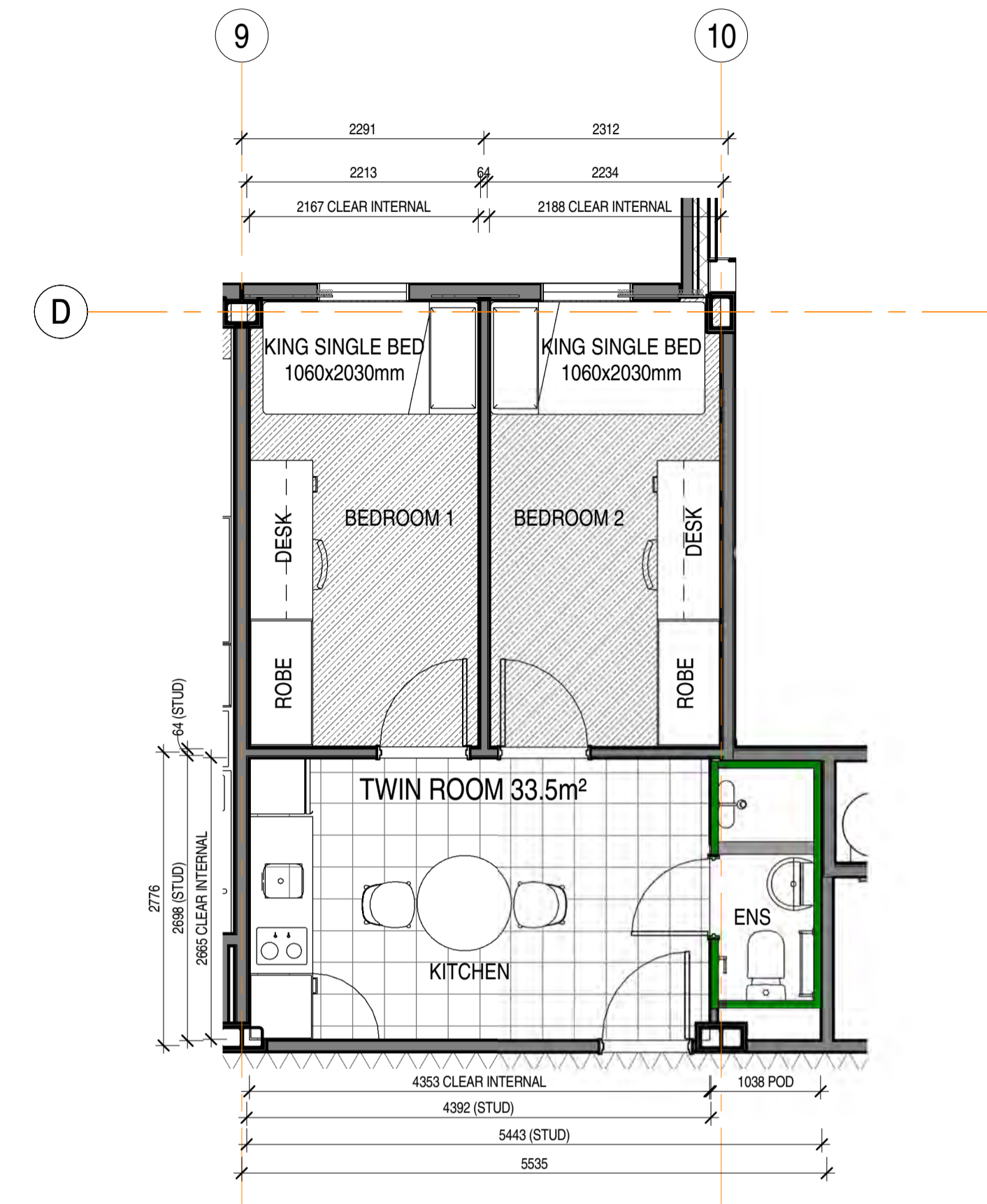
Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017



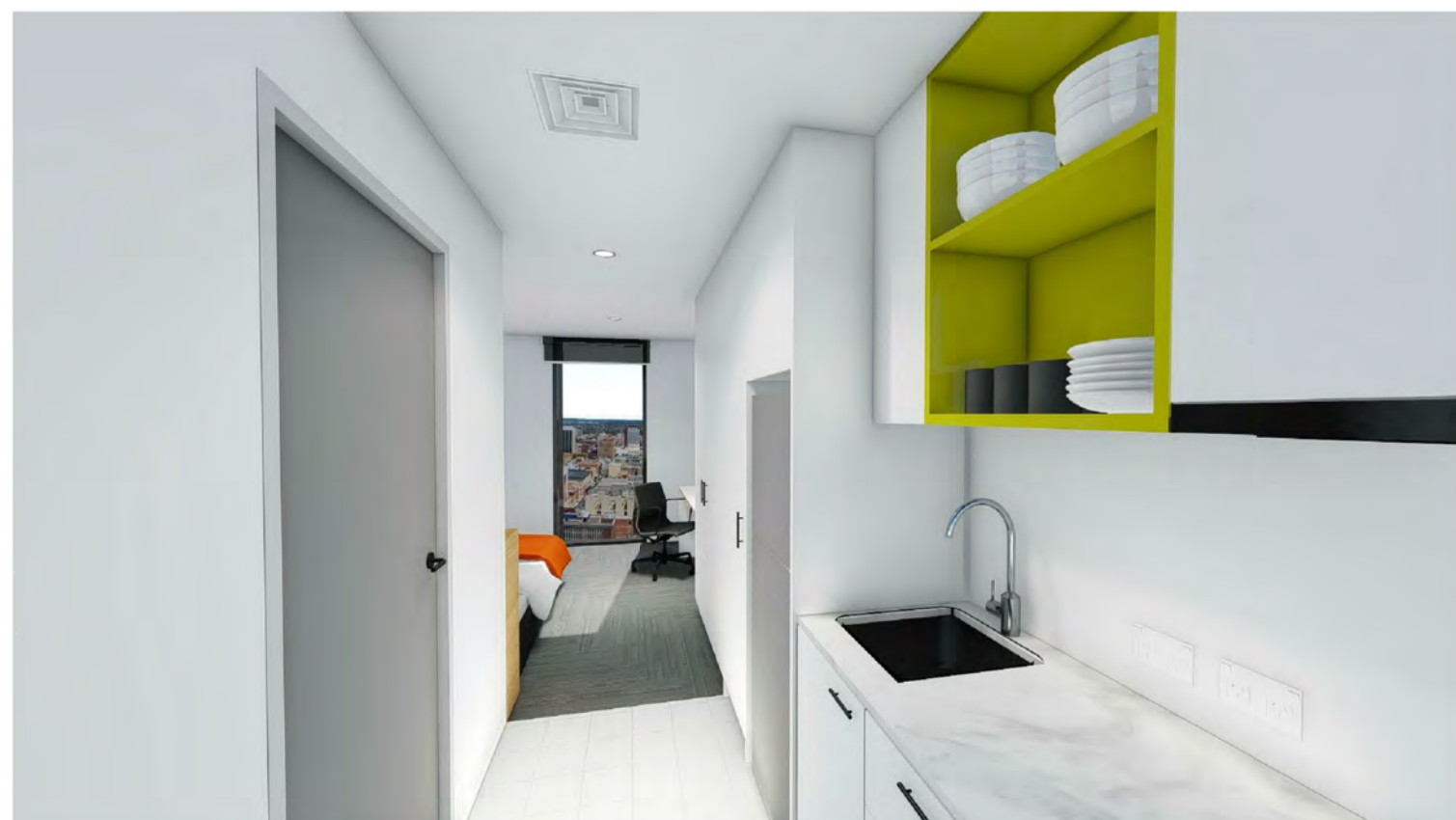
TYPICAL STUDIO PLAN
1 : 50



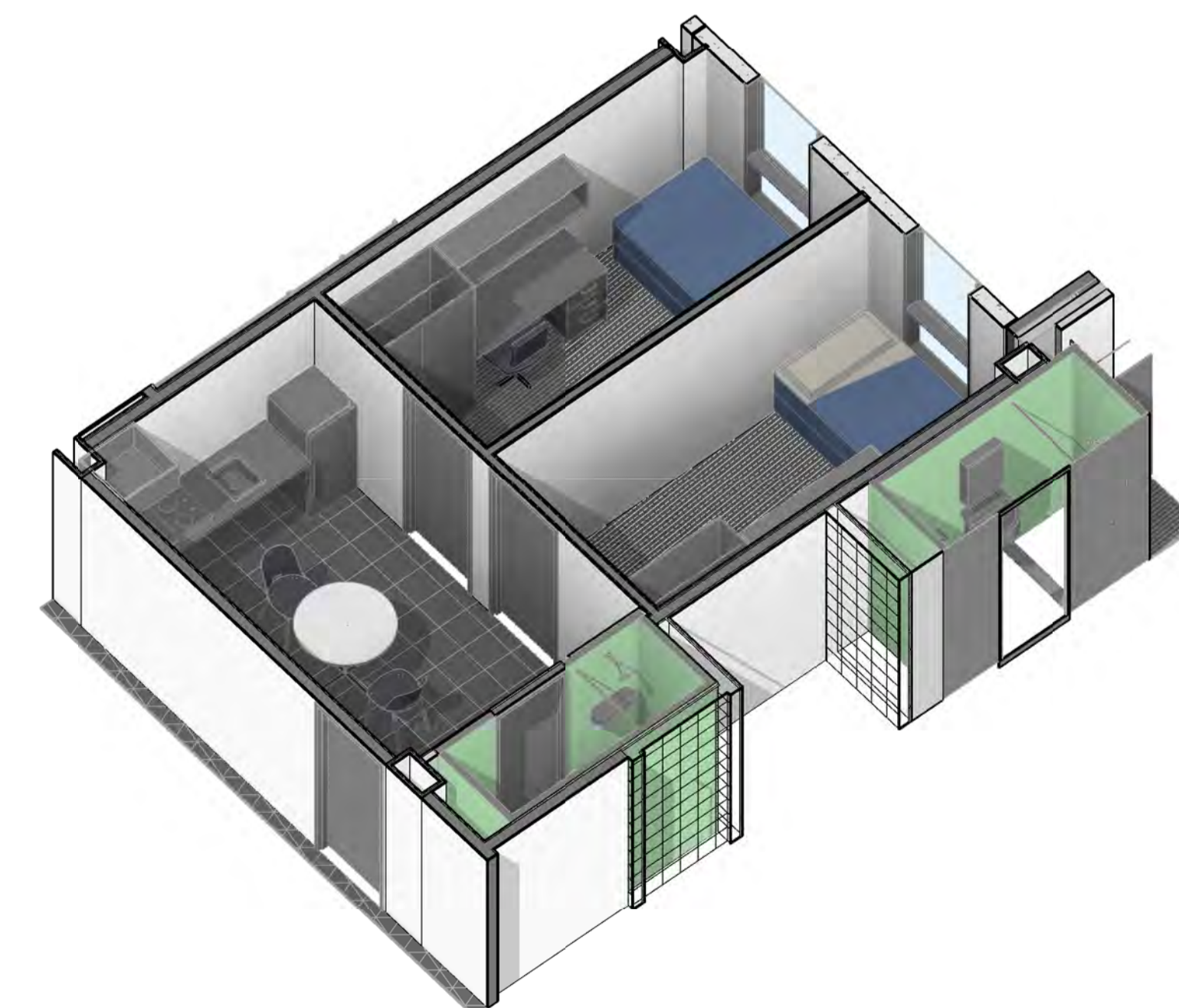
3D VIEW STUDIO



TYPICAL TWIN ROOM PLAN
1 : 50



3D VIEW TWIN ROOM



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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

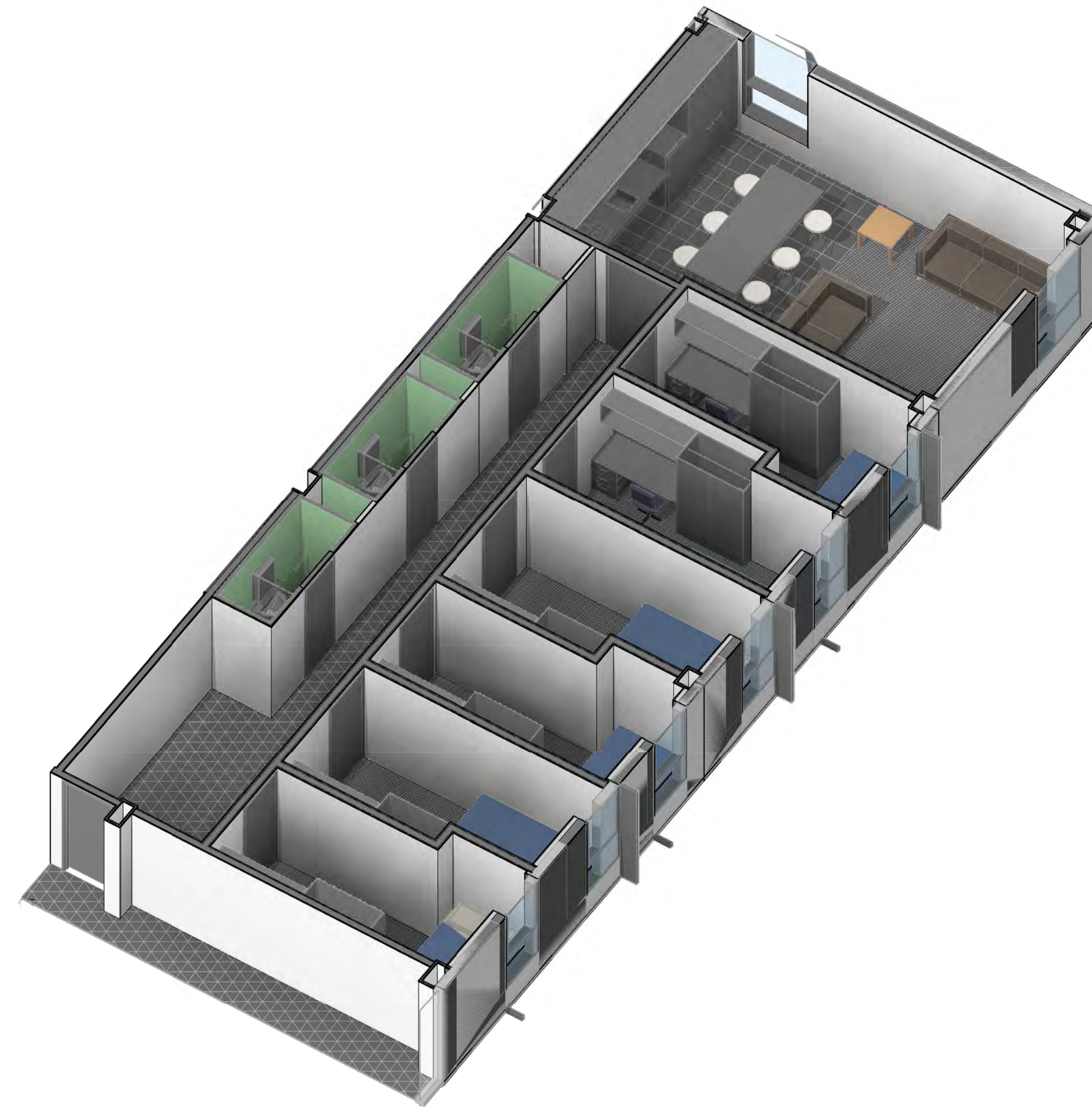
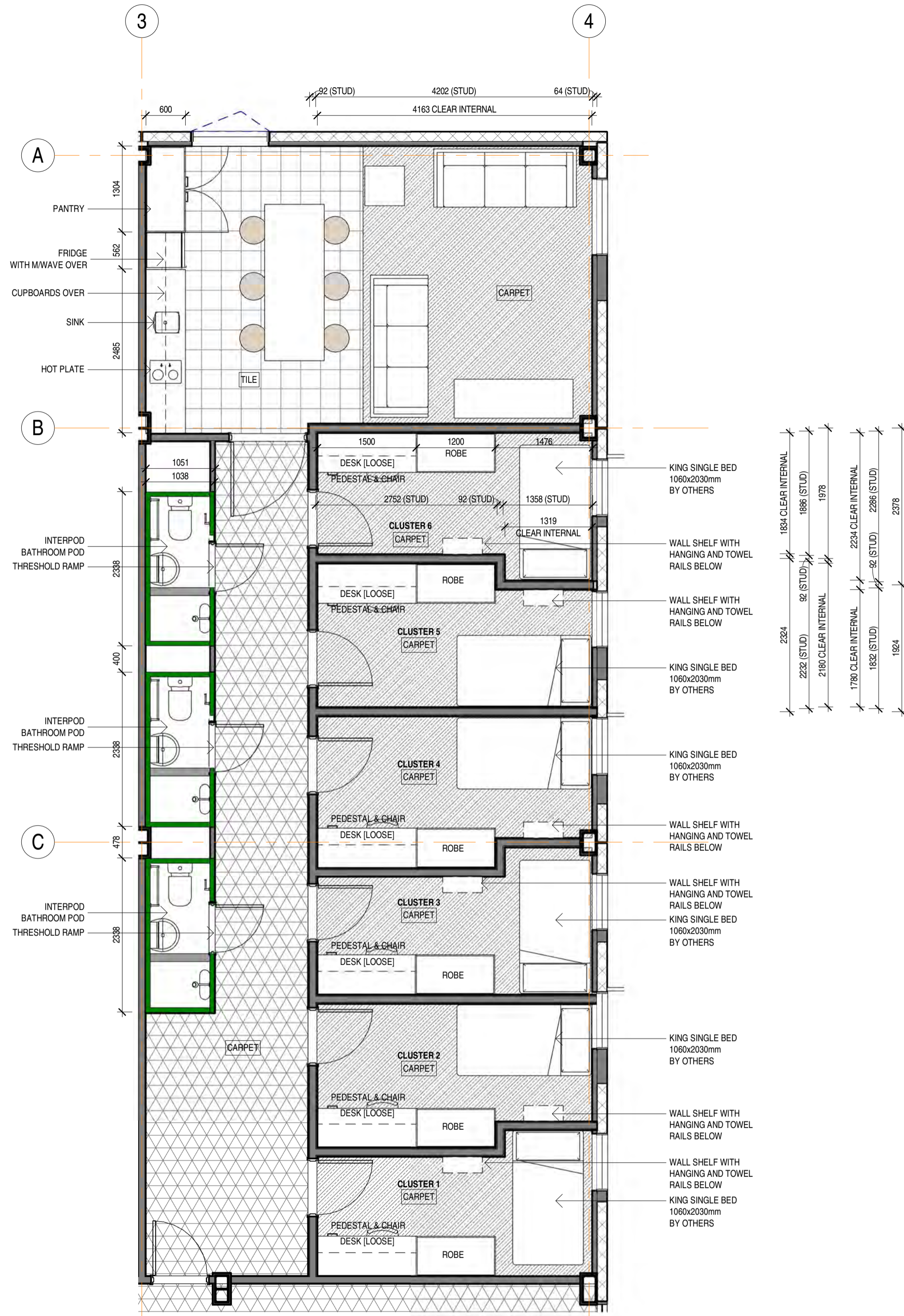
GRAY STREET - TYPICAL ROOMS

Scale 1 : 50
Drawn Author
Date SEPT 2017
Job No. 2017020



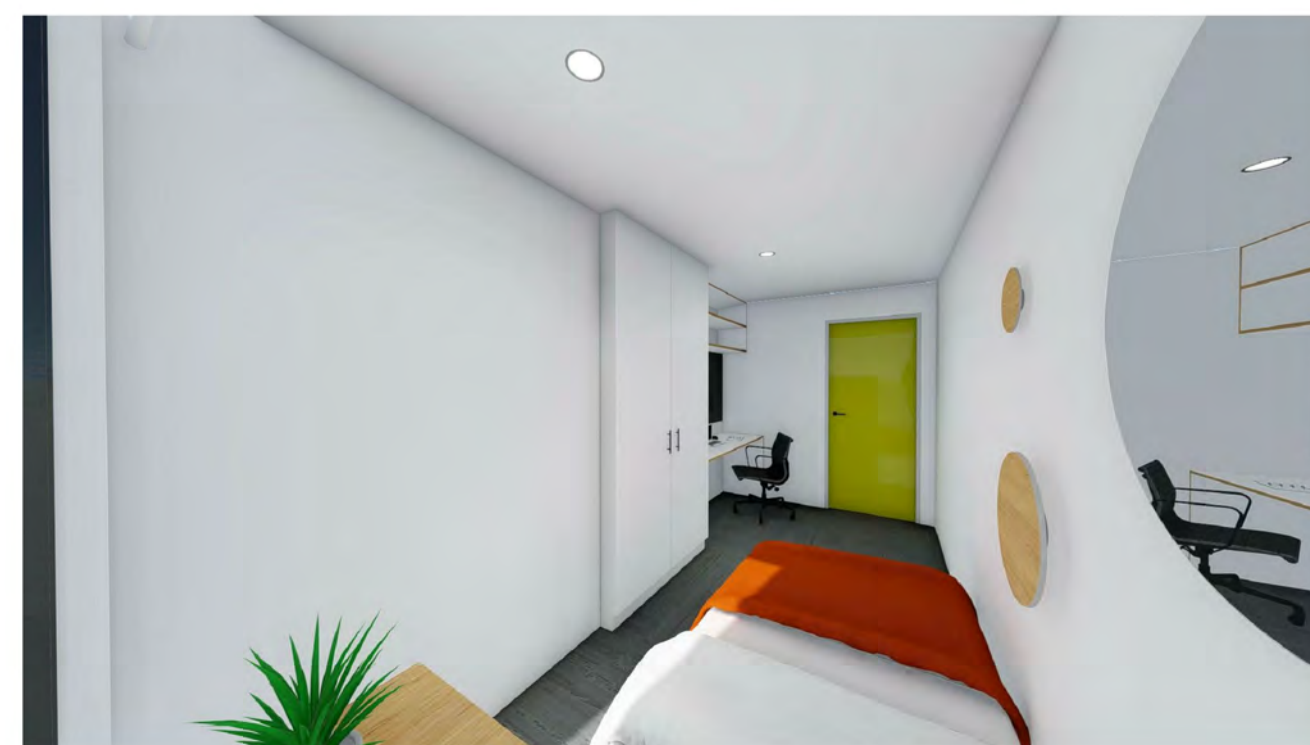
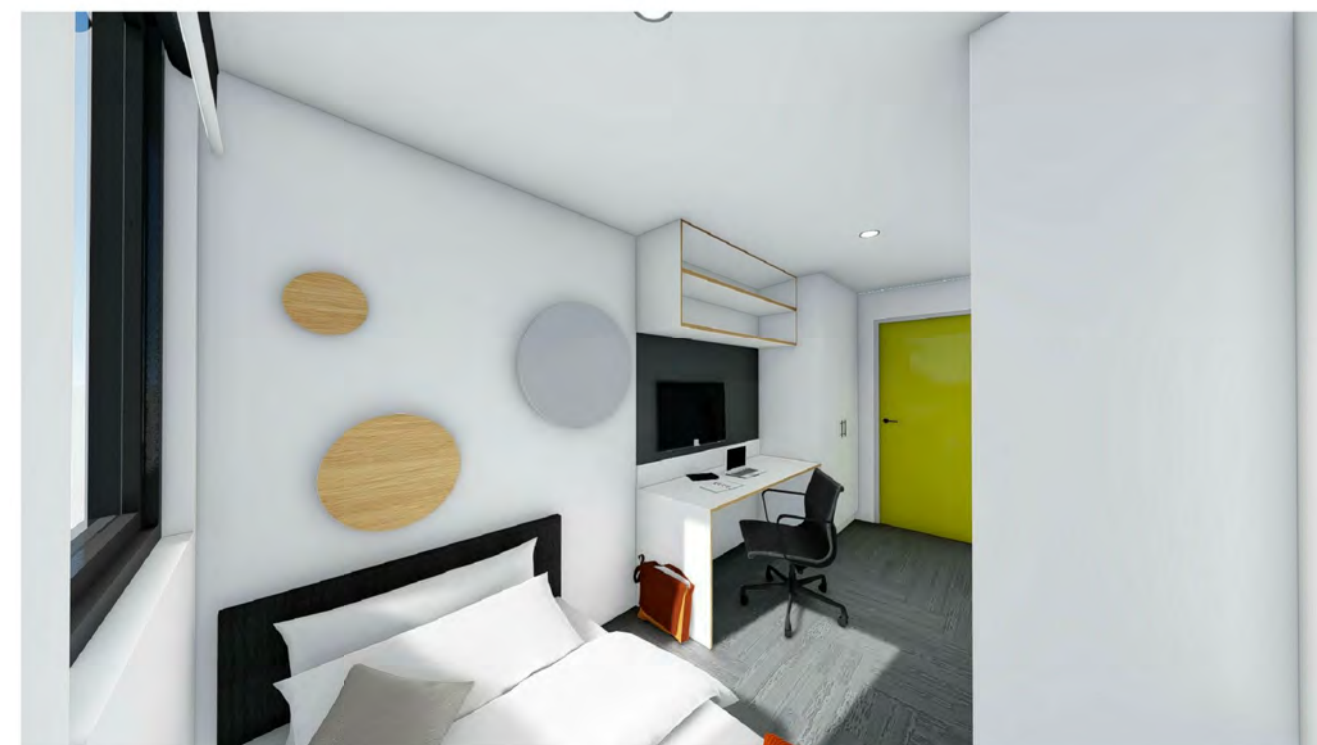
Dwg No. 3123 DA11 Rev: C A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



CLUSTER AREA SUMMARY

AREA SUMMARY	
BEDROOM/STUDY ROOM	8.5m ²
DINING/LOUNGE	28.7m ²
BATHROOM/TOILET	2.7m ²
ENTRY FOYER/HALL	9.8m ²



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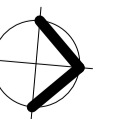
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89 - 109 GRAY STREET STUDENT HOUSING DEVELOPMENT

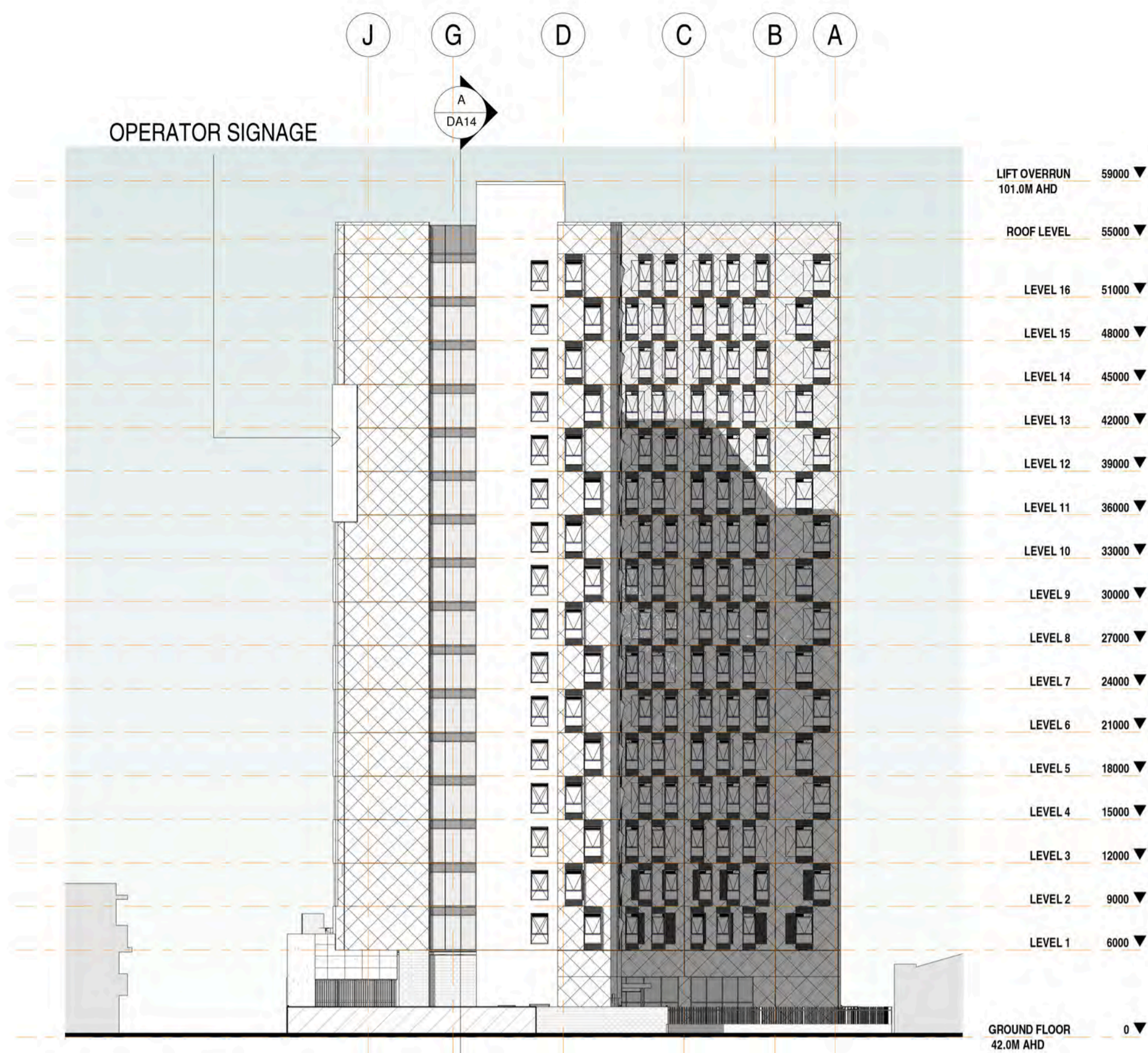
GRAY STREET - TYPICAL ROOMS

Scale As indicated
 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020



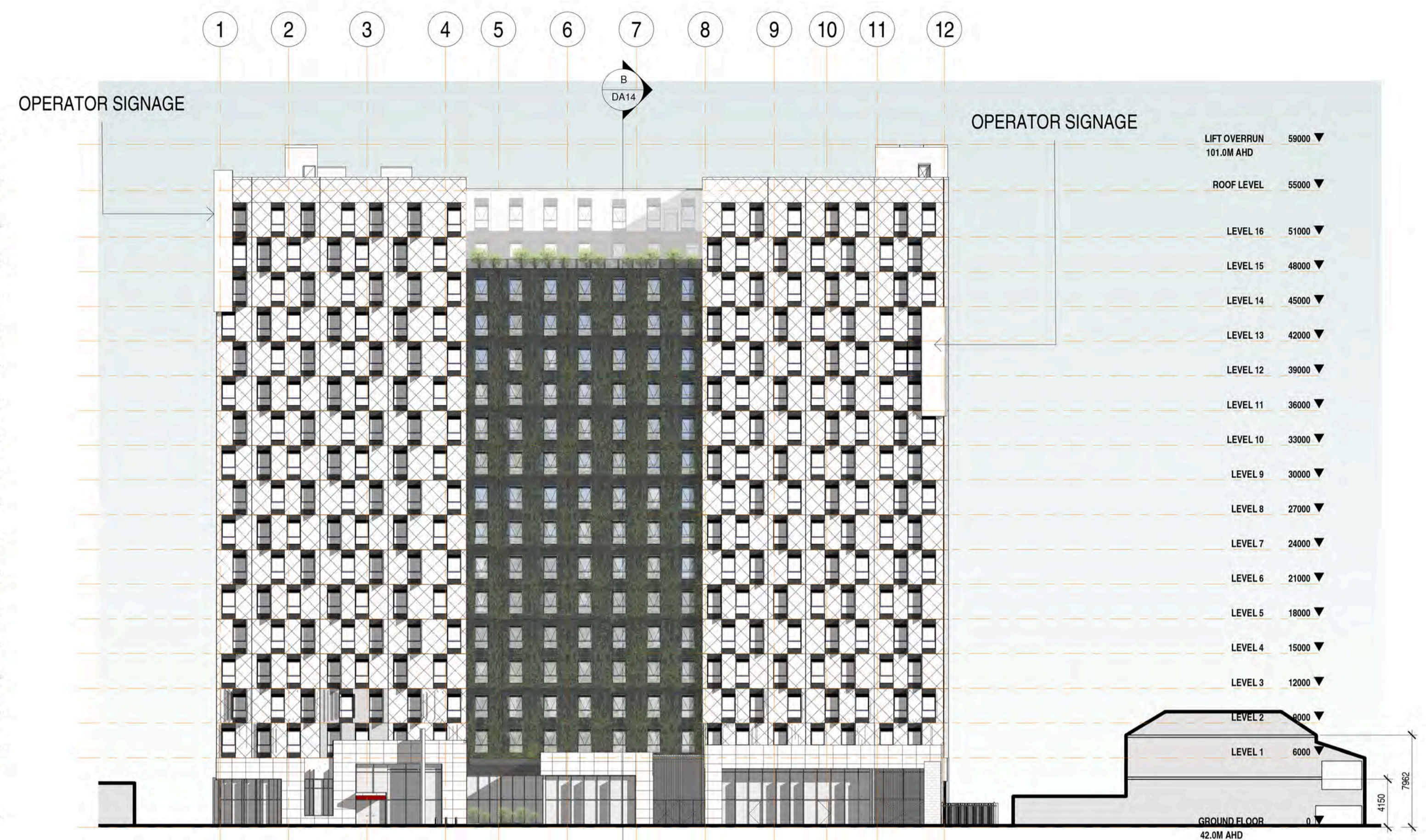
Dwg No. 3123 DA11B Rev. D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



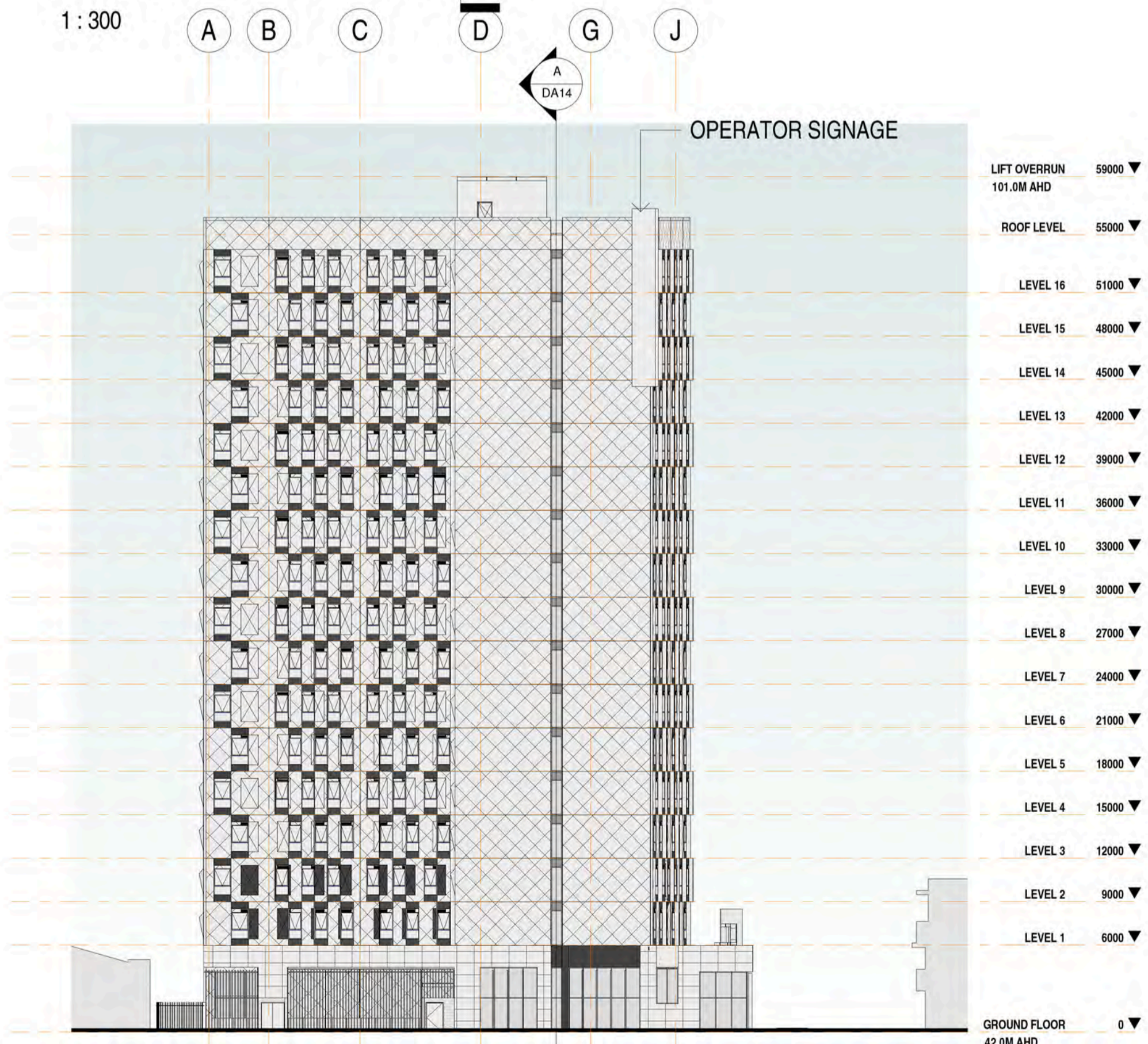
NORTH ELEVATION - SHADED

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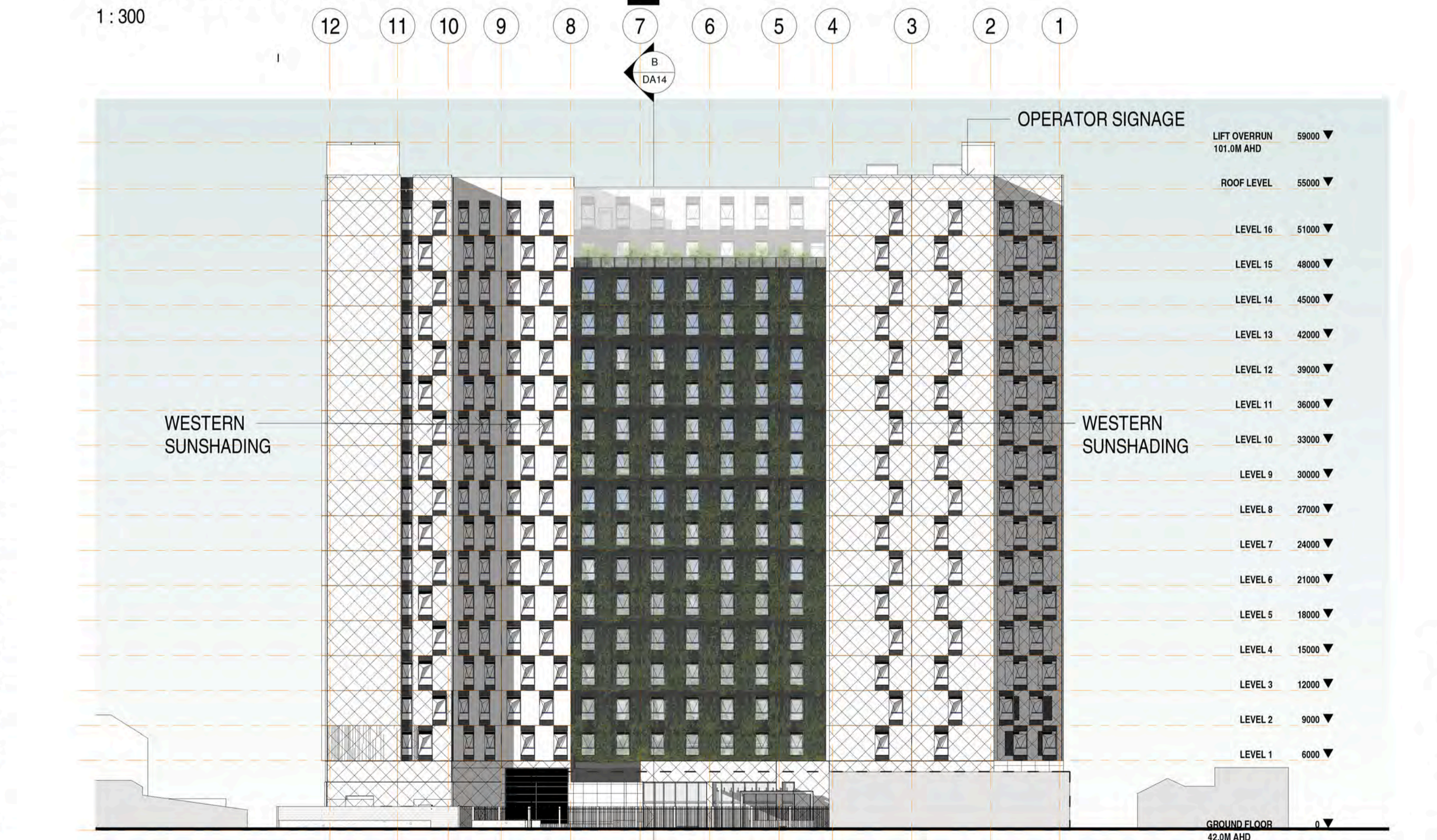
EAST ELEVATION - SHADED

1 : 300



SOUTH ELEVATION - SHADED

1 : 300



WEST ELEVATION - SHADED

1 : 300

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89 - 109 GRAY STREET STUDENT HOUSING DEVELOPMENT

GRAY STREET - ELEVATIONS

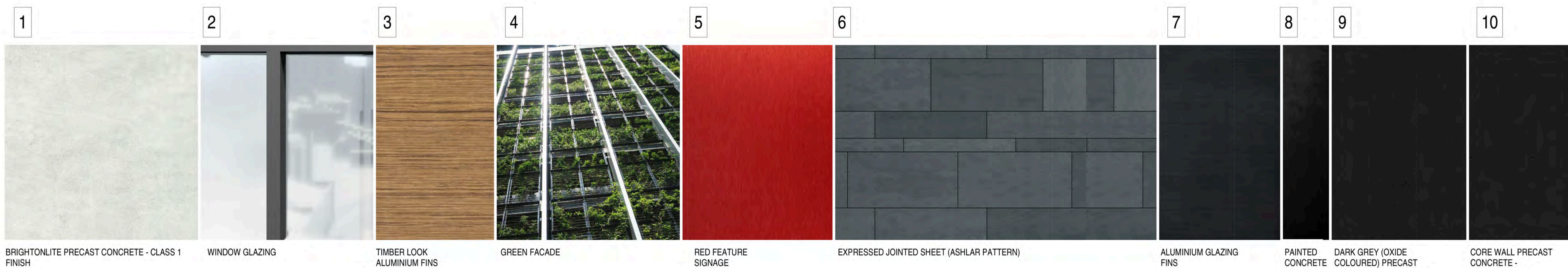
Scale 1 : 300
 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020
 Dwg No. 3123 DA12 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



PODIUM/GRAY STREET FRONTAGE

1 : 100



BRIGHTONLITE PRECAST CONCRETE - CLASS 1 FINISH

WINDOW GLAZING

TIMBER LOOK ALUMINIUM FINIS

GREEN FACADE

RED FEATURE SIGNAGE

EXPRESSED JOINTED SHEET (ASHLAR PATTERN)

ALUMINIUM GLAZING FINIS

PAINTED CONCRETE

DARK GREY (OXIDE COLOURED) PRECAST CONCRETE - CLASS 1 FINISH

CORE WALL PRECAST CONCRETE - CLASS 1 FINISH

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89 - 109 GRAY STREET STUDENT HOUSING DEVELOPMENT

GRAY STREET - PODIUM ELEVATION

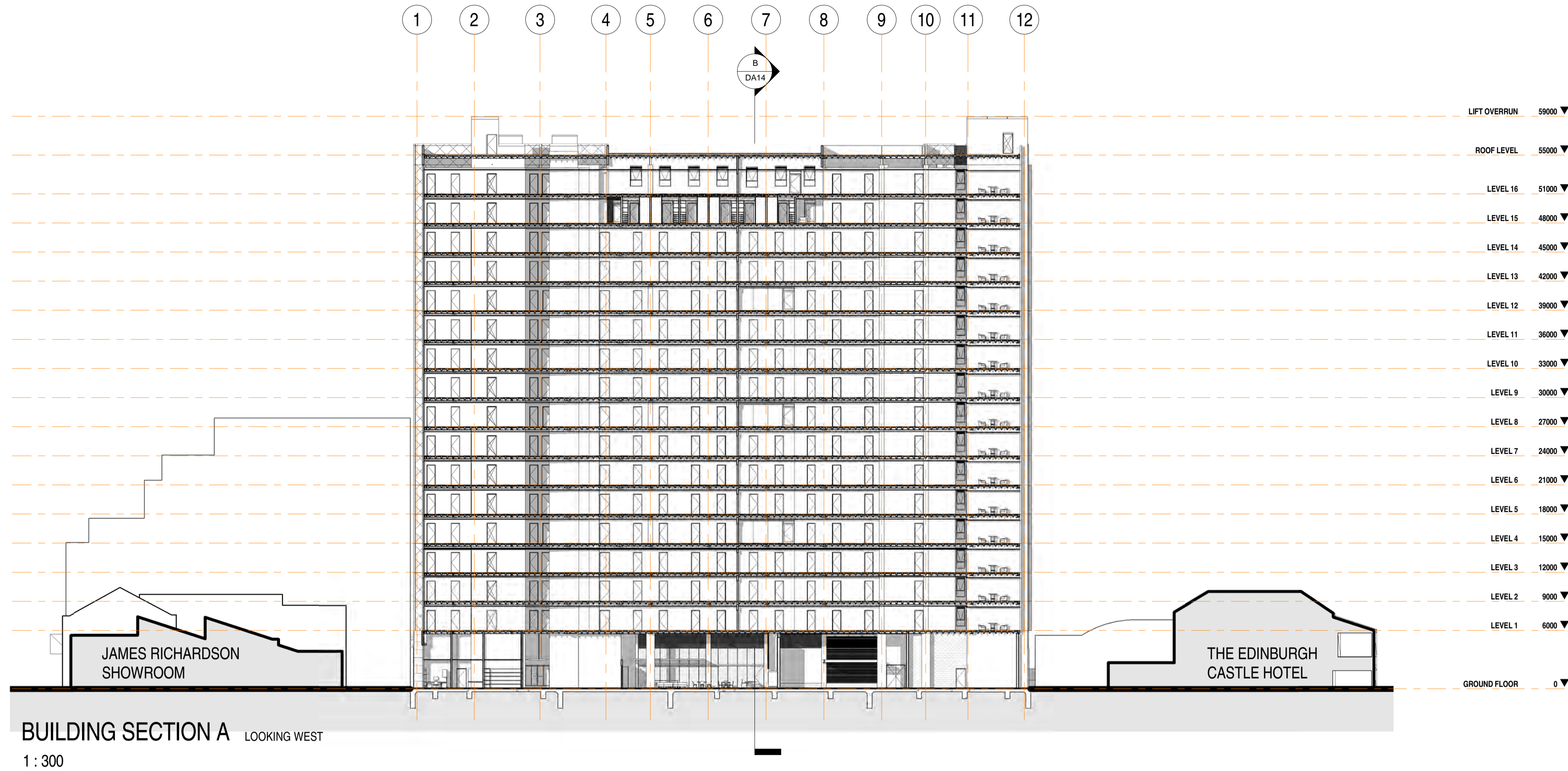
Scale 1 : 100
Drawn DT/LP
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA13 Rev. D A1 SHEET

Rev.	Amendment	Date
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D	ISSUED FOR APPROVAL	24/10/2017

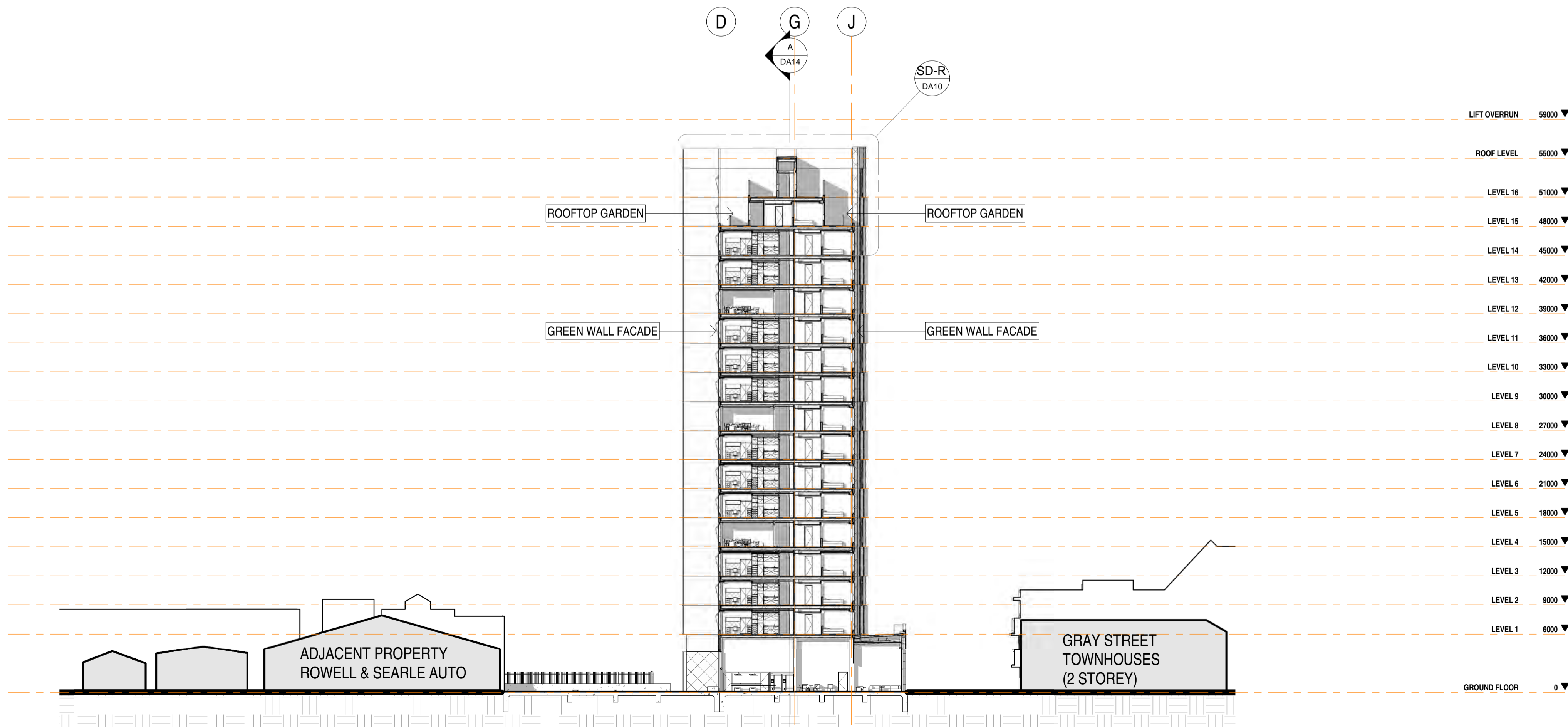
YIELD SUMMARY

AREA SUMMARY	
RETAIL TENANCY 1	90m ²
RETAIL TENANCY 2	53m ²
COMMUNAL INTERNAL	874m ²
COMMUNAL EXTERNAL	622m ²
SERVICE/ADMIN	450m ²
GROUND FLOOR TOTAL:	1467m ²
AREA PER RESIDENTIAL FLOOR:	1186m ² (TYPICALLY)
GROSS FLOOR AREA:	19926m ²
TOTAL AREA PER BED:	26.3m ²
AREA PER BED PER FLOOR:	23.7m ²

APARTMENT SUMMARY					
LEVEL	APARTMENT TYPE			TOTAL APT	BEDS
	STUDIO	DDA	TWIN CLUSTER		
Ground					
1	35	1	12	49	50
2	35	1	12	49	50
3	35	1	12	49	50
4	33	1	12	47	48
5	35	1	12	49	50
6	35	1	12	49	50
7	35	1	12	49	50
8	33	1	12	47	48
9	35	1	12	49	50
10	35	1	12	49	50
11	35	1	12	49	50
12	33	1	12	47	48
13	35	1	12	49	50
14	35	1	12	49	50
15	27	1	12	41	42
16	21	1	12	35	36
Roof Top					
Total Rooms	532	16	192	756	
Total Beds	532	16	32	772(people)	772



BUILDING SECTION A LOOKING WEST
1 : 300



BUILDING SECTION B LOOKING NORTH
1 : 300

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89 - 109 GRAY STREET STUDENT HOUSING DEVELOPMENT

GRAY STREET - SECTIONS AND YIELD INFORMATION

Scale As indicated
 Drawn DT/LP
 Date OCT 2017
 Job No. 2017020
 Dwg No. 3123 DA14 Rev: D A1 SHEET

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WEE HUR

89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA15 Rev: ED A1 SHEET

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D	ISSUED FOR APPROVAL	24/10/2017



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HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA16 Rev: ED A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA17 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA18 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA19 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
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89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA20 Rev: D A1 SHEET

Rev.	Amendment	Date
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D	ISSUED FOR APPROVAL	24/10/2017



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HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA21 Rev: D A1 SHEET

Rev.	Amendment	Date
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B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



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HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA22 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	07/07/2017
B	ISSUED FOR APPROVAL	22/09/2017
C	ISSUED FOR APPROVAL	17/10/2017
D	ISSUED FOR APPROVAL	24/10/2017



GREEN FACADE
OVER PRECAST
CONCRETE
(BLACK OXIDE
FINISH)

BRIGHTONLITE PRECAST FACADE

ALUMINIUM FIN

PAINTED SPANDRELS

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HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn RB
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA23 Rev: D A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	17/10/2017
B	ISSUED FOR APPROVAL	24/10/2017



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HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn DT
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA24 Rev: B A1 SHEET

Rev.	Amendment	Date
A	ISSUED FOR APPROVAL	17/10/2017
B	ISSUED FOR APPROVAL	24/10/2017



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WEE HUR

89 - 109 GRAY STREET STUDENT
HOUSING DEVELOPMENT

3D PERSPECTIVES

Scale
Drawn DT
Date OCT 2017
Job No. 2017020
Dwg No. 3123 DA25 Rev: B A1 SHEET

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Registrar-General

Certificate of Title - Volume 6166 Folio 510

Parent Title(s) CT 5748/704
**Dealing(s)
Creating Title** SC 12383074
Title Issued 30/11/2015
Edition 2
Edition Issued 09/03/2016

REAL PROPERTY ACT, 1886



Estate Type

FEE SIMPLE

Registered Proprietor

JAMES RICHARDSON WINES & SPIRITS PTY. LTD. (ACN: 007 676 575)
OF 35 LITHGOW STREET ABBOTSFORD VIC 3067

Description of Land

ALLOTMENT 61 FILED PLAN 40006
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Notations on Plan



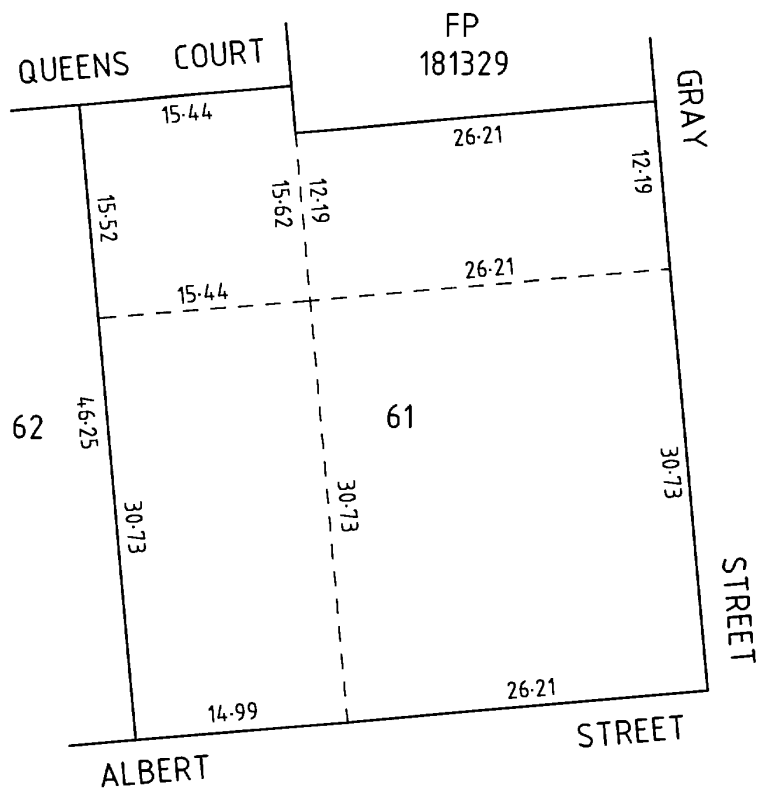
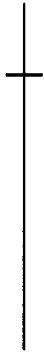
NIL

Registrar-General's Notes

NIL

Administrative Interests

NIL



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



Registrar-General

Certificate of Title - Volume 6166 Folio 511

Parent Title(s) CT 3754/89
**Dealing(s)
Creating Title** SC 12383074
Title Issued 30/11/2015
Edition 2
Edition Issued 09/03/2016

REAL PROPERTY ACT, 1886



Estate Type

FEE SIMPLE

Registered Proprietor

JAMES RICHARDSON WINES & SPIRITS PTY. LTD. (ACN: 007 676 575)
OF 35 LITHGOW STREET ABBOTSFORD VIC 3067

Description of Land

ALLOTMENT 487 FILED PLAN 181329
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Notations on Plan



NIL

Registrar-General's Notes

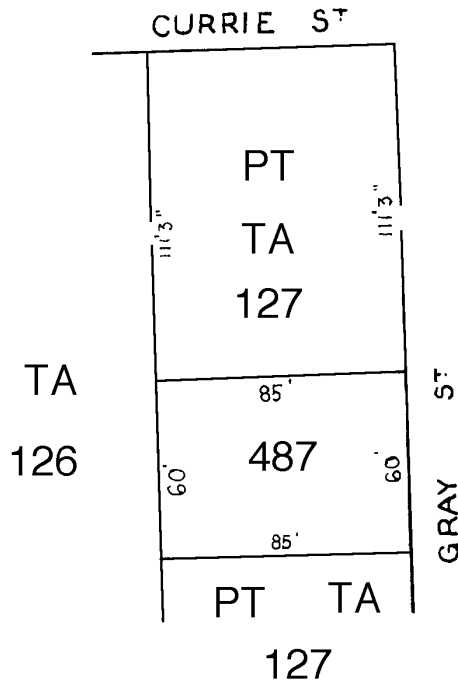
NIL

Administrative Interests

NIL



THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 3754/89
 SEE TITLE TEXT FOR EASEMENT DETAILS



DISTANCES ARE IN FEET AND INCHES
 FOR METRIC CONVERSION
 1 FOOT = 0.3048 METRES
 1 INCH = 0.0254 METRES

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

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Registrar-General

Certificate of Title - Volume 6166 Folio 512

Parent Title(s) CT 5829/92
**Dealing(s)
Creating Title** SC 12383074
Title Issued 30/11/2015
Edition 2
Edition Issued 09/03/2016

REAL PROPERTY ACT, 1886



Estate Type

FEE SIMPLE

Registered Proprietor

JAMES RICHARDSON WINES & SPIRITS PTY. LTD. (ACN: 007 676 575)
OF 35 LITHGOW STREET ABBOTSFORD VIC 3067

Description of Land

ALLOTMENT 488 FILED PLAN 181330
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

NIL

Notations

Dealings Affecting Title

NIL

Priority Notices

NIL

Notations on Plan



NIL

Registrar-General's Notes

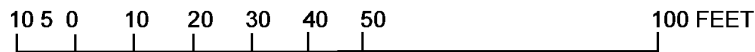
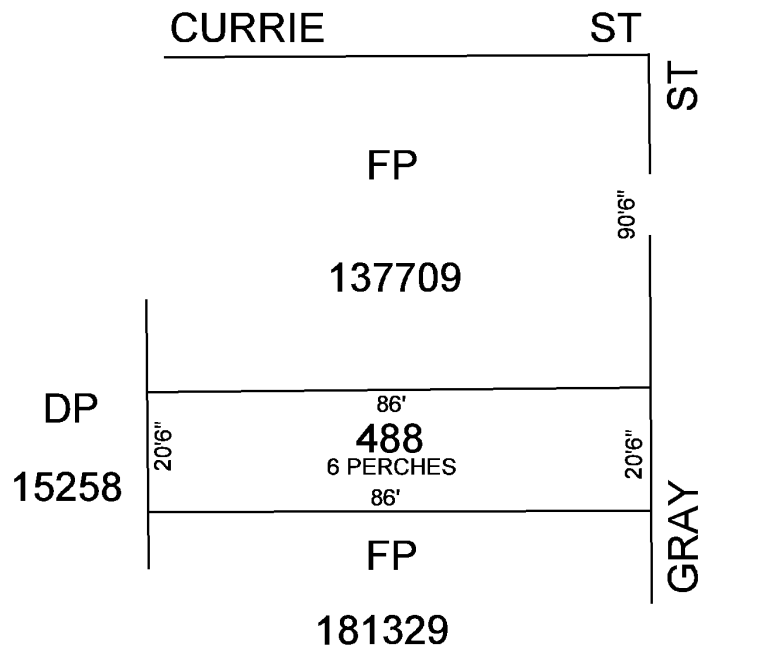
NIL

Administrative Interests

NIL



THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 211/43



FOR METRIC CONVERSION	
1 FOOT	= 0.3048 METRES
1 INCH	= 0.0254 METRES
1 ACRE	= 0.404686 HECTARES
1 ROOD	= 1011.7 m ²
1 PERCH	= 25.29 m ²

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION



PLANNING REPORT

GRAY STREET STUDENT ACCOMMODATION COMPLEX
89-109 GRAY STREET ADELAIDE, SA, 5000

PLANNING REPORT

Gray Street Student Accommodation Complex

89 – 109 Gray Street, Adelaide, SA, 5000



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

July 2017



CONTENTS

1.0	INTRODUCTION.....	3
2.0	BACKGROUND AND PRE-LODGEMENT CONSULTATION.....	4
3.0	DEVELOPMENT SITE	8
4.0	CONTEXT.....	10
5.0	PLANNING POLICIES	14
5.1	Relevant Development Plan	14
5.2	Zoning	14
5.3	Other Relevant Policies	14
6.0	PROPOSED DEVELOPMENT	16
6.1	General.....	16
6.2	Management.....	17
6.2	Accommodation Mix	18
6.3	External Materials	18
6.4	Building Form.....	18
6.5	Gray Street Activation	19
6.6	The Courtyard.....	19
6.7	Access and Service Vehicles	20
6.7	Corporate Identification.....	20
6.8	Staging	20
7.0	DEVELOPMENT PLAN ASSESSMENT	22
7.1	Procedural Matters	22
7.1.1	Nature of the Development.....	22
7.1.2	Category of Development	22
7.1.3	The Relevant Authority	23



7.1.4	Statutory Referrals.....	23
7.2	The Relevant Planning Issues.....	24
7.2.1	Acceptable and Envisaged Development in the Zone.....	24
7.2.2	Consistent with the Zones Desired Character.....	25
7.2.3	Building Height.....	27
7.2.4	High Quality Design.....	31
7.2.5	Building Setbacks.....	33
7.2.6	Waste and Recyclable Storage and Collection.....	34
7.2.7	Bicycle Parking and Pedestrian Movement.....	35
7.2.8	The Public Realm.....	36
7.2.9	Site Suitability.....	36
7.2.10	Noise Impacts.....	37
7.2.11	Crime Prevention Through Urban Design.....	37
7.2.12	Microclimatic Impacts.....	38
7.2.13	Environmental Sustainability.....	39
8.0	CONCLUSIONS.....	40



1.0 INTRODUCTION

MasterPlan SA Pty Ltd has been engaged by The Trust Company (Australia) limited as trustee for the WH Gray Street Trust on behalf of Wee Hur (Australia) Pty Ltd. to prepare this Planning Report and development application for Development Plan Consent to construct a multistorey student accommodation building, associated amenities and ground floor tenancies at 89 – 109 Gray Street Adelaide.

The Planning Report details the pre-consultation engagement process with the South Australian Government. It also includes a description of the subject land, the locality and the proposed development, as well as an assessment of the proposal against the relevant provisions of the Adelaide (City) Development Plan.

The Planning Report is supported by:

- a compendium of Architectural Drawings prepared by Brown Falconer Group - Appendix A;
- a Design Statement prepared by Brown Falconer Group - Appendix B;
- current Certificates of Title - Appendix C
- Adelaide City Council's Street Tree Planting Program for Gray Street between Currie Street and Waymouth Street - Appendix D;
- outcomes from the pre-lodgement engagement process - Appendix E;
- an Acoustic Report by Sonus Pty Ltd - Appendix F;
- a Landscape Plan by Hemisphere Design - Appendix G;
- an Aeronautical Assessment by Thompson GCS - Appendix H;
- a Site History Report by A.M. Environmental - Appendix I;
- a Waste Collection Access Review by GTA Consultants - Appendix J;
- a Waste Management Plan by Rawtec - Appendix K;
- a Wind Impact Assessment by Vipac Engineers - Appendix L; and
- a Sustainability Management Plan by Lucid Consulting Australia - Appendix M.



2.0 BACKGROUND AND PRE-LODGE MENT CONSULTATION

Wee Hur (Australia) agreed to participate in the Department of Planning, Transport and Infrastructure's (DPTI) pre-lodgement case management service. This involved attendance at one Pre-lodgement Panel (PLP) meeting on 12 April 2017 and one Design Review Panel (DRP) meeting on 24 May 2017.

The proposal considered by the PLP and DRP meetings involved two buildings separated by a publicly accessible courtyard. In consequence of comments received during pre-lodgement consultation, the proposal was extensively redesigned.

The Pre-lodgement Case Management Form and outcomes from the PLP and DRP meetings are at **Appendix C**.

The main outcomes from the PLP meeting held on 12 April 2017 were:

- the height of the proposed building will require an aeronautical impact study by an Airspace Consultant;
- the relevant zone envisages a maximum building height of 43 metres on the site;
- DPTI-Planning is not concerned with the proposal's height of 56 metres, acknowledging that over-height requirements will need to be met and support will be dependent on good design, high amenity, public realm improvements and a positive relationship with nearby local heritage places;
- The proposal will need to take account of the imminent authorisation of the Capital City Policy Review (Design Quality) DPA by the Minister;
- shadow diagrams may be required to identify shadow impacts on internal courtyards and apartments;
- a ground floor setback to widen the Gray Street footpath is supported;
- upper level building setbacks may pose issues for pedestrian scale and wind impact, if no canopy is proposed;
- the use of red brick at podium level is positive, but a better relationship with the Edinburgh Castle Hotel is required;
- more consideration required to be given to the western elevation, as the building will be considered 'in the round' but pre-cast concrete for external facades is supported in-principle;
- Adelaide City Council advised that the site has little bearing on Edinburgh Castle Hotel to the north, given the curtilage provided by the beer garden;



- waste management considerations should be brought forward, given the impact on design outcomes at ground level;
- bike parking considerations should be brought forward;
- a Site Contamination Report should be provided, given previous commercial land uses on the site;
- an Acoustic Report is required taking into consideration noise from the mechanical workshop to the west and live music from the hotel to the north; and
- a desktop wind impact study should be undertaken.

The Design Review Panel meeting was held on 24 May 2017. The Associate Government Architect wrote to MasterPlan on 31 May 2017 with his recommendations as informed by the Design Review Panel. The main outcomes from the DRP meeting were:

- the Panel supports the project team's aspiration to deliver a mixed use and high density student residential facility in this location, but this support is contingent on the proposal achieving high quality design outcomes in terms of residential amenity, form, massing and expression relative to current and future context;
- Gray Street is one of a number of key north-south pedestrian corridors identified by Council. Council has plans to upgrade the street to improve pedestrian amenity;
- proposed building height is supported in principle, as the proposal meets the over-height criteria set out by the Development Plan, and the site is close to the 53 metres height area specified in the Development Plan for nearby land;
- the DRP was not convinced that the tower setback above the podium would be sufficient to mitigate the physical and visual impact of the tower. A greater setback is recommended;
- some ground floor setback is supported to accommodate increased pedestrian traffic, even though there is a strong precedent for buildings to be built to the Gray Street boundary. An outcome which involves discussions with Adelaide City Council to achieve appropriate street threshold treatment is encouraged;
- the Associate Government Architect strongly supports the proposal's ground level arrangement of student functions and commercial tenancies to provide active frontage to Gray Street.
- Concern that there will be constant overshadowing by the Stage 1 (northern) building;



- general support for the general direction of the façade design to treat the buildings in the round, but more thought is required in relation to solar access into and ventilation of student rooms;
- more thought to be given to environmental and site specific conditions (orientation) and building articulation strategies;
- a more diverse range of public space in the residential levels would improve student amenity and help support a sense of community;
- the amenity of each student room should be a priority, especially in relation to solar access, practical use of each room, storage and adaptability for different future use; and
- principles of ecologically sustainable development (ESD) should be incorporated into the design development and site layout, built form and landscape design, and should include access to natural light and overshadowing impacts.

Following feedback received during PLP and DRP pre-lodgement consultation the proposal has been redesigned, as depicted on the drawing set prepared by Brown Falconer Group at **Appendix A** and described in its Design Statement at **Appendix B**.

The redesigned proposal now comprises a single ‘L’ shaped building massed around a central courtyard on the western side. The rearranged building will allow direct solar access to most rooms and natural light to every room. The central courtyard will continue to be visible through the ground floor from Gray Street, but will now function as private and secure outdoor space for students.

The redesigned proposal is the same height as before. The building height was supported by the DLP and DRP, albeit with reservations about the design. The DRP encouraged greater setback of the tower for the podium, and this has been achieved by significantly increasing the tower setback from 3.2 metres to 7.1 metres. At ground level, a high degree of street activation will be achieved by facing the two tenancies, the kitchen/dining room and other student common areas adjacent to and visible through clear glazing from Gray Street.

The materials palette of the proposal was generally supported, but a greater breakdown of building mass was encouraged. The amended design has responded by introducing a ‘window wall’ component to modulate the east and west facades into separate elements. This design amendment also assists in articulating the building’s mass and bulk.

Window placements have also been refined, with shading devices introduced to the western and eastern facades to counter morning and afternoon sunlight penetration.



The proposal reviewed by the PLP and DRP located all common areas at ground and first floor level, consistent with the operator's preferences. Concern was raised about the location of these common areas, room functionality, storage space and solar access.

These concerns have been addressed, with provision made for breakout spaces and common living rooms at every level. Furniture layouts are indicated in the Drawing Set at **Appendix A** showing how the rooms will be functionally arranged. A significant improvement in solar access has also been achieved for each student room and the common areas by fundamentally redesigning the shape of the building with an 'L' shape and with the building now fronting two street frontages.

Significant improvement to the public realm has been achieved by the creation of a ground floor wall along the length of Gray Street which varies in width to improve footpath space and pedestrian movement. These measures will be complemented by the proposed undergrounding of power lines in front of the site, and streetscape improvements about to commence in Gray Street by Adelaide City Council as part of its Smart-Move initiative to connect North Terrace and Grote Street. This initiative will include the planting of seven street trees in protected garden beds on the north side of Gray Street in front of the site, and five on-street parking bays retained. Council's Residential Street Tree Planting Program on this section of Gray Street is at **Appendix D**.



3.0 DEVELOPMENT SITE

The development site comprises three contiguous allotments on the western side of Gray Street between Currie Street and Waymouth Street. The site has a combined area of 2,466 square metres.

The development site has a 67.5 metres frontage to Gray Street, a 41.2 metres frontage to Albert Street to the south and an 18.87 frontage to Queens Court to the west.

Certificates of Title details for each of the three allotments are:

- **Allotment 487** in CT 6166/511. This allotment has an 18.3 metre frontage to Gray Street and a depth of 25.9 metres. No easements or other restrictions are registered or recorded over this allotment;
- **Allotment 488** in CT 6166/512. This allotment has a frontage of 6.2 metres to Gray Street and a depth of 26.2 metres. No easements or other restrictions are registered or recorded over this allotment; and
- **Allotment 61** in CT 6166/510. This allotment has a frontage to Gray Street of 42.92 metres, a frontage of 41.2 metres to Albert Street and a frontage to Queens Court of 18.87 metres.

The Certificates of Title are at **Appendix C**.

The arrangement of the three allotments in relation to surrounding allotments and roads is shown below.



Figure 1: Site Context



The development site is occupied by a commercial building with rendered facades and casement style window openings. The building features a saw-tooth roof. The building on the corner of Gray Street and Albert Street is two storeys, reducing to single storey at the northern end.

For many years, the building has been occupied and used by James Richardson Pty Ltd for furniture storage-warehouse/office purposes. An open service yard at the rear of the site is accessible from Queen's Court, and is used for vehicle parking and loading purposes.

The saw tooth roof appears to be clad with corrugated asbestos.

The buildings are not heritage listed. They are furthermore not identified as a local Heritage Place (Townscape) or a local Heritage Place (City Significance) in the Development Plan.

There are no significant trees, or indeed any vegetation on the site or in adjacent road reserves.

The narrow footpath on the western side of Gray Street is taken up with power poles supporting overhead electricity wires and street lighting.



4.0 CONTEXT

The development site's principal frontage is onto Gray Street. Gray Street is a local road under Council's care and control. Along with other selected roads running north-south in the north-west quadrant of the CBD, Council is proposing to improve the amenity and pedestrian accessibility of this local corridor with street tree planting on the western side of Gray Street between Currie and Waymouth Street during the 2017/18 financial year – see **Appendix D**. Tree planting on the section of Gray Street in front of the site will be deferred until construction is substantially completed.

Gray Street has also been identified by Council as a *smart-move* link¹, which will potentially incorporate bicycle infrastructure and other upgrades for a low-stress walking and cycling friendly link connecting North Terrace to Grote Street along Wilcox, Little Sturt, Chatham, Lowe, Blenheim and Gray Streets. To be known as 'City West Quietway', the initiative may include footpath widening concept designs for the City West Quietway project which are scheduled to occur in the 2017/18 financial year.

The site is within convenient walking distance of tertiary education and medical research institutions in Hindley Street and North Terrace. These institutions include the new Royal Adelaide Hospital, the South Australia Health and Medical Research Institutes, Uni SA (City West Campus), TAFE SA and the Adelaide Health and Medical Sciences Building.

Close to the site is Uni-lodge on Waymouth, a high-rise student accommodation building with frontage to Waymouth Street and the western end of Albert Street. This building is nine storeys high. At the corner of Prince Court, Albert street and Waymouth Street is a six storey apartment building (5 Albert Street and 288 Waymouth Street).

¹ Adelaide City Council: Smart Move Strategy 2012-2022. Interim Action Plan 2016-2018.



Uni-lodge



Apartment Building - corner Prince Ct & Albert St

The Edinburgh Castle Hotel is situated at the corner of Gray Street and Currie Street. The hotel's beer garden backs onto the development site's northern boundary. The Edinburgh Castle Hotel is listed as a local Heritage place.



Edinburgh Castle Hotel



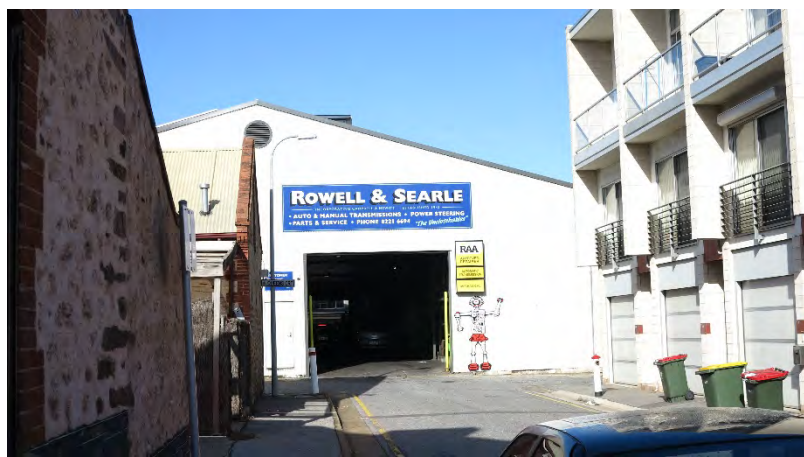
Two to three storey residential apartments are located on the eastern side of Gray Street opposite the development site. The apartments are built onto the street boundary.



Apartments

James Richardson Showroom is located on the corner of Gray Street and Waymouth Street. This business until recently occupied and used the development site for furniture warehouse/office purposes.

Automotive services businesses are located generally to the west of the development site, and include Ultra Tune in Waymouth street, Rowell and Searle Auto Repairs between Queens Court and Albert Street, and ABB Auto at the corner of Currie Street and Kings Court.



Rowell & Searle Auto Repairs

The tramline runs along North Terrace through to the Entertainment Centre at Hindmarsh, and in the opposite direction along King William Street through to Glenelg.



The tramline will be extended east from King William Street past the University of Adelaide and Uni SA and to the old Royal Adelaide Hospital site. This extension is an initiative jointly funded by the SA Government and Adelaide City Council as part of the AdeLINK tram network project. Future extensions to the light rail network are planned for Currie Street through to Henley Beach Road, and a CBD continuous loop following Morphett Street, Sturt Street, Halifax Street and Frome Street. These future extensions “*will occur in several stages in line with the market for residential and commercial development, jobs and population growth, and as funding becomes available*”.²

The development site is also within convenient walking distance of bus routes running north-south and east-west along West Terrace, North Terrace, Currie Street and Morphett Street.

A free City Connector bus service runs on two loops through the CBD and North Adelaide. The CBD loop follows Halifax Street, Whitmore Square, Morphett Street, Grote Street, King William Street, North Terrace, East Terrace and Hutt Street.

An extract of the Adelaide metro City Map is reproduced below.

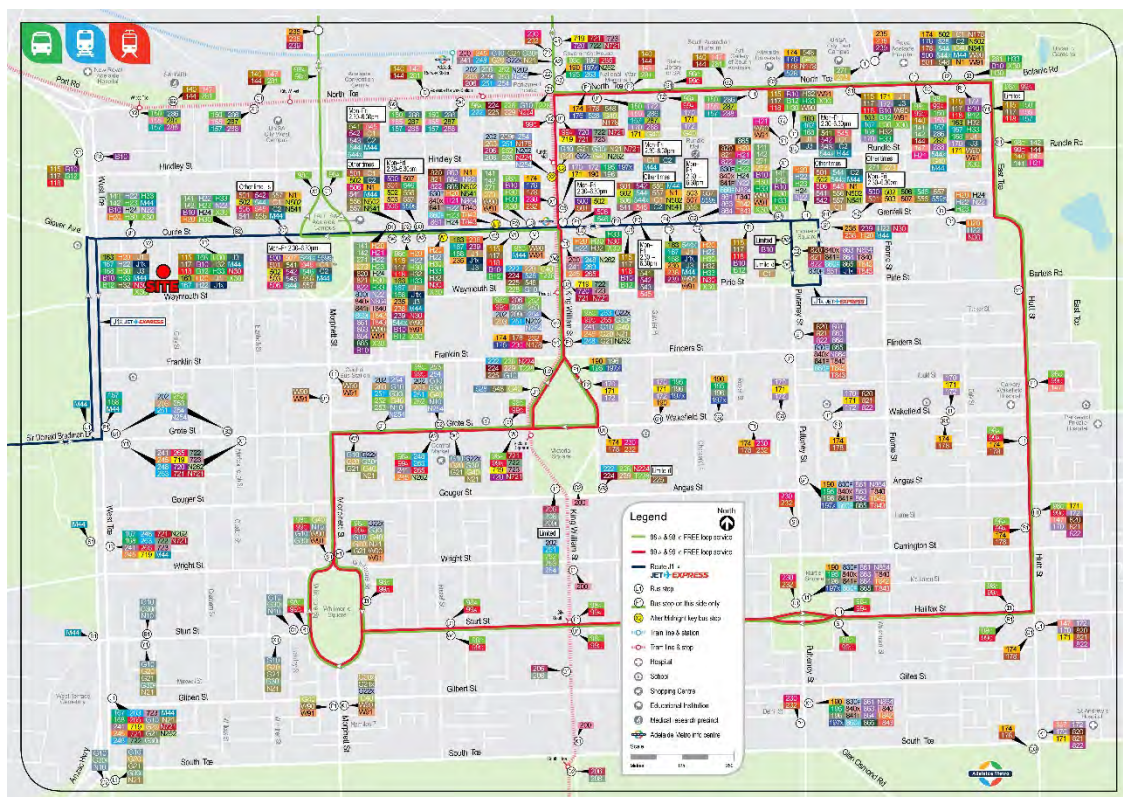


Figure 2: Adelaide Metro City Map

² Our Plan: Building a Stronger South Australia. South Australian Government. [undated].



5.0 PLANNING POLICIES

5.1 Relevant Development Plan

The relevant Development Plan is the Adelaide (City) Development Plan, consolidated version dated 20 June 2017. This version incorporates the Minister's Capital City Policy Review (Design Quality) Development Plan Amendment, authorised on 30 May 2017.

5.2 Zoning

The development site and all surrounding allotments are in the Capital City Zone (Zones Map Adel/1). No Policy Areas apply to this part of the Capital City Zone.

5.3 Other Relevant Policies

Currie Street between Grote Street and North Terrace is identified as a Major Walking Route on Adelaide (City) Pedestrian Network Map Adel/1 (Overlay 2). It is also identified as an 'Important Secondary Route' on Adelaide (City) Bicycle Network Map Adel/1 (Overlay 3).

The development site is affected by the Adelaide (City) Airport Building Heights Map Adel/1 (Overlay 5). This map indicates the site being located between Obstacle Limitation Surface contours 60 and 70 metres AHD. Buildings which exceed the OLS contours on this map must be referred to the Department of Transport and Regional Services through Adelaide Airport Limited.

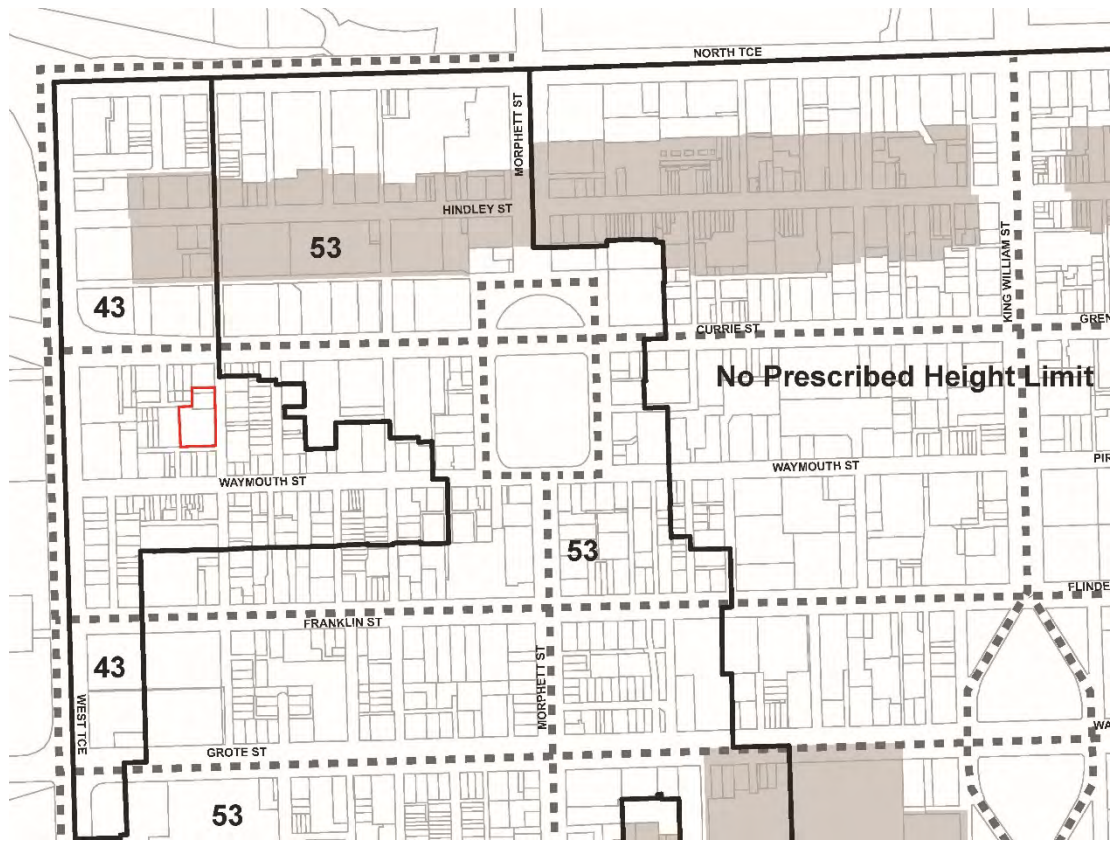


Figure 3: Policy Context

The development site and surrounding locality is within a Designated Area for the purposes of affordable housing as shown on Adelaide (City) Affordable Housing Map Adel/1 (Overlay 15a).



6.0 PROPOSED DEVELOPMENT

6.1 General

It is proposed to demolish the existing warehouse/office building and construct 16 levels of student accommodation building with ground floor tenancies, student amenities and private courtyard. The development will contain:

- 776 rooms of student accommodation containing 792 beds. The rooms will be disposed as 361 Studio rooms, eight DDA rooms, seven twin bed rooms and 288 'cluster' rooms (six beds/rooms per cluster);
- two retail tenancies at ground floor level facing Gray Street, one of 55 square metres and the other of 125 square metres;
- communal student and visitor facilities at ground floor level comprised of a gymnasium, theatre, study hub, reception, kitchen/lounge /dining and quiet study areas;
- a reception counter, visitor lounge and back of house offices at ground floor level;
- common living and breakout spaces on each accommodation level. Larger breakout spaces are provided on every fourth level;
- an open landscaped, paved and illuminated courtyard for student relaxation which can be accessed via bi-fold doors at ground floor level;
- a laundry, waste storage, workshop, general storage, bike store and transformer at ground floor level;
- a 4.5 metres wide access lane on the northern side of the site providing shared access to the SAPN transformer and bin storage room;
- common living rooms on levels 1-16; and
- a total building height of 59 metres AHD, measured from ground floor (42 metres AHD) to the top of the lift over-run (101 metres AHD).

Although proposed to be undertaken in two stages, it is now proposed to develop the site in a single stage of development.



6.2 Management

The building will be managed by Uni-Lodge. Uni-Lodge is a privately-owned management company specialising in the operation and management of student accommodation. It is the largest provider of student accommodation in Australia and New Zealand. Properties under Uni-Lodge management in South Australia are:

- 30 Victoria Street, Adelaide;
- 304 Waymouth Street, Adelaide;
- 45 York Street/Bent Street, Adelaide;
- 92 Gray Street, Adelaide (opposite the development site);
- 227 North Terrace, Adelaide;
- 131 Gray Street, Adelaide;
- 22 Wakefield Street, Kent Town;
- 7 Lorne Avenue and 2 St Bernard's Road, Magill (adjacent Uni SA Magill Campus);
- 196 North Terrace, Adelaide (Tobin House);
- 65 King William Street, Adelaide; and
- 137 Hindley Street, Adelaide.



6.2 Accommodation Mix

The proposed accommodation rooms are located on Levels 1-16, with four different types of accommodation, as detailed in Table 1 below.

Table 1: Accommodation Mix, Bed and Room Numbers

Unit Type	Rooms	Beds	Description
Studio	552	552	35 rooms Levels 1-7, 9-11, 13-15 and 33 rooms Levels 8, 12 and 16
DDA (Disability)	16	16	1 DDA room per Level (16 rooms)
Twin Bed Share	16	32	1 twin share room per Level (16 rooms)
Cluster Beds	192	192	1 cluster bed group per Level (12 beds per cluster).

6.3 External Materials

The external façade will consist of ribbed precast panels and a 'window wall' component to significantly modulate the east and west facing facades into separate elements. Shade wings will be fixed vertically to the east and west facing window walls for shading purposes.

6.4 Building Form

In response to feedback received from the Design Review Panel, the proposal has been fundamentally redesigned as a single, L-shaped building which addresses the Gray Street and Albert Street frontages, with a substantial community courtyard at the rear. The building arrangement now delivers superior solar access to the student accommodation rooms and the community courtyard.

Access to the transformer and bin collection area will be provided via a 4.5 metres wide service driveway on the northern side of the building. The driveway will be accessible from Gray Street. Vehicle access into the site from Queen's Court and Albert Street will not be permitted.

The building form now incorporates a better-defined podium which will include two retail tenancies and the main student entry facing onto and directly accessible from Gray Street. The ground level wall facing Gray



Street will step back from the boundary to create a courtyard at 'footpath' level for landscaping, seating and public bicycle parking.

The podium's presence at footpath level has been enhanced by increasing the 'tower' setback to Gray Street. The setback distances range from 7.105 metres at the Albert Street corner, reducing to 5.2 metres in the central section and down to 3.0 metres at the north end.

Along Albert Street, Levels 1-16 will be setback a full 6.0 metres from Albert Street.

6.5 Gray Street Activation

The Gray Street frontage will be activated by setting the ground floor back at irregular intervals and distances and using this space for outdoor seating as an extension to the dining room. Combined with the removal of above ground power poles and wires, this will create a wider, obstacle free pedestrian corridor in front of the new building.

The ground floor facades facing Gray Street and Albert Street will feature a high proportion of glazing, including double sliding glass doors into the building for students as the main point of entry, and dedicated entrances to the two retail tenancies.

Glazing to the eastern and western common kitchen/dining room/lounge space at ground level, including bi-fold doors opening onto the rear courtyard, will offer further opportunities for views and pedestrian access into and through the building to the landscaped rear courtyard.

6.6 The Courtyard

The rear courtyard will occupy a very generous 580 square metres or 23.5 per cent of the site. The courtyard will be enclosed on two sides by the building, and on the other two sides by Queen's Court and the adjacent Rowell and Searle motor vehicle workshop.

The courtyard will be paved and landscaped in accordance with the Landscape Concept prepared by Hemisphere Design at **Appendix G**.

The courtyard will be fenced along Queen's Court for security and safety purposes, with a code-activated gate to Queen Street allowing pedestrian access from this direction. The courtyard will also be accessible from Albert Street by code-activated gates at both ends of the bike store.



6.7 Access and Service Vehicles

No provision is to be made for off-street parking of motor vehicles, given the nature of the development, its central location and proximity to public transport.

Provision will be made for the secure parking of 35 bicycles at the western end of the site. This space will be accessible from Albert Street and the internal courtyard.

Bicycle racks for six bicycles will also be located on the widened Gray Street footpath near the main building entrance. These spaces will be available to visitors and the general public.

Waste collection will occur on-site via the service driveway on the northern side of the building. Solid and recyclable waste will be wheeled from the bin storage room to the driveway for collection by commercial contractors. The accompanying reports by Rawtec and GTA Consultants detail how commercial waste vehicles will access the site via Gray Street – see **Appendix J** and **Appendix K**.

Queen's Court will not be used for vehicle access or servicing purposes due to its width and the tight 90 degree bend in the road.

6.7 Corporate Identification

The building will be identified by four internally illuminated signs affixed to the upper level north, south, east and west facades. Although not shown on the drawings, a visible identification sign at ground level will identify the building to visitors, passing pedestrians, motorists and cyclists approaching via Gray Street.

Further signage will be affixed to the building façade at ground level indicating the location of the service driveway for electricity transformer and waste collection vehicles.

6.8 Staging

The proposal considered during pre-lodgement consultation proposed two buildings to be developed in two storeys, with the northern tower proceeding as Stage 1.

The development is now in the form of a single building to be constructed as a single construction entity. Completion of the building is required by November 2018 to coincide with a marketing campaign by Uni-Lodge which will be targeted to students for the 2019 academic year intake.

For marketing purposes, it is important that approximately half of the building is available for inspection purposes by no later than November 2018. This may necessitate a two-stage 'completion' program whereby the uncompleted half of the building is quarantined to allow for finishing trades such as tiling, painting and other final finishes to be carried out safely and without risk to the public.



Due to the tight time frame imposed by the November 2018 deadline, the building is likely to be constructed in four consecutive stages for Building Rates Consent purposes. Those stages are:

- Stage 1: building demolition;
- Stage 2: substructure construction;
- Stage 3: superstructure construction; and
- Stage 4: external facades and fitout.



7.0 DEVELOPMENT PLAN ASSESSMENT

The relevant Development Plan for assessment purposes is the Adelaide (City) Development Plan, consolidated version dated 20 June 2017. As previously noted, this version includes the provisions of the Ministerial Capital City Policy Review (Design Quality) Development Plan Amendment which was gazetted and consolidated into the Development Plan on 30 May 2017.

The development site and surrounding land is in the Capital City Zone. No policy areas apply to this part of the Capital City Zone. The 'Design Quality' DPA has amended the Capital City Zone.

7.1 Procedural Matters

7.1.1 Nature of the Development

The development is best described as:

Demolition of existing buildings and construction of a 16-level student accommodation building with private open space, associated student facilities and two retail tenancies at ground level.

Development of this kind is not listed as either complying or non-complying in the Capital City Zone. The proposed development must therefore be assessed as a *merit* development. This means that the proposed development must be assessed on its merit taking into account the provisions of the relevant Development Plan.³

7.1.2 Category of Development

Principle of Development Control (PDC) 40(a) of the Capital City Zone lists all forms of development as Category 1 for public notification purposes, except where specifically assigned as Category 2, or where listed as non-complying. The circumstances listed in PDC 40 (b) do not apply to the development site, so therefore the proposal is a Category 1 Development and is exempt from all forms of public notification.

³ Section 35 (5), Development Act 1993.



7.1.3 The Relevant Authority

The proposed development has an estimated development cost of \$52.0 million. Clause 4B of Schedule 10 of the *Development Regulations 2008* prescribes that the Development Assessment Commission is the relevant authority where the total amount to be applied to any work when all stages of the development are completed exceeds \$10 million.

As the proposed development will have a development cost exceeding \$10 million when all stages are completed, the Development Assessment Commission (DAC) is the relevant authority.⁴

7.1.4 Statutory Referrals

Clause 9 of Schedule 8 of the Regulations requires development which exceeds the height limits prescribed on the Adelaide (City) Airport Building Heights Map Adel/1 (Overlay 5) to be referred to the Commonwealth Secretary for the Department of Transport and Regional Services (DTRS) for direction.

Clause 24 of Schedule 8 of the Regulations also requires the application to be referred to the Government Architect or Associate Government Architect.

Pre-lodgement consultation with the DRP and formal advice subsequently received from the Associate Government Architect has informed the development proposal's design.

The proposal has a building height to the top of the lift over-run by 59 metres AHD, which exceeds the Obstacle Limitation Surface (OLS) values shown on Map Adel/1 (Overlay 5).⁵

For this reason, an application has already been made to Adelaide Airport Limited by Thompson GCS Pty Ltd for permission to penetrate the protected airspace around Adelaide Airport.

It is understood that Adelaide City Council will also receive the application for informal comment. Referral to this agency is not formally required or prescribed by the Regulations.

As previously noted, the applicant agreed to participate in the pre-lodgement case management process. This included one meeting with the pre-lodgement Panel and one meeting with the Design Review Panel. Meetings have also been held with Adelaide City Council in relation to its plans to streetscape Gray Street

⁴ Transitional arrangements under the *Planning, Infrastructure and Development Act* may result in the newly created and constituted State Planning Commission replacing the DAC as the relevant authority during the proposal's assessment timeframe.

⁵ Adelaide Airport Limited in an email to MasterPlan dated 21 December 2016 advises that the development site has an OLS of RL 64.1 metres AHD



and in relation to waste storage and collection, and with Adelaide Airport Limited in relation to compliance with relevant OLS obligations and requirements.

7.2 The Relevant Planning Issues

The planning issues which are most relevant to an assessment of the proposal's merit are:

- (i) is the proposal an acceptable and envisaged land use type in the Capital City Zone;
- (ii) is the proposal consistent with the Desired Character sought for the Capital City Zone;
- (iii) is the proposal's building height acceptable having regard to the Zone's provisions and constraints imposed by Adelaide Airport's Obstacle Limitation Surface;
- (iv) Does the proposal exhibit high quality design;
- (v) has the building been appropriately setback from Gray Street, Albert Street and other site boundaries;
- (vi) is the proposal appropriately designed for the storage and collection of solid wastes and recyclables;
- (vii) has adequate provision been made for bicycle parking and pedestrian access into and past the site;
- (viii) will the proposal enhance the public realm;
- (ix) is the land suitable for the intended use given its past use for non-residential purposes;
- (x) will the building be appropriately designed to counter noise impacts from nearby sources in particular the adjacent Edinburgh Castle Hotel;
- (xi) has the proposal been appropriately designed in relation to Crime Prevention Through Urban Design (CPTED) principles; and
- (xii) is the proposal environmentally sustainable.

7.2.1 Acceptable and Envisaged Development in the Zone

Capital City Zone PDC 1 lists a number of *developments or combinations thereof* that are *envisaged*. Those uses include "*Student Accommodation*" and "*Shop or group of shops*".

The proposed building will be primarily used for student accommodation purposes. The two ground floor tenancies are expected to be occupied and used for retail purposes.



The proposal is also close to other student accommodation facilities in the same zone, including a high-rise accommodation building in Waymouth Street and the three storey apartments in Gray Street.

In all respects the proposal is an acceptable and envisaged form of development for the Capital City Zone.

7.2.2 Consistent with the Zone's Desired Character

The relevant provisions of the Capital City Zone's Desired Character Statement state:

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 lane-ways 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.

Since the proposal will contain 792 beds, it will inject 792 people onto a site which is currently not used for living purposes. It will therefore significantly increase the zone's *population* and assist in increasing its *vibrancy*.

The addition of so many people into this part of the CBD will furthermore assist in making the zone *active during the day, evening and late night*.

At 16 levels and 59 metres high, and with walls fronting Albert Street and Gray Street between 6.0 to 7.41 metres high, and those walls being angled, setback slightly from Gray Street and with glazed shopfronts, the Gray Street façade will help to create *an interesting pedestrian environment and human scale*. This frontage also includes frequent door openings and other design features.



Building levels 1 to 16 have been setback a greater distance from Gray Street and Albert Street to reinforce the podium effect and *to provide views to the sky and create a comfortable pedestrian environment.*

Relevantly, two tenancies will be created at ground floor level. These tenancies are expected to be taken up for *shop or café* purposes. Indeed, the entire ground floor level will be set aside for student relaxation, study, gymnasium, theatre, dining and other *non-residential* purposes. The entire ground floor space will be glazed and *well lit* and face directly onto Gray Street and Albert Street *to contribute to street vibrancy.*

The proposal is *contextual* in that it will be located in an area where there are other student accommodation facilities, and will positively address both street frontages with a well-defined podium. The immediate area is a mix of newer residential and student accommodation facilities, and established office, showroom and automotive service premises, and the Edinburgh Castle Hotel on the corner of Gray Street and Currie Street. These non-residential uses are nevertheless not incompatible with the proposed use of the land for student accommodation purposes, although it is reasonable to assume some of these uses will over time be redeveloped for uses envisaged in the zone.

The proposal has been designed by Brown Falconer to be *durable*, being fit for its intended use in accordance with Uni-Lodge's requirements and specifications, adaptable in that adjacent studio rooms can be easily joined and used as two bedroom apartments, and using long-term weather resistant external and internal materials of construction.

The design proposed by Hemisphere Design will deliver a substantial landscaped and enclosed courtyard for occupants' use which is integrated with the building design. This *inclusive* approach will deliver a quality open space for enjoyment, contemplation and relaxation, and one moreover which is secure and safe for occupants and visitors alike. It will be illuminated, allowing its use during the day and in the evening.

The building has been *sustainably* designed and sited so that as many windows as possible are accessible to sunlight, and with shading devices fitted to the western and eastern window walls to minimise direct sunlight penetration. Other sustainable features of the building are detailed in the Sustainability Management Plan prepared by Lucid Consulting Australia at **Appendix M**.

It is concluded that the proposal is consistent with the Zone's Desired Character.

7.2.3 Building Height

The building's height measured from ground level to the top of the lift over-run will be 59 metres. To roof top level it will be 55 metres.

The development site is in part of the Capital City where the maximum building height is 43 metres as detailed on Building Heights Concept Plan Figure CC/1.



The site is however close to the 53 metre building height area prescribed in the Development Plan, as shown in Figure 3 below:

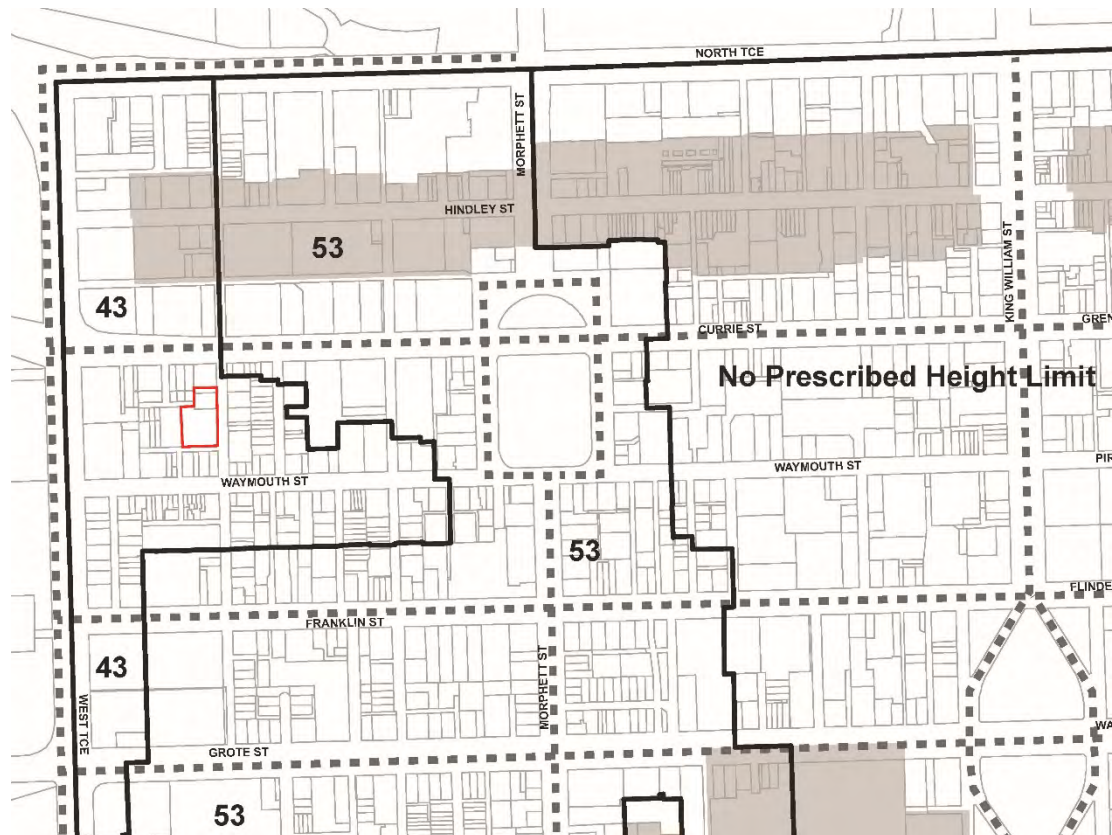


Figure 4: Building Heights, Capital City Zone

The building will be taller than all others in the surrounding area, but that is primarily as a consequence of amendments made to the Development Plan made in 2012 following the gazettal of Capital City Development Plan Amendment.⁶ The proposal is one of the first of its kind in the area following gazettal of that DPA.

Prior to the introduction of the Capital City DPA, the development site and surrounding properties were part of a Mixed Use Zone and West End Policy Area 19 of that zone, where the maximum building height was set at 17 metres “*within 8 metres of a minor street frontage*” (Mixed Use Zone Policy Area 19 PDC 5(c)). Along Waymouth Street, the maximum building height was set even lower at 13 metres (Mixed Use Zone, Policy Area 19 PDC 5(a)).

⁶ Capital City DPA (Ministerial). Gazetted 25 October 2012 following interim authorization on 28 March 2012.



The Capital City DPA was introduced primarily to create a development framework in the CBD as sought by the *30 Year Plan for Greater Adelaide*. The DPA's Executive Summary noted that:

Vibrant Adelaide is an exciting new State Government initiative that will unlock investment, boost the economy and revitalize our city. It builds on the momentum created through the redevelopment of the Riverbank Precinct, the upgrade of the Convention Centre, construction of the new Royal Adelaide Hospital and Adelaide Oval redevelopment.

In relation to building height, the DPA was critical of (what were then):

“... development plan policies relating to building heights [*that*] are varied and complex and need review to enable the revitalisation of a more intense and vibrant city core.”

The Minister's Capital City DPA also advocated an approach where compliance with constraints associated with Adelaide Airport's operational and safety requirements would prevail.

The proposal at 59 metres exceeds the 43 metre height limit specified on Figure CC/1 and is close to the 53 metre height limit in the adjacent area. Relevantly therefore, an aviation study of the building has been undertaken by aeronautical consultants Thompson GCS Pty Ltd, who have concluded that the proposed development “*will not restrict or pose a risk to aircraft operations. The development will also not impair the operation of radar systems or navigation aids*” (refer **Appendix H**).

Thompson GCS have subsequently formally applied to Adelaide Airport Limited on behalf of the applicant for permission to penetrate the Obstacle Limitation Surface. A separate application will be made for the building crane to penetrate the OLS.

The proposed development will furthermore be undertaken on a site comprising three allotments with a combined site area of 2,466 square metres.

Capital City Zone PDC 16 requires development that exceeds the maximum building heights shown on Concept Plan Figure CC/1, and which meets the relevant quantitative provisions, to “*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*”.

Site Configuration: following DRP feedback, the building was redesigned as a single “L” shaped structure addressing the Gray Street and Albert Street frontages, with a substantial landscaped courtyard behind the building that would be visible from Gray Street through glazed walls. The revised site configuration has superior solar properties, with most rooms receiving direct sunlight and the rear courtyard receiving sunlight throughout the year.



The site configuration also delivers an activated frontage to Gray Street, and the creation of a well-defined podium visible from both streets.

Desired Character of the Area: the building will assist in activating Gray Street by the provision of two retail tenancies facing onto this street, the main building entrance designed onto this street and an interesting, permeable façade. Furthermore, both street frontages have been designed to “*be active during the day, evening and night*”. The building ‘tower’ will also be setback a variable distance so that the ground floor level is comprised of “*walls that frame the streets*” and to create “*an interesting pedestrian environment and human scale.... through.... careful building articulation.... and frequent openings in building facades*”.

The podium will also permit pedestrians to have “*views to the sky and.... a comfortable building environment*”.

The ground floor consists of “*non-residential land uses a ground level that generates high levels of pedestrian activity such as shops....*” As well as common student areas that will be visible to the street.

Public Realm and Streetscape Contribution: the Gray Street façade has been designed in association with Council’s streetscape improvements along the western side of the road, as detailed at **Appendix D**. In addition, the telegraph poles and wires adjacent to the site will be undergrounded by the proponent, which will further complement Council’s streetscape initiative to enhance the public realm.

Capital City Zone PDC 21 is also relevant to a consideration of building height, and requires that at least two out of eight “features” are provided. The proposal will in fact deliver five features:

- (i) the development is next to the 53 metre height area, thereby meeting the transition test in PDC 21(1);
- (ii) a high quality, landscaped, safe and secure open space courtyard that is both accessible from and visible to the Gray Street public realm will be provided (PDC 21(3));
- (iii) the site has frontage to Gray Street, which is one of a number of north-south local roads identified by Council’s *Smart-move* pedestrian network initiative connecting North Terrace to Grote Street (PDC 21(4));
- (iv) no off street parking will be provided (PDC 21(5)); and
- (v) while student accommodation is not typically regarded as affordable housing, the proposal will deliver affordable accommodation to overseas and Australian students (PDC 21(8)).



Part (ii) of Zone Principle 21 concludes by stating that “*all of the following sustainable design measures [are to be] be provided*”. The proposal provides some but not all of these design measures: it delivers for example on the provision of innovative external shading devices on the west and east facing facades, creates over 23 percent of private open space at ground level and delivers access to natural light and ventilation to every room and common circulation areas. A roof top garden is not provided because of the provision of a generous amount of private open space at ground level that can be directly accessed from the common spaces at ground floor level. A green roof and green walls/facades are also not proposed given the nature of the development and the higher levels of maintenance required for these measures.

Importantly, the building includes a range of environmental features as detailed in the Sustainability Management Plan prepared by Lucid Consulting Australia at **Appendix M** to reduce energy and water consumption, reduce the building’s ecological footprint, improve thermal comfort and internal air quality and improve occupants’ well-being.

The development site is large, and is surrounded by sites and buildings in the same zone, thereby not bringing into consideration the zone’s interface provisions at Zone PDC’s 23, 24 and 25.

Finally, it is relevant to note that pre-lodgement consultation with the PLP and DRP determined that the proposal’s building height was acceptable – refer **Appendix E**.

7.2.4 High Quality Design

Council-wide Objective 9 (13) under the ‘Student Accommodation’ sub-heading calls for “*high quality student accommodation that creates an affordable, safe, healthy and comfortable living environment*”. Principles 10-13 under that heading acknowledge that student accommodation “*may provide reduced internal floor areas, car parking, storage areas and/or areas of private open space*”, provided certain criteria are met, namely:

- access to common or shared areas;
- every living room has a window to provide an external outlook and maximum natural light;
- easy adaption or reconfiguration for alternative use;
- access to natural ventilation and natural light;
- private open space in the form of balconies or communal open space which is accessible to all occupants; and
- an internal layout providing space and amenity for student life and social interaction.



These requirements were identified through the Design Review Panel and Pre-lodgement Panel consultation process, and the proposal was subsequently amended. What is now proposed will be an affordable student accommodation complex containing a selection of room configurations where every room has a window which provides good light and ventilation into each room.

The design is furthermore such that adjacent rooms – in whatever configuration – could in future be amalgamated and adapted for alternative use such as a single or two-bedroom apartments.

The design also includes breakout spaces and common living rooms on each level, as well as substantial common facilities at ground level including a lounge, gym, dining room, theatre, study rooms and games area.

The courtyard behind the building is spacious and easily accessible at ground floor level. It will offer safe and secure space and amenity for relaxation in an attractively landscaped setting for students, which will in turn enhance student life and social interaction.

Secure long term storage space is provided in a large room at ground level adjacent Albert Street PDC 12).

Each student room has been designed to accommodate a bed, book shelf, desk and workspace, and a cupboard wardrobe. Detailed layouts and images showing the configuration of each room type are shown on Drawing DA11 (PDC 13).

Council-wide Objectives 22 and Principles 48-81 under the heading 'Medium to High Scale Residential/ Serviced Apartments' are also relevant, as these provisions also apply to student accommodation. Without addressing each provision, it will be noted that the building proposal:

- has the main building entrance oriented towards and will be clearly visible from Gray Street (PDC 48);
- the building entrance is close to and directly visible to the lifts (PDC 49);
- as previously noted, every room will have access to natural daylight and natural ventilation (PDC 50);
- the L-shaped design of the building will ensure that some rooms have solar access to the northern façade, acknowledging however that the building is required to address Gray Street (east) and Albert Street (south). PDC 51 is satisfied to the extent possible, having regard to the site's shape and primary street frontage;
- light wells will not be used as the primary source of daylight to living rooms (PDC 55);
- the private open space at ground level will receive generous amounts of sunlight, including at the winter solstice when the majority of this space will receive more than two hours of sunlight (PDC's 56 and 57);



- the proposal does not provide private open space on a 'per studio' basis. Instead, open space is provided in the form of common areas on each level, and at ground level in the generously proportioned and landscaped private courtyard (PDC 59);
- a roof top garden is not proposed, nor is it necessary as there will be a well-designed and conveniently accessible private courtyard at ground level (PDC 65);
- each studio room will be setback from site boundaries by more than 3.0 metres, except for Rooms 2 and 3 on every level which are adjacent to Albert Street, which is 6.0 metres wide to ensure that privacy, amenity and the outlook from these rooms is not compromised (PDC 67);
- the accompanying acoustic report by Sonus (**Appendix F**) contains recommendations to ensure that each studio room will not be adversely affected by external noise from the adjacent hotel or mechanical repair workshop (PDC 68);
- every studio room, as well as the common living rooms on each level will have a satisfactory external outlook. This will not involve the use of lightwells or sky lights (PDC's 73 and 74);
- no on-site parking is proposed as it is not required for this kind of development (PDC's 75-79); and
- a generously proportioned room for storage purposes will be located at ground floor level (PDC's 80 and 81).

Finally, the proposal will reinforce the grid layout of the City by delivering an intense building form into the Capital City Zone, and orienting the building square to both street frontages, with subtle variations to the eastern face of the tower for design interest (PDC 168).

The building's height, scale and massing will furthermore reinforce the Zone's Desired Character (see above), and will achieve a "*comfortable proportion of human scale*" at Gray Street level by a variety of design techniques including indented glazed facades and openings onto Gray Street, two retail tenancies for added activation and vibrancy, and undergrounding of telegraph poles and wires (PDC 170).

7.2.5 Building Setbacks

As noted, the western and northern facades of the building will be setback not less than 3.0 metres from the respective boundaries.

The building will furthermore be sited onto the Albert Street and Gray Street boundaries at footpath level in accordance with Zone Principles 9 and 11 in order to "*provide direct pedestrian access and street level activation*", and where these facades will be positioned "*regularly on the site and built to the street frontage*".



The building's podium has been redesigned in accordance with the recommendation of the Design Review Panel to ensure consistency with Zone PDC 12. The podium/street wall height will align with both street frontages (other than minor indents along Gray Street for interest and to increase footpath width) while the upper level tower will be setback between 7.105 metres (Gray Street/Albert Street corner) and 4.645 metres along Gray Street, and 6.0 metres from Albert Street. These setback distances will ensure that the podium will:

- have a human scale at street level;
- create a well-designed and continuous street frontage along Gray Street;
- emphasis the Gray Street/Albert Street corner;
- contribute to the vitality and security of the pedestrian environment along both street frontages;
- maintain openness to the sky; and
- achieve pedestrian comfort by minimising micro climatic impacts (see Section 7.2.12 below).

It is concluded that the proposal at ground level and at all upper levels is appropriately setback from Gray Street, Albert Street and the western and northern site boundaries.

7.2.6 Waste and Recyclable Storage and Collection

All wastes, and recyclable materials will be stored at ground floor level in the Bin room. From there, the bins will be wheeled out through a roller door to the northern side driveway for on-site collection by a private waste collection service.

The proposal's waste storage and collection system has been designed in consultation with Adelaide City Council, and is described in further detail in the Waste Management Plan prepared by Rawtec Pty Ltd at **Appendix K**⁷, and the Waste Collection Access Review prepared by GTA Consultants at **Appendix J**.⁸

The waste management system, and the associated commercial vehicle loading, ingress and egress arrangements to service the waste management system via Gray Street, will satisfy the relevant provisions of the Development Plan, especially Council-wide Objective 28 and PDC's 101, 102, 103 and 104 (Waste Management) and Council-wide Objectives 60 and 70, and PDC's 224, 241 and 242.

⁷ Gray Street Development Waste Management Report. Rawtec Pty Ltd [July 2017].

⁸ Waste Collection Areas Review. GTA Consultants [letter dated 7 July 2017].



As GTA Consultants notes in its summary, “*the anticipated daily frequency of 3 to 5 collections per day will have minimal impact on Gray Street*”, and that the waste collection truck at Medium Rigid Vehicle size “*will be able to reverse into the proposed lane at the northern end of the site to collect bins, and then exit in a forward direction to Gray Street*”.

We are satisfied that the proposal makes adequate and appropriate provision for the management and collection of waste materials in accordance with the relevant provisions of the Development Plan.

7.2.7 Bicycle Parking and Pedestrian Movement

The Development Plan at Table Adel/6 – Bicycle Parking Provisions does not list student accommodation. Similarly, the Capital City Zone is silent with respect to the provision of bicycle parking.

It is nevertheless proposed to provide secure bicycle parking in two areas – one on the western side of the site between Albert Street and the private courtyard (35 spaces) and a bicycle parking rack near the building entrance for visitors (six bicycles).

The demand for bicycles is unknown but is likely to be low, given the site’s proximity to educational and health facilities, Rundle Mall and Adelaide Central Market, and its accessibility to other parts of the CBD and the metropolitan area either on foot or by public transport.

Nevertheless, it is noted that Gray Street is identified as an Important Secondary Route for bicycles on Bicycle Network Map Adel/1 (Overlay 3).

Having regard to these considerations, we are satisfied that the proposal is provided with an “*adequate supply of on-site secure bicycle parking... to meet the demand generated by the development within the site area of the development*” (Council-wide PDC 234).

The facilities provided for bicycle parking have also been appropriately located for long stay and short stay purposes in accordance with Council-wide PDC’s 235 and 236.

Pedestrian movement to and from the proposed development will be via Gray Street. Street lighting along the western side illuminates Gray Street, and following the undergrounding of power supplies it will be necessary to reinstate street lighting for the safety and security of pedestrians. The design and location of replacement street lighting will be determined in association with SAPN and the City of Adelaide.

It is also relevant to note Council’s plans to improve Gray Street as part of its ‘Smart-move’ initiative. This is likely to result in further improvements being made to Gray Street to improve the permeability of the pedestrian network in the north-western quadrant of the CBD.



It is concluded that the proposal has made adequate and appropriate provision for the needs of cyclists and pedestrians in accordance with Council-wide Objective 65 and PDC's 233-237 (bicycle access) and Objectives 61, 62 and 63 and PDC's 228, 229 and 232 (transport).

7.2.8 The Public Realm

The Development Plan requires development to demonstrate a significantly higher standard of design outcome for public realm and streetscape contribution where the development “*significantly exceeds quantitative policy provisions*” (PDC 167). Council-wide PDC 179 also requires development in the Capital City Zone to be built to the street edge “*to provide definition and inclusive to the public realm*”. Council-wide PDC 196 and the associated Design Technique also requires development to be designed “*to create active street frontages that... contribute to the liveliness, vitality and security of the public realm*”.

The proposal has been designed to take account of and reflect imminent streetscape improvement works to Gray Street which are about to be carried out by Adelaide City Council – refer to **Appendix D**. In addition, it is proposed to underground the power poles and wires on the western side of the site, to further improve overall amenity for street users and residents, and to facilitate safer pedestrian movement.

The building's ground floor setback will also allow for widening of the footpath, to which will benefit building occupants and pedestrians generally.

Overall, the proposal is expected to significantly enhance the public realm.

7.2.9 Site Suitability

The site has been most recently used for office warehouse purposes, and prior to that for various other industrial and commercial purposes, A.M. Environmental Consulting Pty Ltd were engaged to compile a Site History Report of the site, and its findings are at **Appendix I**. The Site History Report satisfies Note (a) at the foot of Council-wide Principle 105.

It will be noted that the Site History Report describes follow-up soil and groundwater investigations that are being undertaken, consistent with Note (b) at the foot of Principle 105. As of the date of this Planning Report, the results of those soil and groundwater investigations had not been received. When they become available, A.M. Environmental will prepare a supplementary report for the DAC's consideration.

While there is a high level of confidence that the site is suitable or can be made suitable for its intended use, this conclusion cannot yet be made until the results of the soil and groundwater investigations have been analysed.



Accordingly, it is not yet possible to state that “*the land, buildings and/or water can be made suitable for its intended use prior to commencement of that use*” (Council-wide PDC 105).

7.2.10 Noise Impacts

The development site adjoins the Edinburgh Castle Hotel and beer garden, and the motor repair workshop of Rowell and Searle to the west. Given the potential for these adjacent land uses to generate noise, Sonus Acoustics were engaged to undertake an Environmental Noise Assessment at **Appendix F**.⁹

Sonus has concluded that the proposed development’s external noise sources will come from amplified music and patrons at the Edinburgh Castle Hotel, activity at Rowell and Searle’s workshop, and traffic noise from surrounding roads. The main noise sources from the proposed development will come from the building’s mechanical services plant and equipment.

Sonus have assessed these noise sources against the relevant provisions of the Development Plan, namely Council-wide Objectives 9, 22, 26 and 27 and Council-wide Principles 68, 89, 93, 95, 96 and 97. Other recognised standards were also specified and considered as part of Sonus’ assessment.

Having regard to the relevant Development Plan provisions and associated standards, Sonus have listed façade treatment recommendations to satisfy the acoustic requirements of the Development Plan.

Having regard to Sonus’ findings and recommendations, it is concluded that the proposal will be protected from noise sources in the vicinity, and that the relevant provisions of the Development Plan will be satisfied.

7.2.11 Crime Prevention Through Urban Design

Council-wide Objective 24 and PDC’s 82, 83, 84, 85 and 86 are relevant to this topic. Among other things these provisions encourage a safe and secure, crime resistant urban environment that facilitate natural surveillance, promotes building and site security, and promotes clear lines of sight and appropriate lighting.

The proposal has been carefully designed with these considerations in mind. Importantly, the building will be sited onto and will have common space at ground level fronting onto Gray Street with a high proportion of glazing at ground level to allow surveillance into Gray Street and Albert Street. The two tenancies will have shop front glazing and doors facing directly onto Gray Street. The main building entrance will furthermore be directly from Gray Street into the building’s illuminated common areas, and directly to the lifts where that

⁹ Environmental Noise Assessment – Report S5265C2. Sonus Pty Ltd. [July 2017].



route will be visible to the street. All of this ground floor space, the entrance itself and the rear courtyard, will be illuminated for added safety.

The new courtyard will also be fenced for safety and security purposes. It will be accessible only from within the building, with a lockable gate to Queen Street to prevent unauthorised access from this direction.

The building's interface with the street facades is furthermore 'open' in that there are no hiding spots.

The side service lane will be secured with a gate across the Gray Street entrance and a fence to separate the rear arm of the driveway from the courtyard. These measures will prevent unauthorised access and prevent access to the rear courtyard via this route. The service lane will also be fitted with movement activated lighting to further discourage unauthorised after-hours access.

Rooms will face either Gray Street or Albert Street to provide an additional means of casual surveillance into the public realm.

The injection of up to 792 people onto this site, and into this area, together with the provision of two tenancies at ground level, will furthermore add to Gray Street's vibrancy and introduce a complementary mix of day and night-time activities into the street, and which in turn will extend the duration and level of intensity and public activity in this section of Gray Street.

Council's plans to improve the physical appearance and pedestrian/cycling role of Gray Street is likely to inject other users into the street during the day and night. This measure is expected to generate additional use of the street by day and night, and in turn improve natural surveillance of this public realm.

In all relevant respects the proposal's design and siting is adequate and appropriate in relation to the Crime Prevention Urban Design provisions of the Development Plan.

7.2.12 Microclimatic Impacts

It was recommended at the Pre-lodgement Panel meeting held on 12 April 2017 that the height of the building warranted the preparation of a desk-top study on wind impacts.

Vipac Engineers were subsequently engaged for this purpose. Their Wind Impact Statement is at **Appendix L**.¹⁰

Vipac predicts that the proposed design may alter wind conditions in adjacent ground level areas, but it does not predict any exceedance of variously recommended comfort criteria. Accordingly, Vipac does not consider that any design alterations are necessary.

¹⁰ Wind Impact Statement: Vipac Engineers and Scientists. [7 July 2017].



Based on Vipac's findings, it is considered that the proposal will either satisfy, or not conflict with Council-wide Objectives 33 and 34, and PDC's 119, 123 and 125 and associated Design Technique 125.1 which suggests the use of "*a podium built at the base of a tall tower and aligned with the street to deflect wind away from the street*".

7.2.13 Environmental Sustainability

A sustainability Management Plan has been prepared by Lucid Consulting Australia **Appendix M**.¹¹ Lucid's report lists the Ecologically Sustainable Design initiatives for the proposed building at Section 1.3, and goes on to discuss the proposal's primary ESD features:

- the building's efficient thermal envelope;
- thermal mass;
- solar control;
- water efficiency; and
- sustainable transport.

Having regard to Lucid's investigations, it can be concluded that the proposal has been well designed with respect to the Development Plan's energy efficiency provisions at Council-wide Objective 30 and PDC's 106 (and associated Design Techniques), 107, 108 (and associated Design Techniques) and 111 (and associated Design Technique).

¹¹ Sustainability Management Plan Revision B. Lucid Consulting Australia. [July 2017].



8.0 CONCLUSIONS

It is concluded that the proposed development of an integrated student accommodation building with associated common facilities and amenities at 89 – 109 Gray Street Adelaide will wholly or substantially comply with the relevant provisions of the Adelaide (City) Development Plan.

Specifically, the proposed development:

- (i) is an envisaged kind of development in the Capital City Zone;
- (ii) is ideally located in relation to nearby tertiary institutions and medical research facilities;
- (iii) is within safe and convenient walking distance of Rundle Mall, Adelaide Central Market and other CBD services and facilities;
- (iv) is within safe and convenient walking distance of buses, trains and trams;
- (v) has been designed to a high standard in accordance with the recently introduced Capital City Policy Review (Design Quality) DPA which came into effect on 30 May 2017;
- (vi) is consistent with the Desired Character sought for the zone;
- (vii) will assist in activating Gray Street by injecting substantial numbers of people into the area by day and night;
- (viii) will complement streetscape improvements about to be made to the Gray Street's public realm by Adelaide City Council;
- (ix) will be acceptable in relation to its overall height having regard to the findings of the Airspace Impact Assessment prepared by Thompson GCS Pty Ltd;
- (x) incorporates appropriate waste management and access arrangements in accordance with the requirements of Adelaide City Council;
- (xi) is well designed in relation to micro-climatic impacts;
- (xii) is well designed in relation to the Development Plan's Crime Prevention Through Urban Design provisions; and
- (xiii) incorporates environmentally sustainable design measures as encouraged by the Development Plan.



Further soil and groundwater assessment is in progress, and the results of these investigations will be forwarded when they are available. However, the nature of the proposal development provides confidence that the site either is or can be made suitable for its intended use prior to commencement of that use.

We conclude that the proposal is deserving of Development Plan Consent.

Graham Burns FPIA
B/A in Planning

10 July 2017



APPENDIX B

Design Statement			
Project	Wee Hur Student Housing	Date	27/06/2017
Prepared for	Development Assessment Commission	Job No	2017020

Introduction

The proposed development at 89-109 Gray Street is a high density mixed use student housing facility.

The mixed-use nature of the development includes outward facing retail tenancy opportunities at ground level facing Gray Street, which would serve the student population as well as the broader community and activate at street level.

The site is very well located for a development of this type, with proximity to the University of South Australia City West campus, TAFE SA Adelaide City Campus and North Terrace medical precinct, as well as good connection on foot, bus and tram to the Adelaide Central Market food and culture precinct.

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.

The project has been through an initial Design Review, conducted by the Office for Design and Architecture, and has been significantly amended in response to the Associate Government Architect's letter dated 31 May 2017. To attempt to meet timeframes to open for the 2019 academic year, the project is unable to programme a second Design Review prior to lodgement for Development Plan Consent. However, this timeframe was noted in the initial review and the response provided was detailed to facilitate clear potential to deliver design alterations. Our design statement is structured to note the original proposal and commentary and then the positive iteration which is reflected in the proposal now lodged.

Massing and Arrangement

The previously reviewed scheme consisted of two separate towers to be staged in construction. The Design Review raised concerns about ground level and student room amenity, particularly of stage 2 as a result of 'constant over shadowing of stage 1'. The Design Review also suggested reconsideration of the student courtyard area with regard to security and privacy for students.

The proposal now lodged exhibits a fundamental re-think of site planning to offer a single stage development, with an L-shaped massing surrounding a central courtyard. Direct solar access is now afforded to the majority of rooms, with high quality extended access to student outdoor and communal areas at ground level. The student outdoor space is provided with controllable visual connection through the ground floor to Gray Street, but will now function as a private and secured space for student use.

Heights and Setback

The previously reviewed scheme consisted of 18 levels at 55m excluding lift overrun. The additional height in the zone was supported in the initial Design Review, subject to design resolution. The scheme did offer a language of podium base with tower above and introduced some setback at ground level to increase amenity from the narrow footpath. The Design Review supported the ground level setback but suggested that tower relief from the podium was not sufficient and suggested a setback in the order of 3-6m which was drafted in the Associate Government Architect's letter.

The currently lodged scheme is of the same height; however, the articulation of the podium has been strengthened and the setback to the tower element has been significantly increased. This tower setback of between 3.2m to 7.1m, achieves the desire to separate the mass of the tower from the ground level experience.

Materials and Façade

The previously reviewed scheme comprised a façade materiality of ribbed precast panels, with perforated windows to reference the penetrated masonry typology of many of the buildings in the Adelaide CBD. The podium level was conceived in unitised masonry to reference the immediate environs and introduce a human scale articulation. The general direction of the design approach was supported by the initial Design Review, but sought greater break down of the mass of the buildings.

The lodged scheme maintains the same supported approach, but has also introduced a window wall component to significantly modulate the façade into separable elements and to further articulate the mass and the bulk.

The window placements have been further resolved internally and in external presentation. Shading elements have also been introduced particularly to the western and eastern facades to address site specific environmental conditions and context.

Internal Planning

The previously reviewed scheme included studio and cluster room arrangements with all common areas at ground and first floor level. These arrangements were in line with operator preferences to consolidate communal activities. The initial Design Review raised concerns about the singular focus of communal spaces, the functionality of rooms given their compact dimensions, and solar access.

The lodged proposal has addressed all these items.

Communal spaces remain focused at the ground level however break out areas have been introduced at higher levels dispersed through the building. The application drawing set includes furniture layouts of selected room types to demonstrate how these rooms are furnished and operate in other existing developments completed by the proponent. The fundamental site rearrangement has significantly improved solar access for bedrooms and common areas, throughout the entire building complex.

Summary

The application as lodged for Development Plan Consent demonstrates a high quality, well-articulated student housing proposal with the ability to significantly activate the Gray Street precinct particularly at ground level and with strong public interface.

The proponent has embraced the Design Review process, with significant and progressive alterations to the scheme in direct response to feedback received from the Associate Government Architect. The proposed development is a well-considered and positive contributor to the City of Adelaide.



APPENDIX F

Student Housing Development

89 – 109 Gray Street, Adelaide

Environmental Noise Assessment

S5265C2

July 2017

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Document Title : Student Housing Development – 89-109 Gray Street, Adelaide
Environmental Noise Assessment

Document Reference : S5265C2

Date : July 2017

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Reviewer : Jason Turner, MAAS

TABLE OF CONTENTS

1	INTRODUCTION.....	3
2	DEVELOPMENT PLAN	4
3	ASSESSMENT CRITERIA.....	6
3.1	Noise Ingress to the Development.....	6
3.1.1	World Health Organisation Guidelines	6
3.1.2	Australian Standard AS 2107	6
3.1.3	Music Noise	7
3.1.4	Minister’s Specification SA 78B	7
3.1.5	Summary of Assessment Criteria for Noise Ingress.....	8
3.2	Noise from the Development.....	9
4	ASSESSMENT.....	10
4.1	Noise Ingress to the Development.....	10
4.1.1	Noise from the adjacent Licensed Venue	10
4.1.2	Noise from the adjacent Workshop.....	11
4.1.3	Noise from Traffic.....	11
4.1.4	Recommended Acoustic Treatment	11
4.2	Noise from the Development.....	13
5	CONCLUSION	14

1 INTRODUCTION

An environmental noise assessment has been conducted of the proposed student housing development at 89 – 109 Gray Street, Adelaide.

The assessment considers the following noise sources:

- patrons and music at the adjacent licensed venue (i.e., Edinburgh Castle Hotel);
- activity at the adjacent mechanical workshop (i.e., Rowell and Searle);
- traffic and street activity on surrounding roads; and,
- mechanical plant and equipment at the proposed development.

The assessment has been based on:

- Brown Falconer plan and elevations drawings “DR03” through “DR07” (inclusive), 20170621 DRP Updated Set;
- a site inspection of the existing premises and surrounding area on 10 May 2017;
- continuous noise measurements conducted at the existing site from 24 to 31 May 2017;
- the Edinburgh Castle Hotel Licence 50101393, dated 5 November 2014; and,
- previous noise measurements of:
 - activity at a mechanical workshop similar to the adjacent Rowell and Searle workshop; and,
 - patrons at other licensed venues.

The key environmental noise issue for the site is the impact of the Edinburgh Castle Hotel on the amenity of the development. Specific and detailed facade acoustic treatments are recommended in this report to address the impact. Acoustic treatments are also recommended to ensure that the noise intrusion from patrons at the hotel; activity at the workshop; and traffic on surrounding roads are appropriately addressed.

In addition, a preliminary assessment of the environmental noise from mechanical plant operating at the proposed development has been conducted.

2 DEVELOPMENT PLAN

The subject site is located within a Capital City Zone of the City of Adelaide Development Plan (consolidated 20 June 2017). The Development Plan has been reviewed and particular regard has been given to the following Council Wide provisions:

OBJECTIVES

- Objective 9: High-quality student accommodation that creates an affordable, safe, healthy and comfortable living environment.*
- Objective 22: Medium to high scale residential (including student accommodation) or serviced apartment development that:*
- (a) has a high standard of amenity and environmental performance;*
 - ...
- 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

- 68. Medium to high scale residential or serviced apartment development close to high noise sources (e.g. major roads, established places of entertainment and centres of activity) should be designed to locate noise sensitive rooms and private open space away from noise sources, or be protected by appropriate shielding techniques.*
- 89. 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.*
- 93. Mechanical plant or equipment should be designed, sited and screened to minimise noise impact on adjacent premises or properties. The noise level associated with the combined operation of plant and equipment such as air conditioning, ventilation and refrigeration systems when assessed at the nearest existing or envisaged noise sensitive location in or adjacent to the site should not exceed*
- (a) 55 dB(A) during daytime (7.00am to 10.00pm) and 45 dB(A) during night time (10.00pm to 7.00am) when measured and adjusted in accordance with the relevant environmental noise legislation except where it can be demonstrated that a high background noise exists.*
 - ...
- 95. Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise sources such as major transport corridors (road, rail, tram and aircraft), commercial*

centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.

96. *Noise sensitive development in mixed use areas should not unreasonably interfere with the operation of surrounding non-residential uses that generate noise levels that are commensurate with the envisaged amenity of the locality.*
97. *Noise sensitive development adjacent to noise sources should include noise attenuation measures to achieve the following:*
- (a) satisfaction of the sleep disturbance criteria in the bedrooms or sleeping areas of the development as defined by the limits recommended by the World Health Organisation;*
 - (b) the maximum satisfactory levels in any habitable room for development near major roads, as provided in the Australian/New Zealand Standard AS/NZS 2107:2000 - 'Acoustics - Recommended Design Sound Levels and Reverberation Times for Building Interiors'; and*
 - (c) noise level in any bedroom, when exposed to music noise (L_{10}) from existing entertainment premises, being:*
 - (i) less than 8 dB above the level of background noise ($L_{90,15 \text{ min}}$) in any octave band of the sound spectrum; and*
 - (ii) less than 5 dB(A) above the level of background noise ($L_{A90,15 \text{ min}}$) for the overall (sum of all octave bands) A-weighted levels.*

Background noise within the habitable room can be taken to be that expected in a typical residential/apartment development of the type proposed, that is inclusive of internal noise sources such as air conditioning systems, refrigerators and the like as deemed appropriate.

3 ASSESSMENT CRITERIA

3.1 Noise Ingress to the Development

The noise sources with the potential to impact upon the development are amplified music and patrons at the adjacent Edinburgh Castle Hotel, the activity at the adjacent mechanical workshop to the west, and traffic and street activity on surrounding roads.

In relation to the appropriate criteria for the intrusion of noise into a housing development, the assessment considers the relevant provisions of the Adelaide City Council Development Plan which refer to the recommendations of the Australian Standard *AS 2107:2000 – Acoustics – Recommended design sound levels and reverberation times for building interiors*¹ and the World Health Organisation Guidelines with respect to sleep disturbance; and include music noise criteria based on the EPA Music Noise Guidelines. The assessment also considers the Minister’s Specification *SA 78B Construction requirements for the control of external sound* to provide a contemporary approach.

3.1.1 World Health Organisation Guidelines

Council Wide Principle of Development Control (CWPDC) 97(a) refers to the objective recommendations of the World Health Organisation for sleep disturbance.

The World Health Organisation (WHO) has developed guidelines for community noise in specific environments. To protect against the potential onset of sleep disturbance effects in bedrooms, the WHO suggests a long term goal noise level of 30 dB(A) L_{eq} .

3.1.2 Australian Standard AS 2107

CWPDC 97(b) makes particular mention of Australian Standard *AS 2107:2000 – Acoustics – Recommended design sound levels and reverberation times for building interiors* (AS 2107).

AS 2107 provides recommended internal noise levels for different types of building occupancies and activities. Table 1 details the recommended internal noise levels for different types of occupancies in a residential building environment. A reception and administration area is proposed for the ground floor and therefore is also included in the table.

¹ AS 2107 was updated in 2016. The 2016 version of AS 2107 has been used for this assessment.

Table 1: Recommended noise levels of AS2107.

Type of Occupancy/Activity	Recommended Design Sound Levels (dB(A))
Sleeping areas	35 to 40
Common areas	40 to 45
Kitchen and service areas	45 to 55
Reception and admin	40 to 45

3.1.3 Music Noise

CWPDC 97(c) provides specific objective criteria relating to the ingress of external music noise such that music ($L_{10,15min}$) in a bedroom should be less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band, and less than 5 dB(A) above the overall background noise ($L_{A90,15min}$) level. As for the WHO recommendations of CWPDC 98(a), the music noise ingress requirements are onerous as they are designed for a new music venue being developed adjacent existing residences.

3.1.4 Minister’s Specification SA 78B

The intent of Minister’s Specification *SA 78B Construction requirements for the control of external sound* (SA 78B) is to protect the occupants of residential buildings from the sound intrusion of transport corridors and from mixed use activity. To this end, SA 78B establishes internal noise levels or “performance requirements”.

The objective assessment criteria applied to the development for internal noise levels are detailed in Table 2, which have been extracted from SA 78B.

Table 2: Noise criteria provided by SA 78B for transport corridors.

Type of room	Internal Sound Criteria		Applicable time period
	Average for total number of rooms	Maximum for individual room	
Bedroom	30 dB(A) $L_{Aeq, 9hr}$ (transport) 30 dB(A) $L_{Aeq, 15min}$ (people)	35 dB(A) $L_{Aeq, 9hr}$ (transport) 35 dB(A) $L_{Aeq, 15min}$ (people)	Night (10pm to 7am)
Other habitable room	35 dB(A) $L_{Aeq, 15hr}$	40 dB(A) $L_{Aeq, 15hr}$	Day (7am to 10pm)

For a particular site, the need to comply with SA 78B is established by “designation” in the Development Plan. The subject site has not been designated in the Development Plan and therefore SA 78B does not strictly apply but has been considered to provide the most contemporary approach. For the consideration of music noise ingress, SA 78B refers to the relevant council or Environment Protection Authority for appropriate requirements.

3.1.5 Summary of Assessment Criteria for Noise Ingress

Based on the above, the following criteria are adopted for external noise intrusion into the proposed student housing development:

Noise from hotel patrons, workshop activity and traffic:

- an average noise level (L_{Aeq}) of 30 dB(A) across the total number of bedrooms and a maximum of 35 dB(A) for any bedroom;
- an average noise level of 35 dB(A) across the total number of living room or common areas and a maximum of 40 dB(A) in any living room or common area;
- a noise level of 45 dB(A) in the reception and admin area; and,
- a noise level of 55 dB(A) L_{Aeq} in kitchen and service areas.

Noise from music:

- the requirements of CWPDC 98 (c), such that music ($L_{10,15min}$) in a bedroom is less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band, and less than 5 dB above the overall background noise ($L_{90,15min}$) level, when accounting for the influence of the room air conditioning system on the background noise levels. The following minimum background noise levels have been considered on the basis of the external windows are closed and a wall mounted air conditioning is operated:

Octave Band Centre Frequency (Hz)	Minimum Background Noise Level ($L_{A90, 15}$) dB(A)
63	13
125	21
250	28
500	34
1000	31
2000	27
4000	19
Overall Sum	37

3.2 Noise from the Development

Potential noise sources at the development are plant and equipment associated with the mechanical services system. Objective criteria have been considered for the design of the mechanical services system in order to prevent adverse impacts at the existing surrounding dwellings.

CWPDC 93 of the City of Adelaide Development Plan provides the relevant objective criteria for noise from mechanical plant and equipment at the development, which are as follows:

- 55 dB(A) L_{Aeq} during the daytime (7am to 10pm); and,
- 45 dB(A) L_{Aeq} during the night-time (10pm to 7am).

The criteria are to be achieved with the noise measured and adjusted at the nearest existing noise-sensitive land use in accordance with the *Environment Protection (Noise) Policy 2007*.

4 ASSESSMENT

The facade design of the proposed building generally consists of pre-cast concrete walls and some extent of glazing. The orientation and construction of the building facade minimises the level of noise intrusion into bedrooms and living spaces.

Notwithstanding, given the proximity of the adjacent licensed venue (Edinburgh Castle Hotel); the mechanical workshop; and the surrounding roads, specific acoustic treatment will be required in order to satisfy the relevant provisions of the Development Plan.

The designated location for mechanical plant on top of the roof provides shielding and a good separation distance between the plant and surrounding existing dwellings. A preliminary assessment has been conducted to determine whether the established noise criteria can be practicably achieved during the detailed design stage of the mechanical services system.

4.1 Noise Ingress to the Development

4.1.1 Noise from the adjacent Licensed Venue

Noise from the Edinburgh Castle Hotel is mainly associated with patrons in the rear outdoor area, and amplified music played at the hotel, including live performances. The noise at the proposed development from these components has been predicted and the acoustic requirements to achieve the relevant assessment criteria have been determined.

Music Noise

The Edinburgh Castle Hotel currently has an entertainment consent condition that limits music levels at the nearest noise sensitive location to being no greater than 8 dB(A) above the level of background noise in any octave band.

To determine the current allowable music levels from the hotel which meet their consent conditions, continuous background noise monitoring was conducted from 24 to 31 May 2017 at a location on-site that is representative of the nearest existing noise sensitive location. The derived allowable music levels were used to determine the extent of acoustic treatment at the development. The highest music levels on the external facade of the developed which were considered in the assessment are provided below:

Music Level, L _{10,15} (dB(A)) by Octave Band Centre Frequency (Hz)							Total Music Level, dB(A)
63	125	250	500	1000	2000	4000	
41	49	54	60	64	63	51	68

With music at this level, the hotel would be at the limit of its current licence requirement. Therefore, if the development is designed to protect against this level, there will be no additional impost on the hotel.

Patron Noise

The rear outdoor area (designated Area 3 in the Hotel Licence) at the Edinburgh Castle Hotel is currently allowed to have up to 230 patrons. The noise at the proposed site from this maximum allowable number of patrons has been predicted based on previous noise measurements conducted at other similar licensed venues.

4.1.2 Noise from the adjacent Workshop

The Rowell and Searle workshop building to the west is oriented such that the door openings are facing north and south, which therefore minimises the direct noise transfer to the development.

Predictions of the noise from activity inside the workshop to the development were conducted based on previous noise measurements taken at a similar workshop, which had an internal noise level of 63 dB(A). Noise from the six evaporative cooling units on the roof of the workshop was also considered in the prediction, with each unit having a sound power level of 80 dB(A).

4.1.3 Noise from Traffic

Noise from traffic on surrounding roads (Gray Street, Currie Street, Waymouth Street, etc) was determined based on the measured existing noise levels at site. Consideration was also made to the recommendation of SA78B in regard to addressing noise from roads.

4.1.4 Recommended Acoustic Treatment

The extent of acoustic treatment required varies with the size and type of the facade element into bedrooms, the orientation of the façade, the size of bedrooms and the type of air conditioning system.

To achieve the requirements of the Development Plan with regards to noise ingress to the development (CWPDCs 95, 96 and 97), the acoustic treatment for glazing elements provided in Table 3 is required. The unit designated in Table 3 are indicated on Figure 1. The extent of acoustic treatment assumes that all external wall construction is a minimum 125mm thick pre-cast concrete.

Table 3: Required acoustic treatment.

Type	Unit	Floor Level	Required Treatment to Glazing	
All			Airtight seal on all sides of windows when closed.	
Bedroom	23	1F	Eastern facade Minimum 10.38mm laminated glass.	Northern facade No glazing proposed.
		2F	Eastern facade Minimum 10.38mm laminated glass.	Northern facade Double glazed construction consisting of 12.38mm laminated glass and 10.38mm laminated glass, separated by a minimum 16mm air gap.
		3F to 7F	Eastern facade Minimum 10.38mm laminated glass.	Northern facade Double glazed construction consisting of 6.38mm laminated glass and 10mm glass, separated by a minimum 16mm air gap.
		8F and above	Eastern facade Minimum 10.38mm laminated glass.	Northern facade Minimum 10.38mm laminated glass.
	24, 25	1F to 9F	Minimum 10.38mm laminated glass.	
	27 to 37	All	Minimum 10.38mm laminated glass.	
	10 to 16	All	Minimum 10.38mm laminated glass.	
	Others		6.38mm thick laminated	
All other spaces (Common, kitchen and dining, reception admin)			Standard construction.	

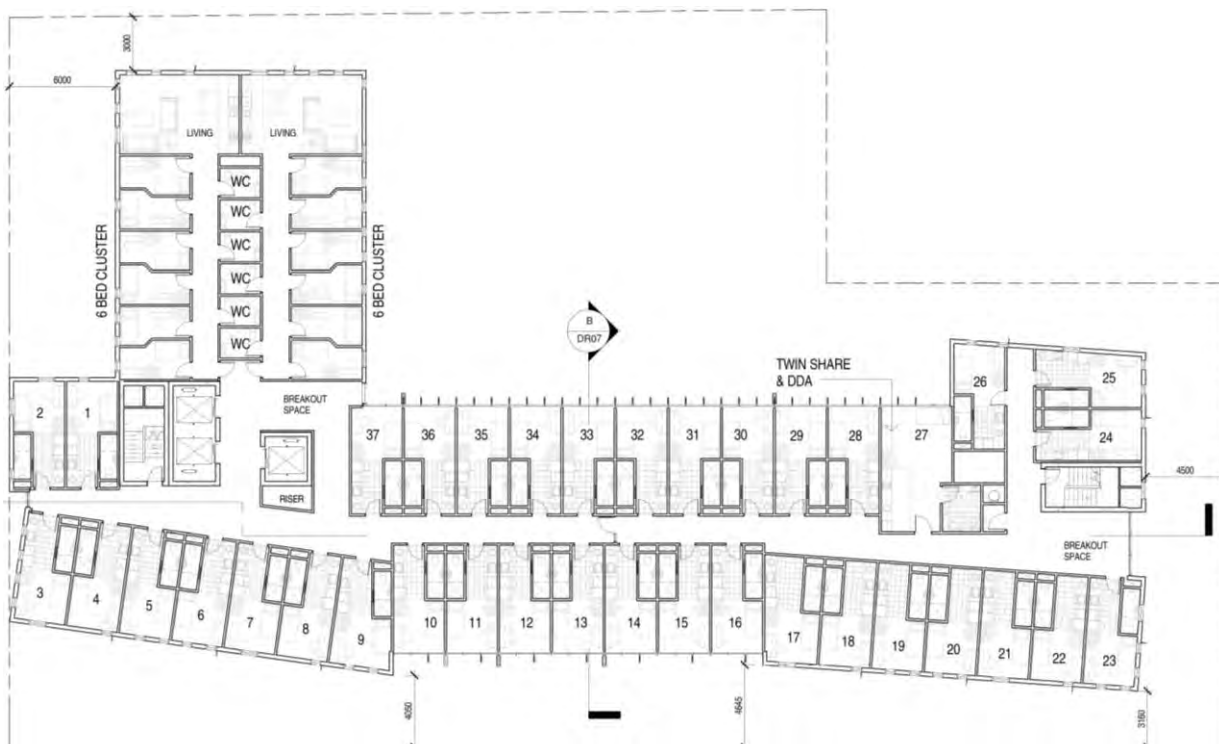


Figure 1: Designated room areas.

4.2 Noise from the Development

It is common for selections and detailed layouts for the mechanical services plant and equipment to not be available at this stage of the project.

As the layouts progress through the detailed design phase of the project, acoustic treatments will be incorporated into the design documentation to ensure compliance with the project criteria recommended above.

Notwithstanding, the assessment criteria are expected to be practicably achieved without any specific acoustic treatment.

5 CONCLUSION

An environmental noise assessment has been made for the proposed student housing development at 89-109 Gray Street, Adelaide.

The external noise ingress into the proposed development includes noise from amplified music and patrons at the adjacent licensed venue (Edinburgh Castle Hotel); activity at the adjacent workshop; and traffic on surrounding roads.

The main noise sources at the proposed development are the mechanical services plant and equipment.

Objective noise criteria have been developed based on the relevant provisions of the Adelaide City Council Development Plan for the above noise sources.

Noise predictions have been made and specific facade treatment has been recommended for the proposed building to satisfy the stringent acoustic requirements of the Adelaide City Council Development Plan.

The noise from mechanical plant at the site will be reviewed as the design selections progress and become available.



APPENDIX H

PO Box 7608, St Kilda Road, VIC 8004, Australia

15 May 2017

Mr Brett Eaton
Airside Operations Manager
Adelaide Airport Limited
1 James Schofield Drive
Adelaide Airport SA 5950

Dear Brett,

**89-109 Gray Street, Adelaide: Application for Building to Penetrate Adelaide
Airport Protected Airspace**

The Trust Company (Australia) Ltd as Trustee for WH Grey Street Trust is proposing undertake the development of a site at 89-109 Gray Street, Adelaide. This letter is an application for the building to penetrate the protected airspace around Adelaide Airport. It is intended to activate the building approval process under the Airports (Protection of Airspace) Act 1996.

The information contained in this letter is in accordance with the Department of Infrastructure and Regional Development's publication 'National Airports Safeguarding Framework', Guideline F 'Managing the Risk of Intrusions into the Protected Operational Airspace of Airports.' In preparing for this application we have estimated the height of the PANS-OPS surface and obstacle limitation surface (OLS) for Adelaide Airport at the position of the proposed building.

Below is the information required to support this application.

1.0 Description of Proposed Controlled Activity

A proposed building development is planned for a site at 89-109 Gray Street, Adelaide. The building mainly comprises high rise student accommodation.

This 89-109 Gray Street development, located approximately 5.5km northeast of Adelaide Airport, comprises two towers. Each tower will be constructed to a maximum height of 101.0m AHD. The proposed development will penetrate the Adelaide OLS but remain beneath the PANS-OPS and radar terrain clearance chart (RTCC) surfaces.

A diagram depicting the elevation of the building is included as Attachment 1.

The target construction commencement date is October 2017. We expect the construction activities to be completed by November 2018.

2.0 Precise location of Proposed Development

The position coordinates of the proposed building are:

Point ID	Easting	Northing	Description
A	279820.94	6132523.30	South East Corner of Development
B	279815.63	6132590.60	North East Corner of Development
C	279789.47	6132588.38	North West Corner of Development
D	279779.89	6132519.78	South West Corner of Building

A plan view diagram depicting the location of the position coordinates is included in Attachment 2.

3.0 Purpose of the Controlled Activity

The State Government of South Australia and the Adelaide City Council have strategic goals to increase the population density within the Adelaide city.

Should approval not be granted for the building and crane to enter the Adelaide OLS then the maximum height of the building would need to be reduced. This will significantly impact the financial viability of the project.

4.0 Specific Height Details of the Building

The proposed building development comprises two towers. Each tower will be constructed to a maximum height of 101.0m AHD. A crane will be used for construction but this will be subject to a separate application.

At the position of 89-109 Gray Street the height of the Adelaide Airport OLS is 65.0m AHD. This means that the proposed development will penetrate the Adelaide OLS by 36.0m. Therefore we request approval for the proposed development to penetrate the Adelaide OLS by 36.0m.

The height of the PANS-OPS surface above 89-109 Gray Street is estimated to be 140.0m AHD. This means that the proposed development is 39.0m beneath the PANS-OPS surface. The crane will remain below this surface i.e., it will have a maximum operating height of 39.0m or lower.

A RTCC surface has been established over the Adelaide central business district. At the position of the 89-109 Gray Street the height of the RTCC is estimated to be 182.8m AHD. This means the proposed development is 81.8m below the RTCC.

5.0 Estimated Date of Construction

Construction of 89-109 Gray Street is planned to commence in October 2017 with these activities completed by November 2018. An application for construction cranes to penetrate Adelaide prescribed airspace will be made separately.

6.0 Impact on Aircraft Operations

An aviation study has been completed about whether the proposed development will pose a risk to aircraft and helicopter operations. This aviation study concluded that the proposed development would present no risk to aircraft or helicopter operations. A copy of this aviation study is at Attachment 3.

7.0 Matters of Clarification

Ian Thompson has been appointed the agent of The Trust Company (Australia) Ltd as Trustee for WH Grey Street Trust to address all matters arising from these aviation matters. If you have any questions or matters of clarification arising from this application please contact Ian at ithompson@thompsongcs.com or via phone 0418 304 493.

In conclusion, this letter is an application a request is made for the proposed development at 89-109 Gray Street to penetrate the Adelaide OLS. The proposed development to a maximum building height of 101.0m AHD will penetrate the Adelaide OLS by 36.0m. An application for the crane to penetrate the OLS will be made separately.

Thank you for your consideration of this application. We look forward to achieving acceptance of our request.

Yours sincerely,

A handwritten signature in black ink, appearing to read "I. W. Thompson". The signature is written in a cursive style and is positioned above the printed name of the signatory.

Ian Thompson
Director
Thompson GCS Pty Ltd

Airspace Assessment to Support the Construction of a Building at 89-109 Gray Street, Adelaide

Final Report

**The Trust Company (Australia) Limited as Trustee for WH Grey
Street Trust**

Prepared by Thompson GCS

16 May 2017

Thompson GCS Pty Ltd
Po Box 7608
St Kilda Road
Victoria 8004
Australia

Table of Contents

Executive Summary	Page 1
1.0 Introduction	Page 2
2.0 Legislative Context	Page 2
3.0 Methodology	Page 3
4.0 Location of Building Relative to Protected Airspace	Page 4
5.0 Potential Issues from Interested Parties	Page 5
6.0 CASA	Page 10
7.0 Conclusion	Page 10

Glossary

AAL	Adelaide Airport Ltd
AGL	Above Ground Level
AHD	Australian Height Datum
ARP	Aerodrome Reference Point
ATC	Air Traffic Control
CASA	Civil Aviation Safety Authority
DME	Distance Measurement Equipment
FT	Feet
IFR	Instrument Flight Rules
ILS	Instrument Landing System
Km	Kilometres
m	Metres
MOS	Manual of Standards
nm	Nautical miles
OLS	Obstacle Limitation Surface
PANS-OPS	Procedures for Air Navigation Services-Operations
RTCC	Radar Terrain Clearance Chart
Sec	Second
VFR	Visual Flight Rules

Executive Summary

- The Trust Company (Australia) Ltd is seeking to undertake a development at 89-109 Gray Street to a maximum height of 101.0m AHD. This development comprises two towers, both will reach a maximum height of 101.0m AHD.
- Building developments in the Adelaide Central Business District (CBD) are impacted by the protected airspace restrictions defined for Adelaide Airport.
- The height of the PANS-OPS surface above 89-109 Gray Street is 140m AHD. At this position the height of the obstacle limitation surface (OLS) is 65m AHD. The radar terrain clearance chart surface (RTCC) is at 182.8m AHD.
- A building height of 101.0m AHD at 89-109 Gray Street will penetrate the OLS by 36.0m. It will lie beneath the PANS-OPS and RTCC surfaces.
- Due the proximity of the building development to Adelaide Airport no temporary penetration of the PANS-OPS surface or RTCC is permitted. Adelaide Airport Ltd require sufficient distance between the top of the proposed development and the lower level of the PANS-OPS surface or RTCC, whichever is lower, to enable operation of construction cranes. As the lower surface, the PANS-OPS height will govern the maximum height of crane operations during the construction period. Therefore construction activities must take place within 39.0m of the top of the building.
- A review of the proposed development with Adelaide Airport Ltd, Airservices, Babcock Mission Critical Services and CASA has found that it will not restrict or pose a risk to aircraft operations. The development will also not impair the operation of radar systems or navigation aids.

1.0 Introduction

The Trust Company (Australia) Ltd is seeking approval for a development to be located on a site at 89-109 Gray Street, Adelaide. The construction site is located approximately 5.5km northeast of the Adelaide Airport aerodrome reference point (ARP). The development involves two towers, both to be constructed to maximum height of 101.0m AHD.

The proposed development will penetrate the Adelaide Airport obstacle limitation surface (OLS) but shielding is not available from other buildings. Therefore an assessment is needed to determine whether the proposed 89-109 Gray Street development would present a risk to aircraft operations.

This report details the height of the prescribed airspace above the proposed building site at 89-109 Gray Street plus presents an assessment on the impact on aircraft operations. It includes: legislative context; methodology for the study; location of the building relative to prescribed airspace; and potential issues from interested parties.

2.0 Legislative Context

Airspace surrounding an airport is protected by the Airports (Protection of Airspace) Regulations 1996. It details the process required to be undertaken when an obstacle could infringe prescribed airspace and the responsibilities of various organisations.

Prescribed airspace around an airport includes the OLS and the PANS-OPS surface. An OLS provides general protection for aircraft operations around an airport. The PANS-OPS surface protects the airspace used by aircraft flying instrument approach procedures. A permanent obstruction, in this case the building, can be approved for an intrusion into the OLS. Permanent obstructions cannot be approved when their height penetrates the PANS-OPS surface. Due to the proximity of the proposed development to Adelaide Airport, Adelaide Airport Ltd (AAL) will not permit temporary obstructions to penetrate the PANS-OPS surface.

In addition to these two categories of prescribed airspace, Airservices Australia has placed a radar terrain clearance chart (RTCC) surface above Adelaide. The RTCC enables air traffic controllers to descend aircraft under radar control when they are not flying on an instrument approach or departure procedure. No penetrations of this surface are permitted.

When the proposed height of an obstruction is likely to penetrate the OLS a proponent is required to make application to the airport owner-operator, in this case AAL. In cases where shielding is not available from existing buildings, the airport owner-operator may require the proponent to complete a detailed aviation study to be completed to support the application. The airport owner-operator then seeks the input from the Civil Aviation Safety Authority (CASA), Airservices and the building authority concerned. This process seeks to determine whether there is any impact on safety or operational efficiency to aircraft activities.

Approval for building developments that penetrate prescribed airspace is ultimately granted by the Department of Infrastructure and Regional Development (DIRD). Should the development not be approved by DIRD, there is also an appeal process to the Administrative Appeals Tribunal.

AAL do not require that a request for a construction crane to penetrate the OLS accompany the building application. This crane application can take place once a construction firm is appointed and plans prepared. AAL do require, however, that sufficient distance be provided between the top of the building and the lower level of the PANS-OPS surface.

3.0 Methodology

This section provides an overview of the approach undertaken to determine the impact on prescribed airspace and aircraft operations of the proposed building development at 89-109 Gray Street, Adelaide.

The airspace over the Adelaide central business district (CBD) is impacted by the prescribed airspace defined for Adelaide International Airport. It governs the maximum permissible heights for buildings in the Adelaide CBD. Calculations of the height of the OLS and PANS-OPS surface were sourced from planning information maintained by AAL. In addition to the OLS and PANS-OPS surface a RTCC has been placed over the Adelaide CBD.

Developments around the Adelaide CBD that are planned to penetrate the OLS are normally approved when they are shielded by other existing structures. Shielding means that a proposed development is beneath a 10% slope from the maximum height of an existing building. When shielding does not exist, AAL require that an aviation assessment be undertaken to support the application. The aviation

assessment involves a safety assessment about the impact on aircraft operations of the proposed development.

In order to explore the safety impact on aircraft operations of the proposed development at 89-109 Gray Street, discussions were held with:

- Adelaide Airport Pty Ltd;
- Airservices;
- Babcock Mission Critical Services;
- CASA.

4.0 Location of Proposed Building Relative to Prescribed Airspace

Below is a description of the proposed building height relative to the Adelaide Airport OLS and PANS-OPS surface.

4.1 Building Height in Relation to PANS-OPS Surfaces

The height of the PANS-OPS surface overhead the proposed development at 89-109 Gray Street, is governed by the Adelaide Runway 05 East standard instrument departure (SID)-radar. Based on their planning information, AAL estimate that the height of the PANS-OPS surface above 89-109 Gray Street is 140.0m AHD. Airservices Procedure Design Unit (PDU) will confirm this height during their evaluation of the application. The proposed development to a maximum height of 101.0m AHD is 39.0m below the PANS-OPS surface.

4.2 Building Height in Relation to Obstacle Limitation Surface (OLS)

The height of the OLS above the proposed development at 89-109 Gray Street is 65m AHD. This means that a proposed maximum building height of 101.0m AHD will penetrate the OLS by 36.0m AHD.

4.3 Building Height in Relation to Radar Terrain Clearance Chart (RTCC)

Airservices has established a RTCC above the Adelaide CBD to a height of 182.8m AHD. A building to a height of 101.0m AHD is 81.8m beneath the RTCC surface. No temporary penetration of the RTCC is permissible.

Since the PANS-OPS surface is lower than the RTCC it governs the maximum height of crane operations. This means that crane operations must take place within 39.0m above the top of the building.

4.4 Impact on Parafield Prescribed Airspace

The proposed development at 89-109 Gray Street is outside the boundaries of the OLS defined for Parafield Airport.

The PANS-OPS surface for Parafield above 89-109 Gray Street, is governed by the 10nm minimum safe altitude (MSA). Therefore the Parafield PANS-OPS height is 858m AHD.

4.5 Summary

Approval is required for the proposed development at 89-109 Gray Street to penetrate the Adelaide Airport OLS by 36.0m. This approval is subject to there being no impact on the safety or the efficiency of air transport operations. An evaluation of potential issues is presented in section 5.0.

The proposed building and associated construction cranes must remain beneath the RTCC and PANS-OPS surface. Since the PANS-OPS surface is the lower surface, the proposed building and construction cranes must remain below 140.0m AHD. The proposed development is 39.0m beneath the PANS-OPS surface.

5.0 Potential Issues from Interested Parties

This section presents analysis following discussions with representatives from AAL, Airservices, Babcock Mission Critical Services and CASA to identify potential safety issues presented by the proposed development at 89-109 Gray Street. It first notes the matters raised by AAL then presents a description of the feedback of other parties about how the proposed development may impact aircraft and helicopter operations. Finally, the impact on communications, navigation and surveillance is provided.

5.1 Adelaide Airport Pty Ltd (AAL)

AAL is the owner-operator responsible for initiating the process to review building heights that may penetrate prescribed airspace around Adelaide Airport. It is also the airport owner-operator of Parafield Airport.

AAL has determined that shielding from existing buildings is only available for 89-109 Gray Street to a maximum height of 90.238m AHD. At a proposed maximum height of 101.0m AHD shielding is not provided. Therefore an application for this development to penetrate the Adelaide OLS requires an aviation study to be completed.

AAL airside operations manager advised that a two-stage application process is normally required to penetrate the OLS. The first stage would involve gaining approval for the building to penetrate the OLS. Stage two would involve application for the crane to penetrate the OLS. AAL require specific details about the operating parameters of the crane in the second application.

5.2 Aircraft and Helicopter Operations

This section presents a summary of the potential impact on aircraft and helicopter operations of the proposed development at 89-109 Gray Street Adelaide.

5.2.1 Aircraft Departing Adelaide Airport

Adelaide Airport has two crossing runways. In general terms, Adelaide aircraft movements comprise around 50% jet and 50% turbo prop or training aircraft. The most used runway is the longer 05/23. Turbo prop aircraft occasionally use runway 12/30. Jet operations prefer runway 05/23, although in strong northerly conditions that result in a significant cross wind, they will use runway 30.

The Adelaide Three SID Runway 05 (East) requires aircraft to climb runway heading to 1,700ft, and after passing 2DME, to turn right. Aircraft are required to achieve a minimum climb gradient of at least 5.7% until they are above 3,300ft. Although the right turn takes the aircraft over the Adelaide CBD, the mandated climb gradient ensures that aircraft remain in the PANS-OPS protected airspace. This PANS-

OPS surface was defined to keep departing aircraft clear of the Westpac Centre. At a height of 101.0m AHD, 89-109 Gray Street is 79m below the height than the Westpac Centre.

The proposed development is clear of flight paths for aircraft departing runway 12.

5.2.2 Aircraft Arriving at Adelaide Airport

The normal arrival path for IFR aircraft to runway 23 is to descend from Modbury. This arrival track is clear of the Adelaide CBD.

Turbo prop aircraft from the southeast, operating under instrument flight rules (IFR), may be cleared to descend on a visual approach left base for runway 23. Operating procedures require that these aircraft must remain within a 3nm radius from the runway 23 threshold (or 4 DME) of Adelaide Airport.

The proposed development at 89-109 Gray Street is 2.7nm from the threshold of runway 23 i.e., within the 3nm radius. This development lies within the CBD area to the east of the green belt surrounding the city. Assuming that these aircraft need to establish on final at 3nm from the threshold, they have 4nm to fly before touching down. Following the normal 3 degree glide slope, these turbo-prop aircraft will be approximately 1,200ft (365m) AHD. This means the aircraft will be at least 264m above the proposed 89-109 Gray Street development.

Should these aircraft join final within 3nm final, descending below 1,200ft on left base, they will need to fly over the green belt and thereby remaining clear of the Gray Street development. Furthermore these aircraft are operating visually and are required to maintain their own separation from terrain. This includes building and crane obstructions in the Adelaide CBD.

5.2.3 Impaired Aircraft Operation

Aircraft taking off runway 05, who suffer an emergency soon after take-off, would likely turn left and join the circuit to land. A left turn

takes aircraft away from the Adelaide central business district and the proposed development at 89-109 Gray Street.

Aircraft taking off from runway 12, who suffer an emergency soon after take-off, would likely turn right and join the circuit to land. A right turn takes aircraft away from the Adelaide CBD and the proposed development at 89-109 Gray Street.

5.2.4 VFR Aircraft Operations

General aircraft operations over the Adelaide CBD restrict the use of the Adelaide Three Runway 05 East (radar) SID for aircraft departing to the east. They may also impact departing aircraft climbing runway heading to the northeast. As a result general aircraft are normally kept clear of the Adelaide CBD to enable the efficient movement of air transport aircraft arriving or departing Adelaide. Although VFR aircraft may be permitted to operate over the Adelaide CBD it will generally occur only in light traffic conditions.

Civil Aviation regulations require aircraft operating visually to fly at least 1,000ft above built-up areas. In addition, the regulations require aircraft to be above 500ft above the highest obstacle within a 300m radius. This means that aircraft operating visually need to be at least 1,000ft AGL within a 300m radius of the proposed development at 89-109 Gray Street.

Aircraft operating under visual flight rules (VFR) transiting Adelaide are generally required to keep clear of the Adelaide control zone and track via the coast. The CBD is located within the Adelaide control zone, inland from the coast.

5.2.5 Helicopter Operations

The new Royal Adelaide Hospital (RAH) is expected to be commissioned in September 2017. This new hospital is located 360m north of the Gray Street development. Helicopter flight paths to the new RAH helipad run parallel to North Terrace. These flight paths are well clear, to the north, of the 89-109 Gray Street development.

Helicopters operating over the city generally maintain an altitude of 1,500ft, thereby well above the proposed development.

5.3 Impact on Navigation Aids and Radar Performance

Secondary surveillance radar is the technology used by air traffic controllers to provide radar separation between aircraft. Dual secondary surveillance radar coverage of the area overhead the Adelaide CBD is available from sensors located on the airport and Mt Lofty. This means the proposed development at 89-109 Gray Street will not impact radar performance.

Primary radar is used to detect aircraft that do not have an operational transponder. The proposed development at 89-109 Gray Street is located approximately 6km from the primary radar antenna. At this distance primary radar coverage will not be impacted by this development.

At a distance of 5.5km from the Adelaide Airport ARP, the proposed 89-109 Gray Street development will not impact on the performance of navigation aids located on the airport.

5.4 Summary

The analysis above shows that the proposed development will not impact aircraft departing Adelaide or the normal approach path from Modbury. Aircraft that suffer an engine failure after take-off remain clear of the CBD. Turbo prop aircraft joining on left base will be well above the 89-109 Gray Street development or fly along the green belt.

General aircraft and helicopter operations over the Adelaide CBD are required to be conducted at a height well above the proposed 89-109 Gray

Street development. This development is also well clear, to the south, of flight paths for the new RAH helipad.

The proposed development will not impact the performance of communication, navigation and surveillance equipment.

6.0 CASA

CASA will review this report in assessing the safety impact to aircraft arising from the proposed building at 89-109 Gray Street will consider safety issues relating to the aerodrome and flight operations in the surrounding area.

As the proposed building and crane will penetrate the OLS for Adelaide Airport, CASA will almost certainly require the crane and probably extremities of the building to be lit. It is likely that medium intensity red strobe lights will be required to be placed on the building and crane. At the top of the crane a further lighting system is likely to be required. This will involve lights that flash red at night and white during the day.

In addition to lighting, CASA is likely to require the crane to be painted with bands of contrasting colours. Details of lighting and painting requirements will be provided by CASA during the Airports (Protection of Airspace) approval process. General requirements for lighting and painting are contained in the Manual of Standards (MOS) Part 139-Aerodromes.

7.0 Conclusion

This report is an assessment of the issues that may impact operational safety from the proposed development at 89-109 Gray Street, Adelaide. It has also included an assessment of the impact on the OLS, PANS-OPS and RTCC surfaces defined for Adelaide Airport. At the position of 89-109 Gray Street, the PANS-OPS surface for Adelaide Airport is 140m AHD, while the height of the RTCC is 182.8m AHD. The height of the OLS is 65m AHD. A building with a maximum height of 101.0m AHD will penetrate the OLS by 36.0m AHD but remain beneath the PANS-OPS surface and RTCC. Crane operations will need to take place beneath the height of the PANS-OPS surface, thereby providing 39.0m free-board for these construction activities.

Analysis based on interviews with representatives from AAL, Airservices, Babcock Mission Critical Services and CASA has concluded that the proposed development at 89-109 Gray Street will not restrict or present a safety hazard to aircraft or helicopter operations. The development will not cause degradation in the operational performance of radar systems, communications equipment and navigation aides.