29 Twin Street Pty Ltd C/- Masterplan

Construction of a 36 storey mixed-use building comprising student accommodation, associated student services/amenity spaces, ground level retail café and associated site works

29 Twin Street, Adelaide

020/A067/18

TABLE OF CONTENTS

OVERVIEW

Application No	020/A067/18
Unique ID/KNET ID	3482 – 2018/17672/01
Applicant	29 Twin Street Pty Ltd C/- Masterplan
Proposal	36 storey mixed-use building comprising student accommodation, associated student services/amenity spaces, ground level retail café and associated site works
Subject Land	27-29 Twin Street, Adelaide
Zone/Policy Area	Capital City Zone , Central Business Policy Area 13
Relevant Authority	State Commission Assessment Panel
Lodgement Date	03/08/2018
Council	City of Adelaide
Development Plan	Adelaide (City) Development Plan [Consolidated 7 June 2018]
Type of Development	Merit
Public Notification	Category 1
Referral Agencies	Government Architect, Heritage SA and Airports
Report Author	Karl Woehle
RECOMMENDATION	Development Plan Consent subject to conditions

EXECUTIVE SUMMARY

The applicant seeks Development Plan Consent for the construction of a 36 storey mixed-use building comprising student accommodation, associated student services/amenity spaces and ground level café and associated site works in the Central Business Policy Area of the Capital City Zone at 27-29 Twin Street, Adelaide

The proposed development is a merit kind of development that triggers statutory referrals to the Government Architect, State Heritage, Adelaide Airport and a non-mandatory referral to the City of Adelaide. The proposed land-use is considered acceptable and consistent with the land-uses envisaged in the Central Business Policy Area of the Capital City Zone.

The height and scale of the proposed development is considered acceptable and consistent with the planning policy provisions. It is noted that a separate Commonwealth approval is required in relation to the height of the proposed development as it penetrates the Adelaide Airport Obstacle Limitation Surfaces (OLS) which is protected airspace for aircraft operations.

State Heritage in principle support the proposed development and notes that the impact on the State Heritage context and building is limited. The support however was contingent on further design development on several elements of the façade.

The Government Architect expressed supports for the project team's aspiration to deliver a high density student accommodation and is of the view that the height and scale of the proposal is appropriate within the locality. The ground level activation and design response to Twin Street and adjacent State Heritage place is supported.

The Government Architect provided comment that further design refinement of the architectural expression is required to achieve a coherent expression overall. Development of the façade design and detailing, including the insitu concrete wall on the south elevation was also recommended as well as continuing development of the communal facility strategy to ensure quality amenity. The applicant provided further explanation of the architectural expression and joint details of the insitu concrete walls, which was acknowledged by the Government Architect.

The proposal is largely consistent with Development Plan policy regarding design and appearance of buildings, activation, boundary setbacks, interface management and student apartment amenity.

Appropriate performance outcomes in respect to technical matters such as energy efficiency, wind analysis, crime prevention, stormwater, waste management and noise emissions are all considered to have been acceptably addressed.

On balance, it is considered the proposal satisfies the intent of the Central Business Policy Area and other relevant development control policies. The proposed development is not at significant variance with the Development Plan and it is recommended to grant Development Plan Consent.

ASSESSMENT REPORT

1. BACKGROUND

1.1 Strategic Context

On 30 May 2017 the Minister for Planning approved the Capital City Policy Review (Design Quality) Development Plan Amendment. The purpose of the DPA was to introduce and reinforce design quality within the Capital City Zone which:

- Reinforce design quality for new development;
- Establish additional requirements for over-height development including zone interface treatments and triggers for over-height allowances;
- Increase greening policy provisions for over-height development and;
- Strengthen the Desired Character Statement along Rundle Street to recognise its important character.

1.2 Pre-Lodgement Process

The applicant engaged in the Pre-lodgement Service offered by the Department of Planning, Transport and Infrastructure which is provided to applicants with developments involving building work exceeding 10 million dollars in value within the Capital City Zone.

The proponent engaged in one (1) Pre-lodgement Panel meeting and one (1) Design Review Session. The proponent responded to some of the issues raised during the pre-lodgement panel meeting and design review panel session.

2. DESCRIPTION OF PROPOSAL

Application details are contained in the ATTACHMENTS.

Land Use Description	Multi-storey mixed use building consisting of a café, student accommodation and associated student services/amenity spaces
Building Height	38 storeys and 124.2 metres (169.5m AHD)
Description of levels	**Ground Floor:** Retail Café Space **Mezzanine 1:** Building services and plant rooms **Mezzanine 2:** Student Hub, meeting rooms and informal lounge with balcony **Level 1-16:** Student accommodation in varying formats and student amenity/breakout spaces on levels 5 and 11 **Levels 17:** Laundromat , Laudro-lounge, balcony/terrace and mid plant building services **Level 18-21:** Student accommodation in varying formats which include DDA compliant studio layouts

	Level 22-34: Student accommodation in varying formats and student amenity/breakout spaces on levels 23 and 29 **Level 35:** Roof Deck, Gym and student amenities
Apartment types	Six-bedroom units- each bedroom with an ensuite Five-bedroom units – each bedroom with an ensuite Two bed twin share – a shared bathroom facilities Studio units with double bed and ensuite
Site Access	Pedestrian and service vehicle access via Twin Street
Car and Bicycle Parking	21 secure bicycle parks one ground level and 6 bicycle parks at street. No on-site car parking is proposed
Encroachments	Glass lift-up door which converts into canopy, Council in-principle do not object, subject to further detailed drawings
Staging	**Stage 1:** Demolition; **Stage 2:** Substructure construction **Stage 3:** Superstructure construction **Stage 4:** Architectural fit-out and external facades

3. SITE AND LOCALITY

3.1 Site Description

The development site comprises a single allotment located at 27-29 Twin Street, Adelaide and is situated on the western side of Twin Street. The development site is rectangular in shape and has an area of approximately 435 square metres. The development site has a primary street frontage of approximately 15.2 metres to Twin Street.

The land is subject to an easement marked 'E' which is 400 millimetres to 370 millimetres wide and extends the length of 8.96 metres adjacent to the northern boundary. The subject site has free and unrestricted right of way over the land on the adjacent allotment marked 'C', which runs the length of the southern boundary at a width of 4.37 metres.

The subject land is currently used as an ancillary carpark, which is bitumen sealed and fenced. Access to the carpark is via the adjacent right of way to the south of the site. The site abuts the southern wall of Gay's Arcade and the eastern side of the Adelaide Arcade.

Whilst not depicted on the Certificate of Title, it was acknowledged in the pre-lodgement meeting a 3 metre clearance along the western boundary is required for an existing SA Water infrastructure.

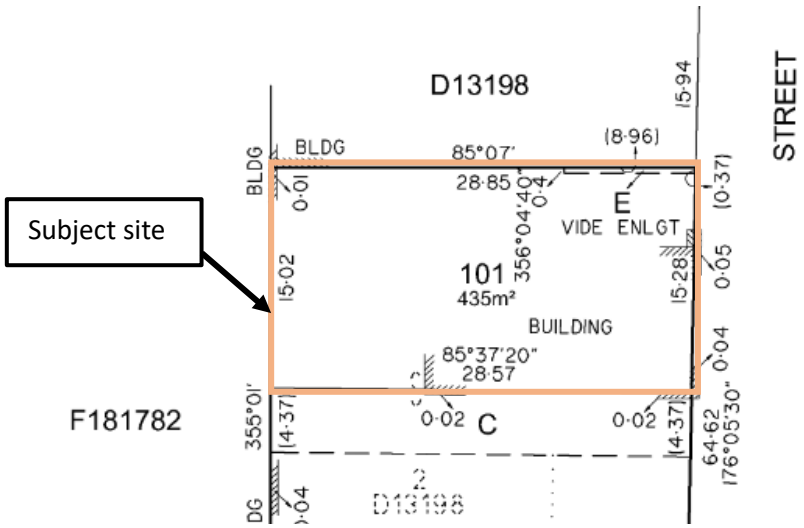


Figure 1- Land Survey

Lot No	Section	Street	Suburb	Hundred	Title
A101	D93330	Twin Street	Adelaide	Adelaide	CT 6139/714

The figure below illustrates the subject land highlighted in blue in the context of the immediate locality.

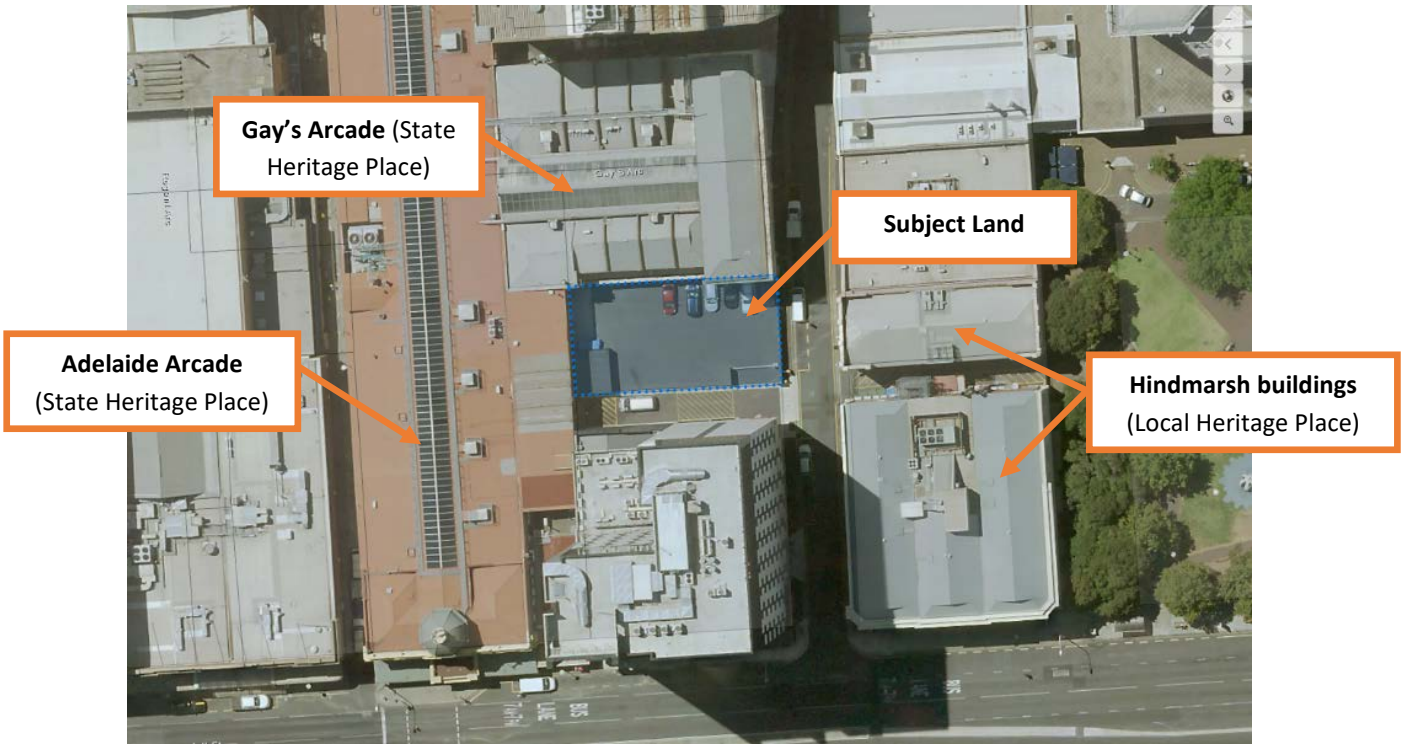
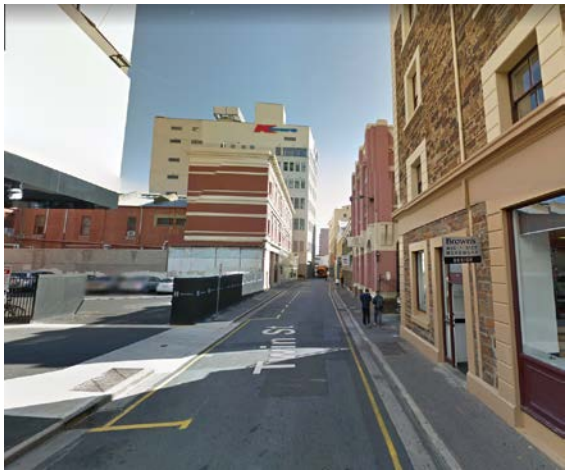


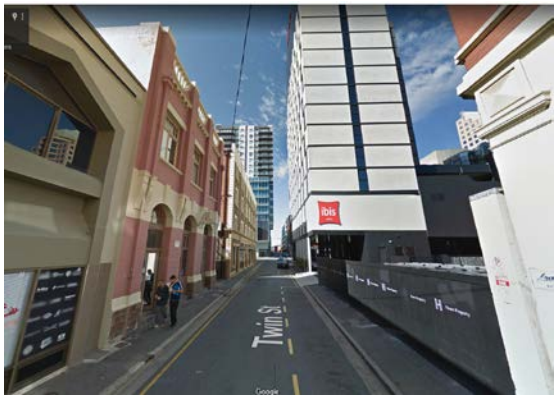
Figure 2 - Location Map

The subject site gains pedestrian access via Twin Street located to the immediate east. Service vehicles gain access to the subject site via the laneway located to the south.



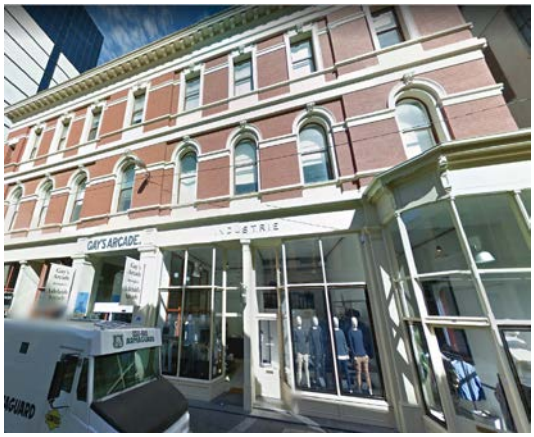
Twin Street - looking north


Twin Street – looking east



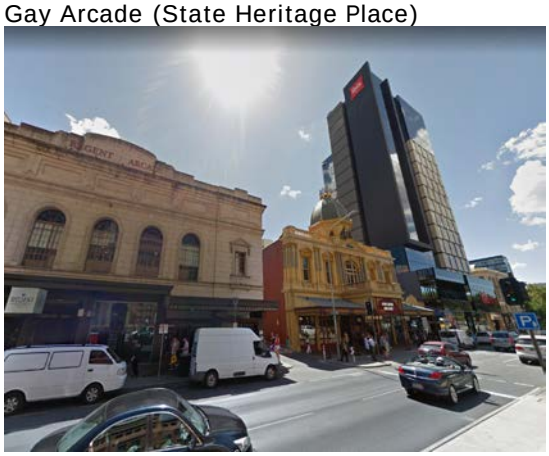
Twin Street - (Subject site) looking south


Twin Street - (Subject site) looking west



Gay Arcade (State Heritage Place)

Grenfell Street – looking toward Twin Street


Grenfell Street looking North-east

Grenfell Street looking west

Figure 3 - Site Photographs

3.2 Locality

The immediate locality is characterised by a wide range of uses from commercial offices, short term tourist accommodation, retail tenancies and educational institutional land uses. The built form generally ranges from low scale two storey buildings through to buildings over 10 storeys.

Twin Street extends in a north/south direction for a length of approximately 140 metres provides an important pedestrian connection to the Rundle Mall and Hindmarsh Square. Twin Street is approximately 6m in width and is a no through road that terminates to the north at Rundle Mall junction. Twin Street currently acts as a narrow service lane which provides rear access for properties on Rundle Mall, Grenfell Street and Hindmarsh Square.

Gay's Arcade represents a notable building within Twin Street and is State Heritage listed. The three-storey brick building is located directly to the north of the subject site and supports retails uses at ground. There are two notable local heritage buildings, 27-29 Hindmarsh Square and 134-140 Grenfell Street, both of which exhibit facades and elements of heritage value.

4. COUNCIL TECHNICAL ADVICE

4.1 Adelaide City Council

Advice was sought from Council Administration regarding technical matters. The following points were raised for consideration:

- The encroachment appears to meet the Encroachment Policy, however a detailed section of the lower levels is required to confirm this.
- There is an existing Parking Sign that will require relocation and coordination with City of Adelaide
- Council Administration is satisfied with the waste collection process due to the site constraints
- Management of bin rotation under the chute system needs to be addressed.
    - Volume sensors and automated rotation of bins under the chute should be investigated.
    - Bin wash down areas and appropriate drainage are also recommended.
- Council is unclear how the space between Gay's Arcade and the proposal will be treated noting there may be CPTED concerns
- There does not appear to be sufficient bicycle parking provided, acknowledging that a comparison with a similar development opposite a train station is not appropriate.
- No information has been provided in relation to the current demands on and any current restriction in the right of way for loading associated with the Hotel.
- Wayfinding for people with vision impairment should be considered in relation to interaction with the outdoor dining area.
- Outdoor dining would need to be restricted to within property boundary and would not be supported on the public walkway at this location due to width/functionality constraints
- Council noted that the residents of the 6 bed/ 6 bath apartment layouts will rely heavily on the communal areas for relaxation outside of their apartments.

The applicant provided further detailed drawings of the proposed encroachment, highlighting that it is consistent with Councils Encroachment Policies. It was acknowledged that the final public realm design will be undertaken in consultation with Council and will include the necessary footpath access ramps. Further clarification was provided relating to the proposed waste management and the current collection frequency of the adjacent IBIS Hotel. The applicant also noted that the space between Gay's Arcade and the proposed development will be lit 24/7 with security lighting which should appropriately address any CPTED concerns.

The City of Adelaide referral response is contained in the **ATTACHMENTS** and are further discussed in the planning assessment.

5. STATUTORY REFERRAL BODY COMMENTS

Referral responses are contained in the ATTACHMENTS.

5.1 Government Architect

The Government Architect is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008.* The Panel must have regard to this advice. The Government Architect responded to the referral and expressed in principle support for project team's aspiration to deliver a high density student facility in this location,

however suggested several elements of the proposed development would benefit from further design refinement and review.

The Government Architect supports the front setback of the lower built form and the inclusion of a lift-up door to create a genuine engagement with the public. However it was recommend that further development is require to deliver a well-considered urban interface response that references the ground floor uses and contributes positively to the public realm.

The approach to treat the building in the round is supported by the Government Architect, however is yet to be convinced by the proposed treatment of the stair core on the southern elevation. The Government Architect also recommends the design team to explore opportunities to further integrate the balconies into the building facades rather than the existing projecting small boxes, with a view to achieving a coherent architectural expression.

The Government Architect requested a materials sample board that clearly indicate materials and finishes in order to undertake a meaningful review and provide informed comments. Additional information was also requested in relation to the façade detailing, specifically the white corrugated cladding which will be installed as part of a slab to slab method of construction.

The variety of residential options including the eight accessible apartments is supported by the Government Architect, however concern was raised by the size and functional layouts of some of the apartments. A review of the twin share rooms and six bedroom apartments was recommended to ensure a high quality residential amenity.

The Government Architect is yet to be convinced that the vertical fins will contribute to the successful management of solar loads on the building, and it was recommended further development of the façade design and detailing is required to genuinely respond to each orientation and site specific conditions.

In response to the above points, the applicant welcomes a condition of consent requiring the final details of materials and finishes to be submitted to SCAP. The applicant noted in the main the lift core is screened by the adjacent IBIS Styles Hotel and is only visible above the adjacent building when viewed from southern vantage points. It was also highlighted that the vertical rebates on either side of the stair core reinforce the verticality of the facades, relief to the facade is expressed through the horizontal seam ‘pour joints’ and in-principles is supported by the Government Architect.

The applicant noted that the design of the tower strategically removed the vertical fins at the student amenity levels to create the impression of the student amenity pods on the eastern and western elevations responding to the projection.

An alternative twin share apartment layout was provided which included an internal privacy screen. The Government Architect remained concerned about the compromised privacy, however recognised the layout is based on internationally established student accommodation models.

The applicant noted that the facade and roof will perform to the requirement set out in Part J of the Building Code of Australia and the vertical fins are only one feature of many to assist with solar management.

The Government Architects statutory referral response is contained in the **ATTACHMENTS** and are further discussed in the Planning Assessment

5.2 State Heritage

The State Heritage Unit is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008*. The Panel must have regard to this advice. The State Heritage Unit responded to the referral and provided the following comments.

- The proposed development is located on an adjacent site to the State Heritage place and does not directly affect the physical and material heritage significance of the State Heritage place.
- With reference to the Twin Street context and the State Heritage place, the proposed design is considered to respond positively and satisfactorily to the visual presence and scale of Gay's Arcade.
- It is anticipated that the tower's separation distance from the Adelaide Arcade frontages will be sufficient to maintain a reasonable streetscape presence for the historic building's silhouette.

The State Heritage Unit generally supports the design concept in principle, subject to design development of the following aspects of the design

- Better visual integration of the northern elevation's five amenity pods into the horizontal banding of the tower shaft.
- The potential impact of environmental performance factors on the façade design concept
- The materiality and architectural expression of the southern elevation's central core.

State Heritage provided one (1) reserve matter, three (3) planning conditions and six (6) general notes that were recommended to be attached to any planning consent.

The applicant welcomes the suggested planning conditions, however noted that the Reserve Matter was previously raised by ODASA and has been subsequently dealt with in previous correspondence with ODASA.

The State Heritage statutory referral response is contained in the **ATTACHMENTS** and are further discussed in the Planning Assessment

5.3 Adelaide Airports

The Adelaide Airport is a mandatory referral in accordance with Schedule 8 of the *Development Regulations 2008*. The Panel must have direction to the advice.

The application has been assessed and at a height of RL 169.5m AHD. As a result the application will penetrate the Adelaide Airport Obstacle Limitation Surfaces (OLS) which is protected airspace for aircraft operations. It is noted that the proposed development will penetrate the OLS by approximately 34.5 metres.

As an Airspace Impact Study prepared by an Airspace Consultant is required to be submitted to the airport to commence the airspace approval application. If the development is approved by the Department of Infrastructure and Regional Development any associated lighting would also need to conform to the airport lighting restrictions and shielded from aircraft flight paths.

Crane operations associated with construction, if approved, will also be subject to a separate application.

The Adelaide Airport's statutory referral response is contained in the **ATTACHMENTS** and are further discussed in the Planning Assessment.

6. PUBLIC NOTIFICATION

The application is a Category 1 development pursuant to Capital City Zone Principle of Development Control 40(a). No public notification was required.

7. Policy Overview

The subject site is located in the Central Business Policy Area of the Capital Zone as described within the Adelaide City Development Plan [Consolidated 7 June 2018]. Relevant planning policies are contained in **ATTACHMENTS** and summarised below.

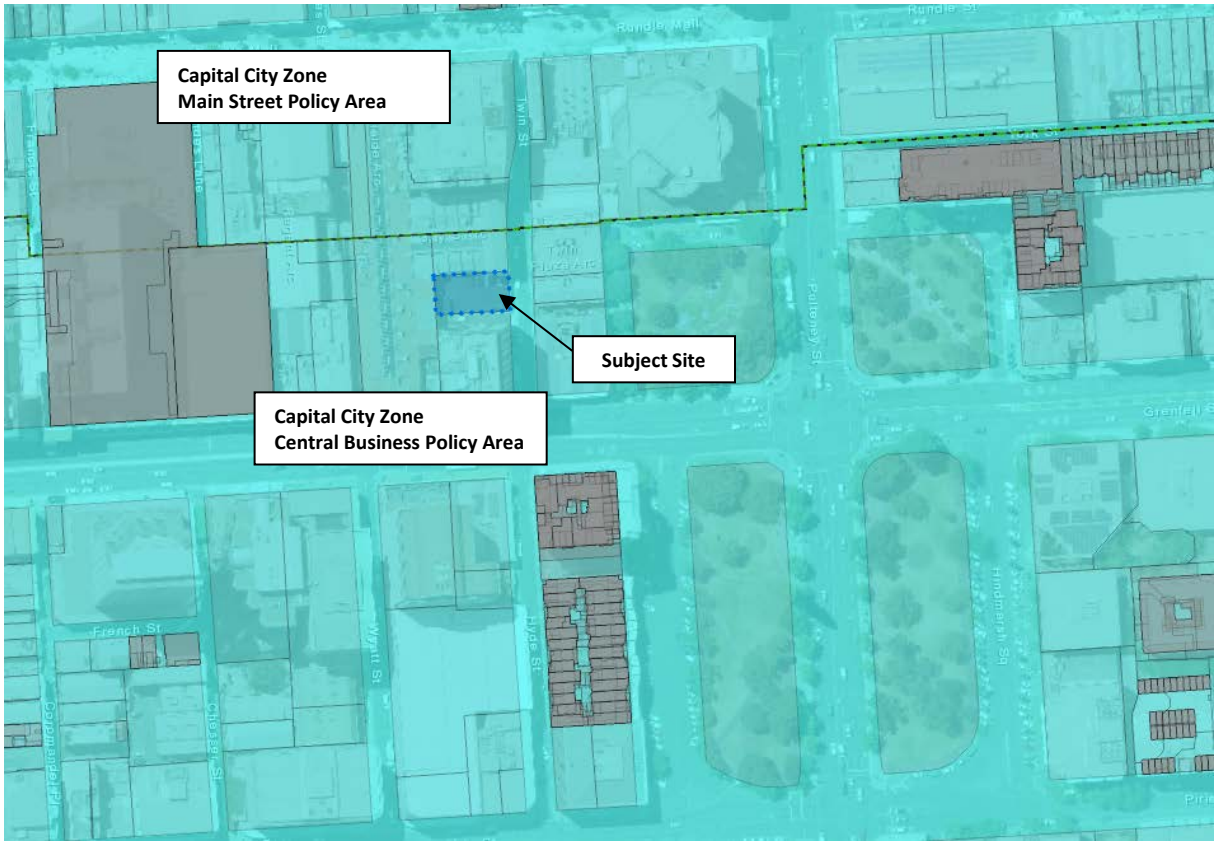


Figure 4 – Zoning Map

7.1 Policy Area

The Central Business Policy Area is highlighted in the Development Plan as the pre-eminent economic, governance and cultural hub for the State. Buildings within the Policy Area should exhibit innovative design approaches which produce stylish and evocative architecture. The Policy Area anticipates tall and imposing buildings that provide a hard edge to the street, which should be of the highest design quality.

7.2 Zone

The Capital City Zone encourages a diverse range of land uses with non-residential land uses at ground floor level to achieve greater activation of street frontages.

It is noted that there is no prescribed height limit for this particular part of the Capital City Zone. The Zoning seeks a high standard of architectural design and finish that is appropriate to the City's role and image as the capital of the State.

The Zone acknowledges contemporary juxtapositions will provide new settings for heritage places as well as responding to site context and broader streetscape whilst supporting optimal site development.

Council Wide
The Council Wide provision provide direction on the desire for increased levels of activity and interest at ground level; the safe and convenient servicing of sites; a high standard of design and appropriate bulk and scale of buildings and contribution to streetscape

7.3 Overlays

7.3.1 Affordable Housing
The proposal is subject to the affordable housing overlay.

7.3.2 Adelaide City Airport Building Heights
The proposed development exceeds the OLS Values set out in Airport Building Heights MAP/1 (Overlay 5)

8. PLANNING ASSESSMENT

The application has been assessed against the relevant provisions of the Adelaide (City) Development Plan [Consolidated 7 June 2018], which are contained in ATTACHMENTS.

8.1 Quantitative Provisions

	Development Plan Guideline	Proposed	Guideline Achieved	Comment
Building Height	Capital City Zone does not have prescribed maximum height for site	36 Storeys or 124.2 metres	YES ☒ NO ☐ PARTIAL ☐	
Land Use	Zone and Policy area envisages student accommodation and café/retail	Retail/café at ground and student accommodation	YES ☒ NO ☐ PARTIAL ☐	
Car Parking	No minimal parking requirements in Capital City Zone	No car parking proposed	YES ☒ NO ☐ PARTIAL ☐	
Bicycle Parking	Development Plan silent on Student Accommodation requirements	Total of 27 bicycle parks	YES ☒ NO ☐ PARTIAL ☐	Discussed further in assessment
Front Setback	Zone seeks building built to the street frontage	Front setback appropriately responds to streetscape	YES ☒ NO ☐ PARTIAL ☐	
Rear Setback	Zone and policy area generally silent on rear setback	Rear setback is considered appropriate	YES ☒ NO ☐ PARTIAL ☐	
Side Setback	Zone and policy area generally side setback	side setback is considered appropriate	YES ☒ NO ☐ PARTIAL ☐	
Private Open Space	No specific ratio applies for student accommodation	8 communal spaces located throughout the development	YES ☒ NO ☐ PARTIAL ☐	Discussed further in assessment

8.2 Land Use and Character

The proposal involves the development of café/retail tenancy at ground and student accommodation above. The proposal is considered consistent with PDC 1 which seeks this form of land-use within the Capital City Zone.

8.3 Building Height

The proposed development is approximately 124.2m in height to the top of the parapet and the site is located in an area not subject to a prescribed maximum building height, however is still limited by relevant airport height limitations. The Government Architect in-principle supports the proposed height of the development.

Adelaide Airports have confirmed that the proposed development will penetrate the Adelaide Airport Obstacle Limitation Surface (OLS) airspace by approximately 34.5 metres. Airports noted that an Airspace Impact Study is required to be submitted to the airport to commence the airspace approval application.

The application will require development approval by the Department of Infrastructure and Regional Development.

8.4 Setbacks

The Capital City Zone seeks high street walls that frame the city streets, it is also acknowledged that the zone envisages developments to provide new settings for heritage places, whilst responding to the site context and broader streetscape. The Central Business Policy Area generally supports tall and imposing buildings that provide a hard edge to the street.

The ground floor and mezzanine levels of the development are setback approximately 1.4 metres from Twin Street. The setback and recessed built form of the lower levels positively responds to the adjacent State Heritage place and built form within Twin Street. The Government Architect strongly supports the recessed built form at the lower levels.

The development is setback 3 metres from the western boundary to provide clearance for the existing SA Water infrastructure. The north eastern corner of the building is also setback to accommodate building services and the easement along the northern boundary.

8.5 Design and Appearance

The Capital City Zone seeks building to reflect innovative design approaches and contemporary architectural that responds appropriately to the locality and context. The zone places a strong emphasis on creating interesting pedestrian environments and ground floor activation through careful building articulation and fenestration, frequent openings in building facades and other design features.

The proposed development is a 38 storey tall building which is rectangular in form and is broken down into two distinctive elements. The 10 metre tall reverse podium expression is setback from the Twin Street frontage and consist of the ground floor and dual Mezzanine levels which is predominately glazed. The recessed built form of the lower section of the development is intended as an alternative to a podium which attempts to respond to the existing build form and scale of Twin Street. The Government Architect and State Heritage support the design and appearance of the lower built form and are of the view that the development responds to the adjoining heritage buildings.

At ground the development incorporates a retail/cafe tenancy, public and secure lobbies. The Government Architect supports the 1.4m setback of the lower built form, which opens up the public realm and accommodate increase pedestrian traffic. The retail/café tenancy utilises a lift-up door which should create an opportunity to genuinely activate the public realm. The back of house functions and building services have been

strategically located to the rear of the building at ground as well as the midlevel mezzanine level, which ensures the activation of Twin Street is maximised.

The Government Architect noted that the proposal is unclear in regards to the intended threshold treatment between the eastern façade and the footpath. It was recommended that further development of a well-considered urban interface response that references the ground floor uses and contributes positively to the public realm. The applicant provided additional information acknowledging the design team has been cognisant of the Rundle Mall masterplan which specifically references Twin Street, noting that a key element of the masterplan is the activation of street frontages and facilitation of pedestrian movements. At ground the proposed development activates the street frontage through the use of a retail/café space, which is further complemented by the setback of the built form at ground and integrated the public environment into the building.

The tower above is setback approximately 1.8 metres from the north and west boundary and cantilevers over the underground SA Water infrastructure along the western boundary. The tall slender proportions of the tower is emphasised through the use of vertical metal fins on all elevations, which also aids in reducing the heat loading on the façade. The Government Architect supports the slender built form of the tower and is of the opinion that there is potential for an elegantly proportioned addition to the city scape.

The slender proportions of the tower has been further segmented into 5 evenly spaced sections that are represented by horizontal bands, which is achieved through the removal of the vertical blades. Within these segments there are projected frame opening on the northern elevation to accommodate the five shared amenity spaces. The Government Architect generally supports the intent of the architectural expression to reflect the internal activities, however is of the opinion the projected forms on a single elevation is at odds with the overall building expression, which is singular and vertically articulated. Additionally the State Heritage Unit is of the opinion that the strongly contrasting expression of the black projecting amenity pods against the subtle banding effect diminishes the cohesive presentation and visual character of the façade design.

The Government Architect and State Heritage Unit raised concern that the proposed treatment of the stair core on the southern elevation did not present as a cohesive design element. The applicant provided further detailed drawings noting the stair core incorporates vertical louvers on the western side of the lift as well as vertical rebates on either side of the core to further reinforce the verticality in the facades. Whilst relief in the surface treatment is expressed through horizontal seam ‘pour joints’. The applicant also acknowledged that the main stair core is predominantly screened by the adjacent IBIS Styles Hotel and is visible only above the adjacent building when viewed from high or long view southerly vantage points. In principle the Government Architect acknowledged the additional information and supports the intent to maintain the core wall exposed with the horizontal ‘pour joints’, however request additional information regarding the construction management strategy to ensure the delivery of a high quality concrete finish.

The proposed development utilises extensive glazing at ground and uses vertical blades, corrugated panels, anodized pans and vision glass on the upper levels, which are generally considered robust and fit for purpose. Further information was provided by the applicant highlighting that the white corrugated cladding will be installed as part of a ‘slab to slab’ method of construction. The Government Architect supports the general approach to treat the building in round, however requested a materials sample board that clearly indicates materials and finishes in order to undertake a meaningful review and provide informed comments. Additional information was also requested in relation to the construction details and proposed approach to the façade detailing. The applicant welcomes a condition of consent requiring the final details of the materials and finishes

as well as the opportunity through design development stage to clarify the base material and finish for the façade elements.

Whilst further design refinement has been recommended by agencies, it is not considered appropriate for that refinement to occur via the assignment of a Reserve Matter. It considered that conditions relating to materials and threshold details are appropriate in this instance to enable continued detailed design of the proposal and giving the applicant certainty around the development plan consent. Such conditions have been include in the recommendation of this report.

Overall the design quality presented is considered to adequately satisfy expectations of building design and appearance encouraged by the Capital City Zone policy.

8.6 Internal Amenity

The Development Plan acknowledges residential development specifically designed for student accommodation may reflect a reduced internal floor areas, storage area and or areas of private open space.

The proposed development has been specifically designed for student occupation, as such the apartments reflect a reduced internal floor plate, typical of a development of this nature. The proposal includes a range of indoor and outdoor communal areas to meet the social, education and cultural needs of the student residents. There are 8 unique communal areas located throughout the development, providing a variety of spaces for the students to interact. The Government Architect generally supports the provision of the shared student spaces and infrastructure throughout the building to fulfil the potential for buildings of this scale and nature.

The residential floors of the development offer a mixture of student accommodation options, which also includes 8 DDA complaint studio apartments and is supported by the Government Architect. Each bedroom has access to natural light via a window and it is noted that the windows on the eastern and southern elevations are operable to allow for natural ventilation which is strongly supported by the Government Architect. The accompanying floor plans demonstrate how each room can accommodate as a minimum a desk, robe, shelves and a single bed, which is considered consistent with PDC 13 (student accommodation). The larger five and six bedroom apartments have access to ensuite facilities which is considered a positive design feature.

The Government Architect raised concern that the twin share bedrooms did not provide private space. Concern was also raised that the shared space for the six bedroom apartments do not appear sufficient to support six students. The applicant noted the Government Architects comments and submitted an alternative twin share floor plan option which introduces a privacy screen between the two beds and provides the final operator an alternative floor plan. The applicant also acknowledged that the six bedroom accommodation cluster provides the most affordable product, which offers appropriate privacy for sleeping, studying needs while providing communal cooking and meal facilities. Concerns around the compromised privacy of the twin share rooms remains, however the Government Architect acknowledged that the layout is based on internationally established student accommodation models.

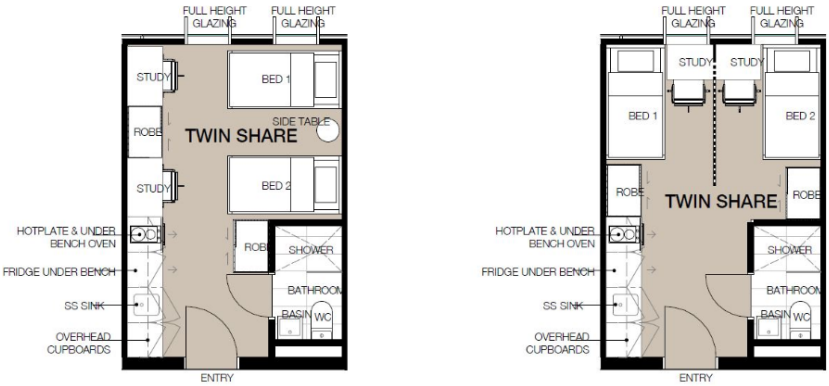


Figure 5 – Twin Share layouts

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.

8.7 Heritage

The Capital City Zone envisages development to provide a new setting for heritage places, whilst appropriately responding to the site context and broader streetscape.

State Heritage are of the view that the proposed development does not directly affect the physical fabric and material significance of the State Heritage Place. The setbacks of the proposed development avoids a direct built interface with the Adelaide Arcade and Gay's Arcade, although it is noted that the northern and western facades are setback 1.5 metres, which could restrain future development, however the future likelihood of such development noting the heritage listing is low.

The design of the lower recessed podium expression is considered a positive design feature that appropriately responds to the built form and scale of the Twin Street streetscape. State Heritage support the contextual response of the podium base and notes the horizontal proportions of the café opening provides a balanced composition while injecting visual interest and human scale into its relationship with Gay's Arcade.

State Heritage acknowledge that the separation distance from the Adelaide Arcade frontages will be sufficient to maintain a reasonable streetscape presence for the historic building's silhouette, notwithstanding the impact of the tower. In principle the State Heritage supports the design concept, subject to some further design development which are discussed in the design and appearance section of this report.

On balance the proposed development appropriately responds to the adjacent State Heritage Place and the immediate context and is considered generally consistent with the Development Plan Policies.

8.8 Traffic Impact, Access and Parking

8.8.1 Site Access and Traffic Impact

The Capital City Zone does not prescribe a minimum parking requirement. The proposal does not include any provisions for onsite parking. The applicant engaged Infraplan to conduct a Traffic Design Report for the proposed development. It is noted that other than commercial vehicles accessing the loading bay, there will be no direct traffic movements associated with the proposed development via the shared right of way.

Service Vehicles access the loading bay via the Right Of Way at the south west corner of the property. The Right Of Way access lane is shared with the adjacent Ibis Hotel located to the south. The Traffic report highlighted that the proposal does not intent to alter the existing driveway crossovers along Twin Street.

Council initially raised concern that the current demand on the Right Of Way for loading of the Hotel might impact on the use for waste collection associated with the proposed development. The Hotel operator confirmed that the lane is accessed up to 15 times per day with most of the vehicle movements occurring between 10am and 3pm. The traffic consultant confirmed that the Right of Way could accommodate up to 50 movements per day, which is enough to adequately service both developments. As such it is considered that there is minimal risk of two vehicles needing to access the right of way at the same time.

Council also raised concern that the swept paths for MRVs do not appear to include sufficient clearances and could impact on the on-street parking loading areas. The traffic consultant provided diagrams demonstrating the swept paths of an MRV reversing from Twin Street to gain access to the loading bay. It is noted that the swept path does encroach on the on-street parking to the north by 100mm and should maintain clearance from a typical parked vehicle. The consultant also noted the that the carpark is a loading zone from 6am to 10am, with no parking outside of these times and is unlikely to be occupied.

It was acknowledged that the worst case scenario maybe that the reversing MRV is required to make an extra step in movement, which is not considered detrimental to Twin Street due to the low traffic movements. It is also acknowledged that this vehicle manoeuver is used to service the Ibis Hotel.

Overall the access arrangements for the site and resulting service vehicle movements is considered acceptable and should not detrimentally impact vehicle/pedestrian movements in Twin Street.

8.8.2 Bicycle parking

The Development Plan does not contemplate a parking rate for student accommodation. The proposed development incorporates 21 secure internal bike parks located on the northern side of the ground floor and can be accessed directly from Twin Street. There are an additional 4 undercover and two uncovered outdoor spaces on bike rails. The internal student bicycle parking is located at ground level, undercover and are secure, satisfying PDC 235 in the Development Plan.

In the absence of a prescribe parking rate the traffic report prepared by Infraplan referenced the recently approved Urbanest North Terrace and Urbanest Bank Street exhibited a bicycle parking rate of 1 park per 16.4 beds and 1 park per 22.9 beds. The proposed development provides 1 bicycle park per 20.4 beds which is considered acceptable, given the close proximity to Universities, retail facilities, public transport and public open space.

The proposed bicycle parking exhibits a parking rate similar to established student accommodation developments. As such the proposed development should be able to cater for the bicycle parking demand and is considered generally consistent with the qualitative bicycle parking provisions of the Development Plan

8.9 Environmental Factors

8.9.1 Crime Prevention

The Development Plan generally seeks development to integrate and attempt to facilitate natural passive surveillance, clear lines of sight and appropriate lighting within the design of the building to reduce potential crime.

The proposed development utilises extensive glazing along the Twin Street façade at ground and mezzanine levels, ensuring there are views in and out of the building providing opportunities for passive surveillance. The Student Accommodation reception desk is centrally located with clear sight to Twin Street, lift core, stairwell and secure lobby.

The applicant has confirmed that the proposed development will incorporate CCTV surveillance of the public areas and communal spaces within the building. It is also noted that the Twin Street retail/café frontage and 510 students should provide a level of activity and passive surveillance for the immediate locality.

Council raised concern that the space between the proposed development and Gay's Arcade might raise CPTED issues. The applicant noted that this area will be lit 24/7 with security lighting to avoid loitering and acknowledged that the increase in street activation in this location should provide sufficient passive surveillance of this area.

The proposed development demonstrates appropriate crime prevention consideration and design initiative that generally satisfies the Crime Prevention policy provision in the Development Plan.

8.9.2 Noise Emissions

Council Wide PDC 93 seeks mechanical or plant equipment to be designed and sited to minimise noise impacts on adjacent premises and properties.

The applicant has indicated that the acoustic treatments and construction methodology to be specified during detailed design will align with the recommendations of an acoustic engineer's report which was not available at the time lodgement.

It is understood that the constructions of the dividing walls and floors between the sole occupancy units included in the residential component and between the residential and shared common spaces are to be nominated to ensure compliance with the requirements of National Construction Code Series 2016, Building Code of Australia for sound insulation (Section F5).

On this basis the acoustic treatments in the proposed development should be of appropriate standard, however a condition has been proposed to be placed on any planning consent to ensure final acoustic treatments are appropriately integrated into the proposed development

8.9.3 Waste Management

Council Wide Waste Management policies and objective collectively encourages the use of a dedicated area for on-site waste collection and sorting of recyclable materials, that does not create unacceptable levels of smell and detrimentally affect established amenity.

The proposed development includes a storage area large enough to accommodate 5x1100 litre general waste bins, 4x600L Organic food bins and 3x1100L and 2x660L recyclable waste bins. The waste storage room also includes approximately 5.4m^2 for the storage at the western side of the site for storing and collection of hard waste.

The proposed development incorporates an integrated waste chute system. The single waste chute will have a control system and waste splitter located at the ground floor for general and recyclable waste streams. Access to the waste chute is via wall hatches on the west of the lifts on each floor. The Café tenancy at ground will have access to the bin area and will transfer their waste manually. The current waste arrangements do not include an automated bin rotation system, as such it is the Facility Managers responsibility to rotate the bins. It is noted that organic waste is not included in the chute system and it was recommended by the waste consultant that an internal collection system be employed.

The consultant's report highlighted that a private waste collection contractor will be employed to service the proposed development. Waste collection will occur on premises and is accessed via the Right of Way, consistent with PDC 242 Council Wide which seeks on-site facilities for the loading and unloading of service vehicles away from public view. It was estimated waste collection will occur three times a week.

Council are generally satisfied with the waste management strategy and collection process due to the constraints of the site.

On balance the proposed waste management strategy is acceptable and generally consistent with the Development Plan

8.9.4 Energy Efficiency

The Council Wide Energy Efficiency policies and objective seeks development to be compatible with long term sustainability of the environment and minimise consumption of non-renewal resources and utilities.

The applicant engages Lucid Consulting to conduct a sustainability report. The design of the development utilises an efficient building thermal envelope, which incorporates wall, floor and roof insulation R-values that meets best practices. High performance glazing with solar control as well as external vertical fins attached to the façade should mitigate solar heat gains in summer. The Government Architect and State Heritage Unit were yet to be convinced that the vertical fins contribute to successful management of solar load as envisaged and recommended further development. The applicant noted that the vertical fins only provide one of the many layers to assist with solar management and that the overall façade (and roof) will perform to the requirements set out in Part J of the Building Code of Australia.

LED lighting technology and motion sensors will be incorporated throughout the proposed development to ensure energy efficient lighting. Water efficient fittings will be utilised on taps, toilets and showers. A high efficiency VR, heat recovery type air conditioning system is being proposed for the development, which exceeds 2016 NCC minimum energy performance standards.

The proposed development demonstrates appropriate energy efficient considerations and initiatives and generally satisfies Council Wide Energy Efficient policies and objectives.

8.9.5 Wind Analysis

The Development Plan provisions encourages developments over 21 metres in building height to be designed to reduce potential wind impacts on adjacent properties and pedestrian environment. The policy provision in the Development Plan encourages the use of podiums, verandas and placement of the building as design initiatives that could potentially mitigate wind impacts.

The applicant engaged Cermak Peterka Petersen to conduct a Qualitative Wind Assessment for the proposed development. The consultant's report noted that wind conditions at most locations around the proposed development site are expected to remain similar to the existing wind conditions and pedestrians comfort levels at ground is likely to be classified as acceptable. The wind conditions for the northern facing communal balconies are generally expected to be relatively calm and the addition of the high balustrades provides further protection from all sides.

The consultant's report highlighted that the roof top communal area is located on the northern part of the floor and is protected to the south by the enclosed part of the roof level and by the full height screens around the perimeter of the roof top terrace, as such wind conditions would be relatively comfortable.

The proposed development generally satisfies the policy provisions relating to wind impacts and is deemed acceptable.

8.9.6 Stormwater

The subject site is currently impervious, which is covered by asphalt and is currently being used as a car parking space. The space drains into the existing Council Stormwater system. It is acknowledged that the proposed development will cover the subject site and should not result in an increased stormwater discharge. Council did not raise any storm water related concerns.

The proposed development is considered consistent with the Council Wide policy provisions.

8.10 Signage

Five signs have been proposed throughout the proposed development. The applicant notes that the signage provides building identification and each sign will be consistent and simple in design and style. Generally the signs are considered to be of appropriate size, scale and location

A condition has been proposed to be placed on any planning consent to ensure the final signage strategy and design is appropriately integrated into the overall architectural expression.

8.11 Interface

The immediate locality consist of commercial offices, retail, educational institutions and an IBIS Hotel to the south. The Right of Way between the proposed development and IBIS Hotel provides an acceptable separation distance. It is also noted that the closest northern façade of the IBIS hotel is clad in a concrete panel with minimal windows, reducing the potential impact of direct overlooking.

The slender built form of the proposed development casts a shadow that is quite narrow in nature. The provided shadow diagram illustrates that the development does not appear to substantially overshadow adjacent developments during the winter solstice. On balance the interface and overshadowing as a result of the proposed development is considered acceptable for the immediate locality.

9. CONCLUSION

The applicant seeks Development Plan Consent for the construction of a 36 storey mixed-use building comprising student accommodation, associated student services/amenity spaces and ground level cafe, landscaping and associated site works in the Central Business Policy Area of the Capital City Zone at 29 Twin Street, Adelaide.

The proposal meets the Development Plan criteria in relation to height, use, access, bicycle parking, encroachments, setbacks, ESD principles, CPTED principles, noise emissions and noise protection and waste management.

The proposed development is considered acceptable in scale and height for the locality. It is acknowledged that the development is not subject to a prescribed maximum building height, however relevant airport heights still apply to the development site. Adelaide Airport have noted that a separate Commonwealth approval is required in relation to the height of the proposed development.

The design and appearance of the proposed development at ground contextually responds to the Twin Street and the adjacent Gay's Arcade, a state heritage listed place. State Heritage are of opinion that the proposed development should not directly affect the physical fabric and material heritage of the State Heritage Place, however suggested some further design refinement. The Government Architect also supports the general design direction, however suggested some further design development.

Whilst the opinion on design is finely balance, it is acknowledged that the development meets majority of the Development Plan policy requirement and is consistent with the desired character and objectives of the Capital City Zone. The development is therefore recommended for the granting of Development Plan Consent, subject to planning conditions.

10. RECOMMENDATION

It is recommended that the State Commission Assessment Panel:

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

2) RESOLVE that the proposal generally accords with the related Objectives and Principles of Development Control of the Adelaide (City) Council Development Plan.

3) RESOLVE to grant Development Plan Consent to the proposal by 29 Twin Street Pty Ltd for 36 storey mixed-use building comprising student accommodation, associated student services/amenity spaces and ground level cafe, landscaping and associated site works at 29 Twin Street, Adelaide subject to the following reserved matters and 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/A067/18

   Plans by Woods Bagot

Sheet title	Drawing Number	Revision	Date
Site Plan	A1100	K	03/08/18
Level 00 - Ground	A2200	K	03/08/18
Level M1 – Mezzanine Plant	A2200.M1	K	03/08/18
Level M2 – Mezzanine Student	A2200.M2	K	03/08/18
Level 01-16 (Typical)	A2201	K	03/08/18
Level 05 - Amenity	A2205	K	03/08/18

Level 11 - Amenity	A2211	K	03/08/18
Level 17 Mid - Plant	A2217	K	03/08/18
Level 18-21 (DDA)	A2218	K	03/08/18
Level 22-34 (Typical)	A2222	K	03/08/18
Level 23 - Amenity	A2223	K	03/08/18
Level 29 - Amenity	A2229	K	03/08/18
Level 35 – Roof Deck	A2235	K	03/08/18
Roof Plan	A2236	K	03/03/18
General Materials			
Elevations			
Twin Street Elevation			

Environment

2. 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.

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

4. All Council, utility or state-agency maintained infrastructure (i.e. roads, kerbs, drains, crossovers, footpaths etc.) that is demolished, altered, removed or damaged during the construction of the development shall be reinstated to Council, utility or state agency specifications. All costs associated with these works shall be met by the proponent.

5. Appropriate acoustic attenuation measures shall be fully incorporated into building rules documentation to the reasonable satisfaction of the SCAP prior to the granting of approval for superstructure works.

6. All external lighting on the subject land shall be designed and constructed to conform to Australian Standard (AS 4282-1997). The lighting shall be designed and operated with CPTED practices in mind in order to maximise pedestrian amenity and safety 24 hours, 7 days a week.

7. All bicycle parks shall be designed and constructed in accordance with Australian Standard 2890.3-2015 and shall be located to ensure ease of access to users.

8. Waste collection vehicles shall not access the site after 10:00pm on any day, before 7:00am Monday to Saturday or before 9:00am on Sundays

External Materials

9. Prior to Development Approval for superstructure works, the applicant shall submit a final detailed schedule and material sample board of the external materials and finishes, to the reasonable satisfaction of the State Commission Assessment Panel in consultation with the Associate Government Architect. A component of this submission condition shall include proposed details of the interface between the development's ground floor and the public realm to demonstrate a well-considered urban interface along Twin Street.

10. Prior to Development Approval for superstructure works, the applicant shall submit final detailed documentation and plans demonstrating the proposed approach to facade detailing and the construction management strategy of the insitu concrete wall, to the reasonable satisfaction of the State Commission Assessment Panel in consultation with the Associate Government Architect.

11. The applicant shall submit, final signage design details including dimensions and specified graphics including colours to the reasonable satisfaction of the State Commission Assessment Panel.

State Heritage Branch Conditions

12. A dilapidation survey recording the condition of the State heritage place shall be prepared prior to the commencement of site works, to the satisfaction of the relevant planning authority. As well as recording fabric in good condition, the survey shall also record the location, type and dimensional extent of any existing physical damage to the place that might be affected by the proposed excavation, site works and construction works.

13. The contractor shall prepare and submit a Construction Vibration Management Plan (CVMP) that establishes:

    a) appropriate vibration limits in the proximity of the heritage place as informed by DIN 4150-3;
    b) appropriate construction techniques to limit vibration to the established limits, and exclusion zones for equipment and construction practices that are likely to exceed these;
    c) appropriate monitoring techniques to ensure vibration limits are not exceeded; and
    d) risk management procedures for any works that are likely to exceed established limits to ensure the protection and preservation of fabric of heritage significance;
    e) a regime of regular inspection of the heritage fabric to ensure no damage is arising from the works; and
    f) procedures to be followed if any structural distress or damage is identified in the heritage fabric.

    A copy of the CVMP shall be provided to the satisfaction of the relevant planning authority in consultation with Heritage South Australia (Department for Environment and Water) prior to commencement of works on site.

ADVISORY NOTES

a. The development has been proposed in the following stages:
    - **Stage 1:** Demolition;
    - **Stage 2:** Substructure construction
    - **Stage 3:** Superstructure construction
    - **Stage 4:** Architectural fit-out and external facades

b. A Construction Environmental Management Plan (CEMP) shall be prepared in collaboration with the City of Unley (Council) and be implemented in accordance with current industry standards – including the Local Nuisance and Litter Control Act 2016, the EPA publications "Handbook for Pollution Avoidance on Commercial and Residential Building Sites – Second Edition" and were applicable, "Environmental Management of On-site Remediation" – to minimise environmental harm and disturbance during constriction.

    The management plan should incorporate, without being limited to the following matters:
    - Timing, staging and methodology of the construction process and working hours;
    - Traffic management strategies;
    - Control and management of construction noise, vibration, dust and mud;

- Management of infrastructure services during construction and re-establishment of local amenity and landscaping;
- Stormwater and groundwater management during construction;
- Site security, fencing and safety and management of impact on local amenity for residents, traffic and pedestrians;
- Disposal of construction waste, any hazardous waste and refuse in an appropriate manner according to the nature of the waste;
- Protection and cleaning of roads and pathways;
- Overall site clean-up;
- Work in the public realm;
- Hoardings and
- Tradesperson vehicle parking:

c. 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.

d. 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.

e. 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).

f. Any changes to the proposal for which planning consent is sought or granted may give rise to heritage impacts requiring further consultation with the Department of Environment, Water and Natural Resources, or an additional referral to the Minister for Sustainability, Environment and Conservation. Such changes would include for example (a) an application to vary the planning consent, or (b) Building Rules documentation that incorporates differences from the proposal as documented in the planning application.

g. The applicant is to note the following requirements of the Heritage Places Act 1993:
   - If an archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the SA Heritage Council shall be notified.
   - Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.

   For further information, contact the Department of Environment, Water and Natural Resources.

h. The applicant is to note the following requirements of the Aboriginal Heritage Act 1988:
   - If Aboriginal sites, objects or remains are discovered during excavation works, the Aboriginal Heritage Branch of the Aboriginal Affairs and Reconciliation Division of the Department of the Premier and Cabinet (as delegate of the Minister) should be notified under Section 20 of the *Aboriginal Heritage Act 1988.*

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

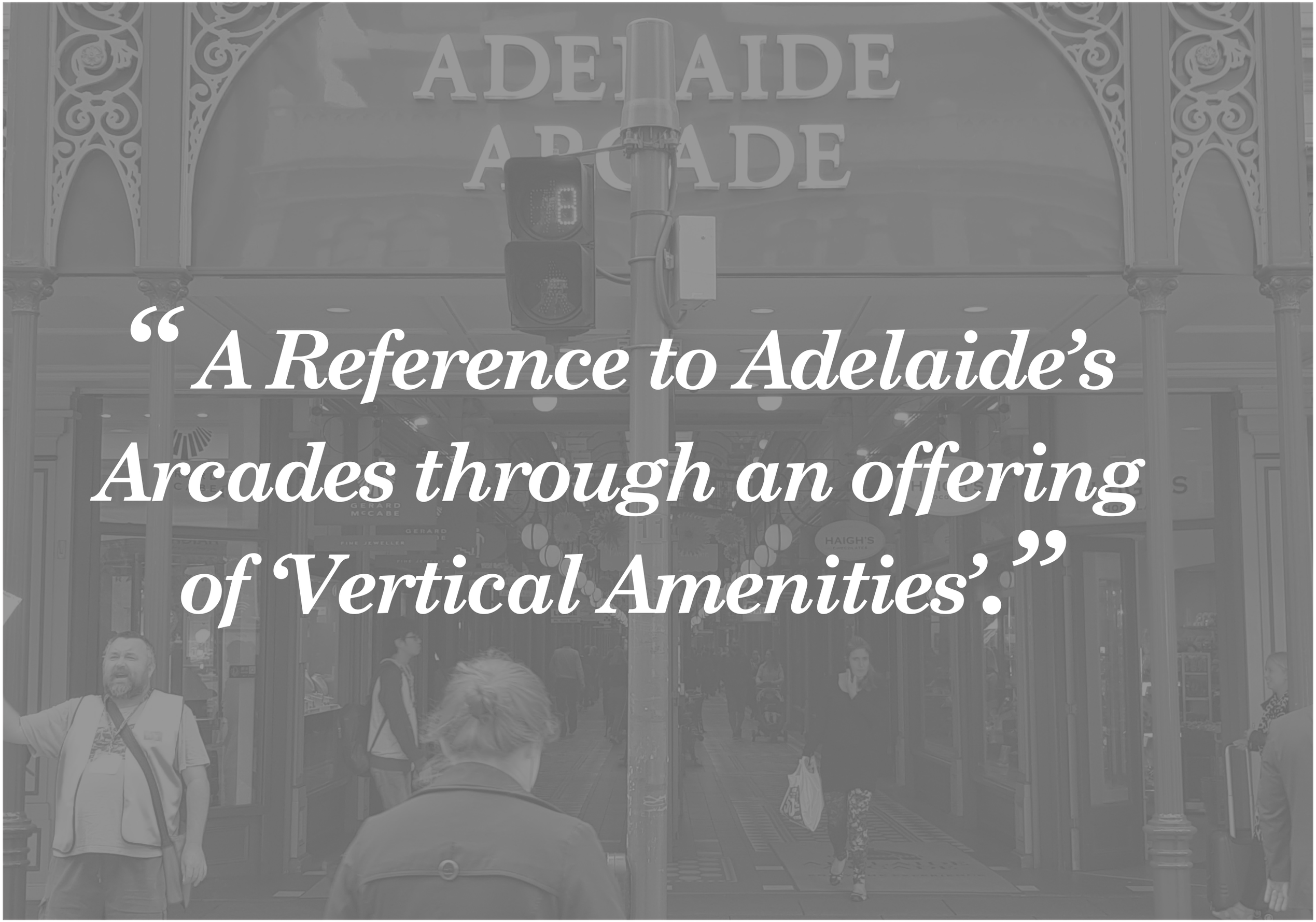
Karl Woehle
Planning Officer
DEVELOPMENT DIVISION
DEPARTMENT OF PLANNING, TRANSPORT and INFRASTRUCTURE

Twin Street Student Accommodation

WOODS BAGOT™

Development Application

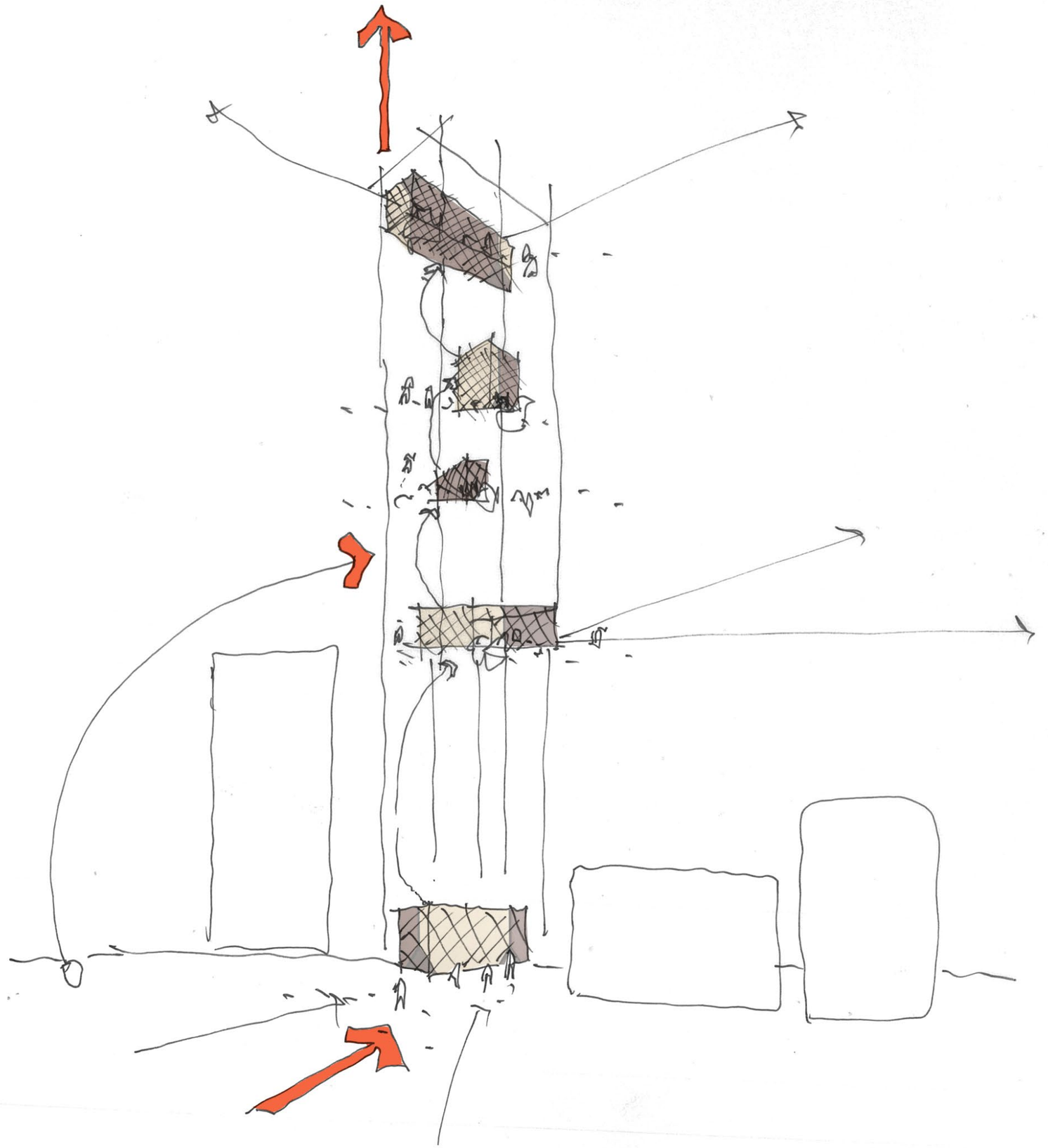
3th August 2018



“A Reference to Adelaide’s Arcades through an offering of ‘Vertical Amenities’.”

Design Statement

Taking reference from Adelaide's heritage arcade precinct, Twin Street re-imagines the idea of typical horizontal amenity through a series of vertical communal spaces spread throughout the building. Making most of the narrow site, the ground plane provides the community with strong pedestrian connections to Rundle Mall, Adelaide/Gays Arcade and Hindmarsh Square.



Contents

03
Design Response

04
Drawings

01 Site Analysis

01 Development Application
Site Location

01 Development Application
Site Location

Walkability

Twin Street is in close proximity to a number of key public offerings.

Adelaide Arcade

Gay's Arcade

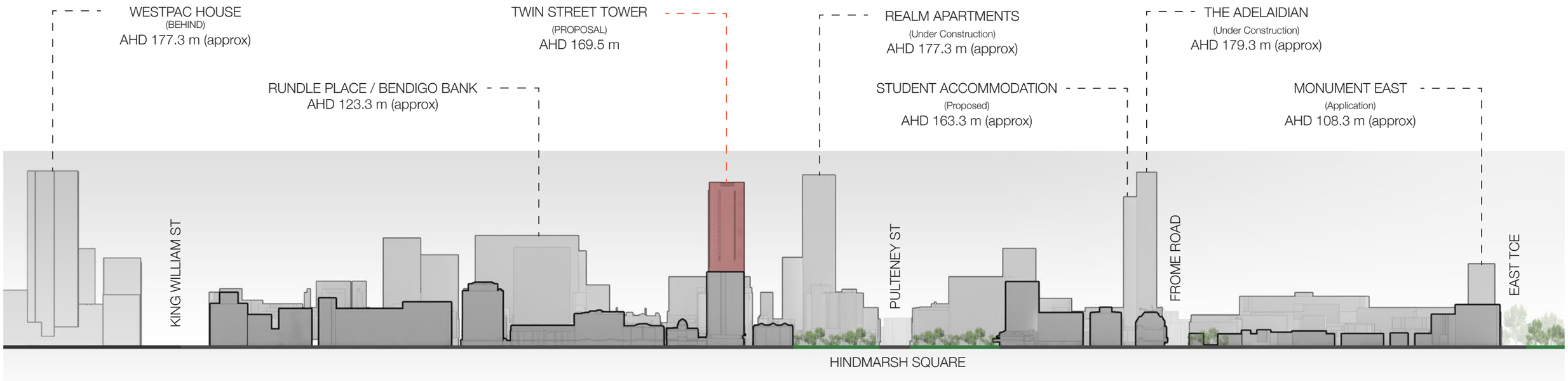
Hindmarsh Square

Rundle Mall

01 Development Application
Site Analysis

City Scale Study

Consideration of surrounding scale in a growing precinct of the Adelaide CBD (showing current and proposed buildings)



Grenfell Street Elevation (Looking North)

01 Development Application
Site Analysis

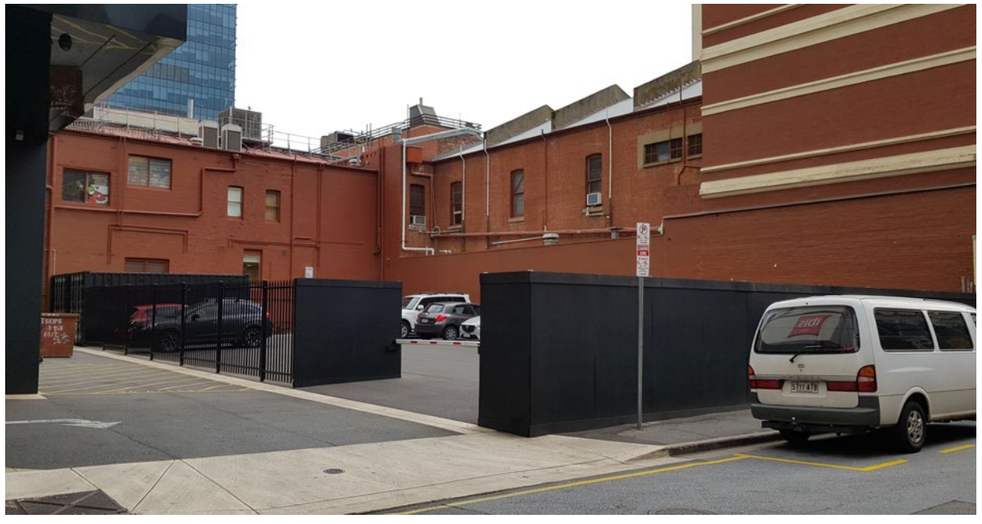
City Density Study

Twin Street is located in a significant pedestrian precinct of Adelaide

01 Development Application
Site Photos

Existing Conditions

Consideration of surrounding scale in a growing precinct of the Adelaide CBD (showing current and proposed buildings)



TWIN STREET LOOKING AT ENTRANCE

TWIN STREET LOOKING NORTH

01 Development Application
Site Photos

ADELAIDE ARCADE

SURROUNDING HERITAGE

GAY'S ARCADE

HINDMARSH SQUARE

01 Development Application
Proposed

Surrounding Context

Consideration of surrounding scale in a growing precinct of the Adelaide CBD (showing current and proposed buildings)

VIEW FROM RUNDLE MALL

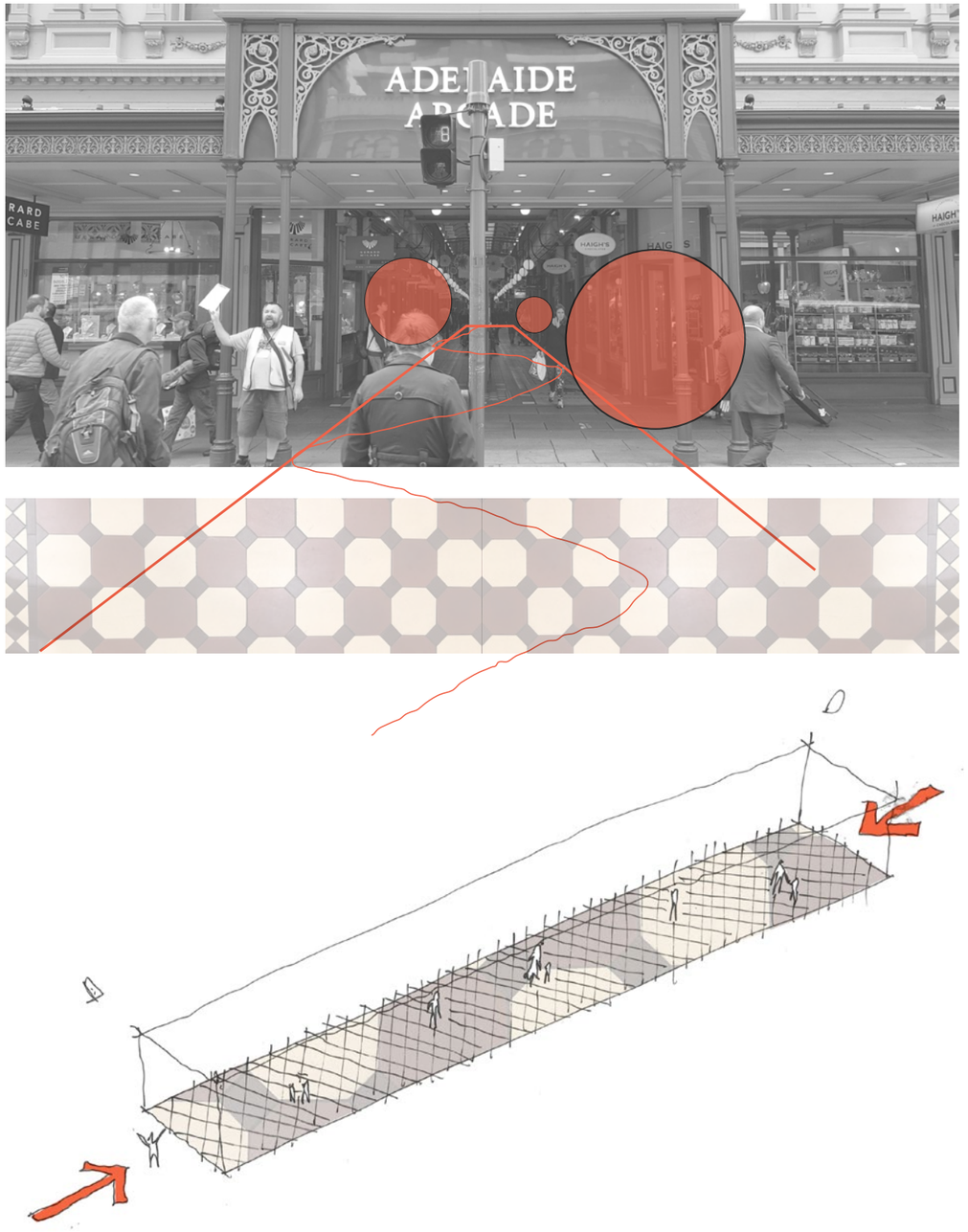
ACTIVATION OF TWIN STREET

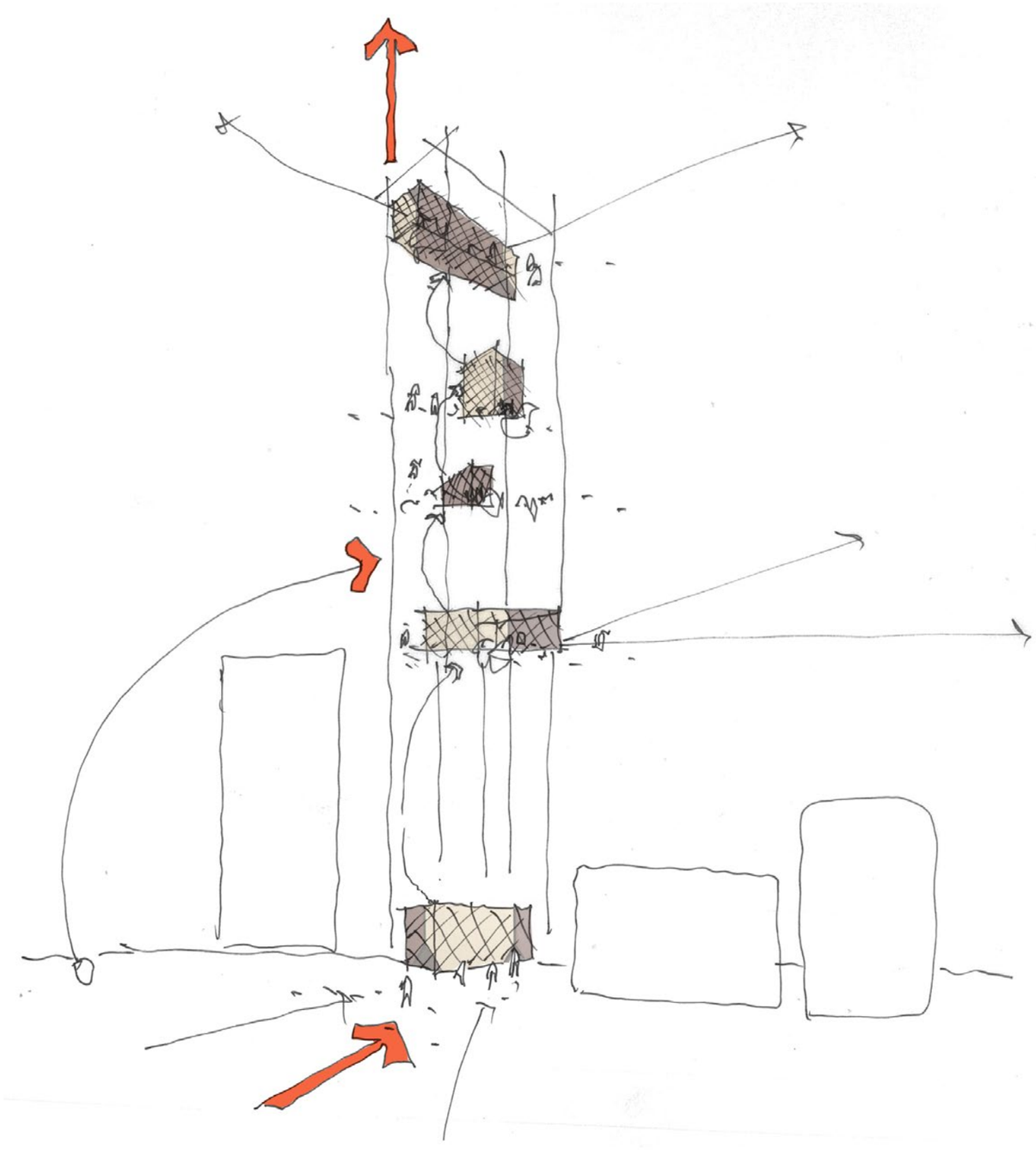
01 Development Application
Proposed

VIEW FROM HINDMARSH SQUARE

02 Design Principles

02 Development Application
Vertical Amenity





Reference Arcade

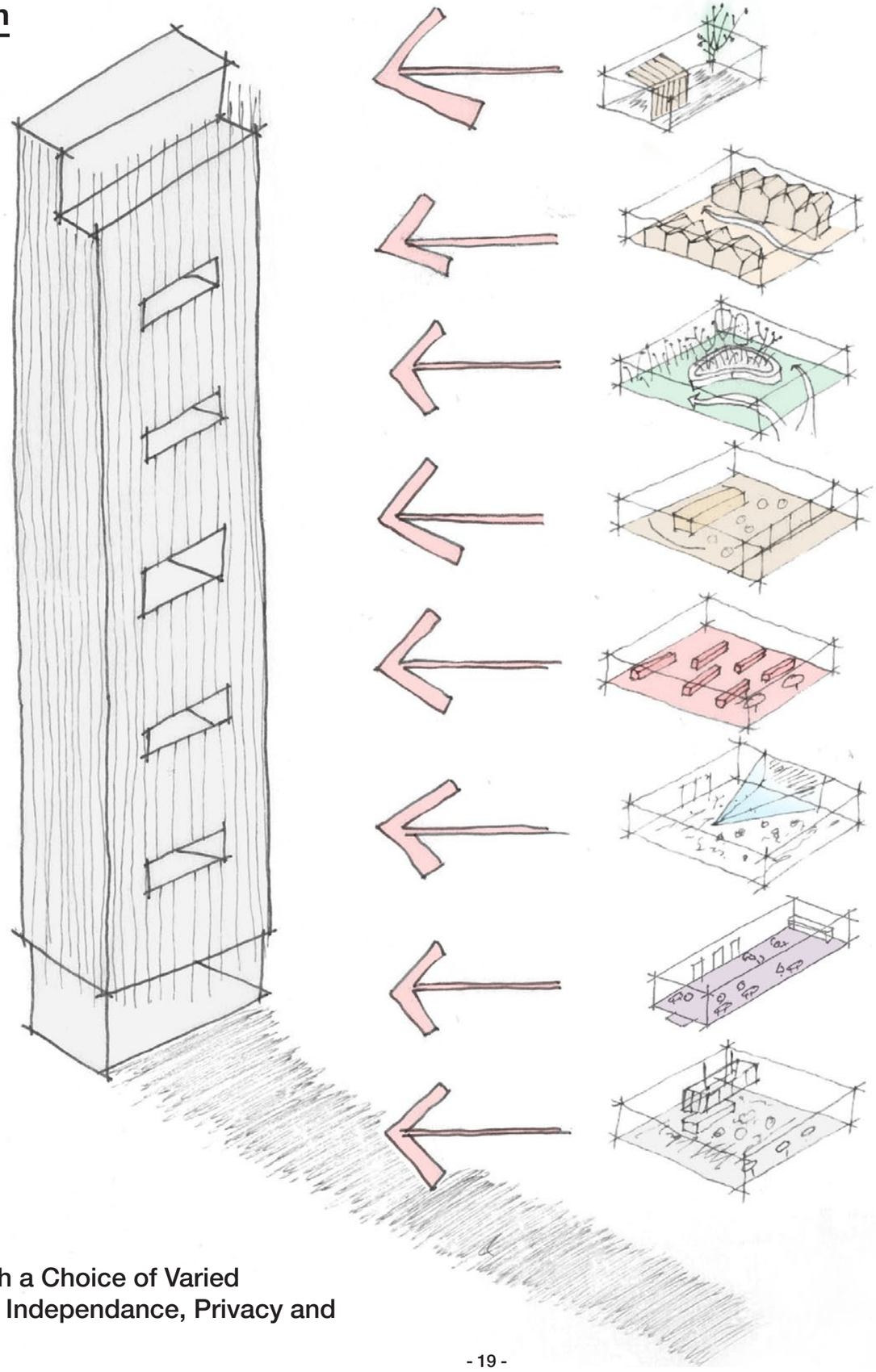
Address the horizontal amenity of nearby Arcades and Rundle Mall

Flip Vertically

Provide a series of shared amenity spaces distributed vertically throughout the building

02 Development Application
Vertical Amenity

TWIN STREET



Roof Terrace
PRIVACY LEVEL

Quiet Zone - Study Lounge
PRIVACY LEVEL

Garden retreat - Breathing floor
PRIVACY LEVEL

Laundro Lounge - Main student hub
PRIVACY LEVEL

Study / Dining Area
PRIVACY LEVEL

Cinema and events
PRIVACY LEVEL

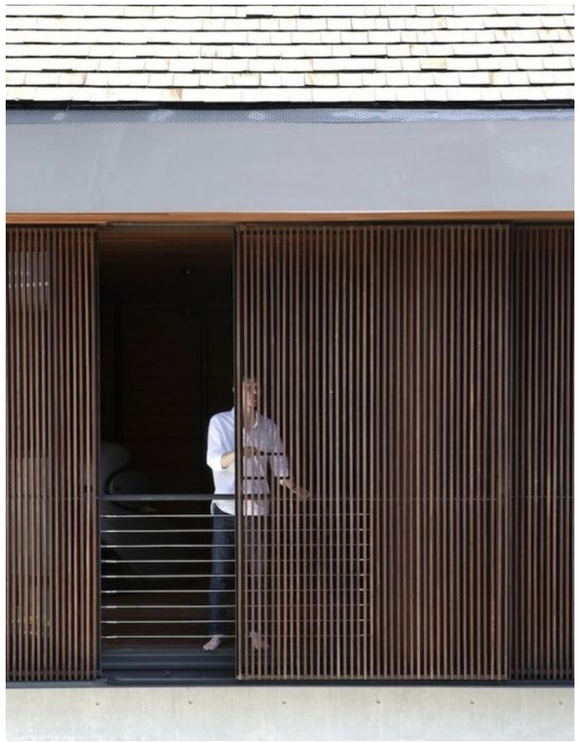
Mezzanine Student Hub
PRIVACY LEVEL

Ground floor Cafe and Retail
PRIVACY LEVEL
PUBLIC ACCESS

Spread Amenity

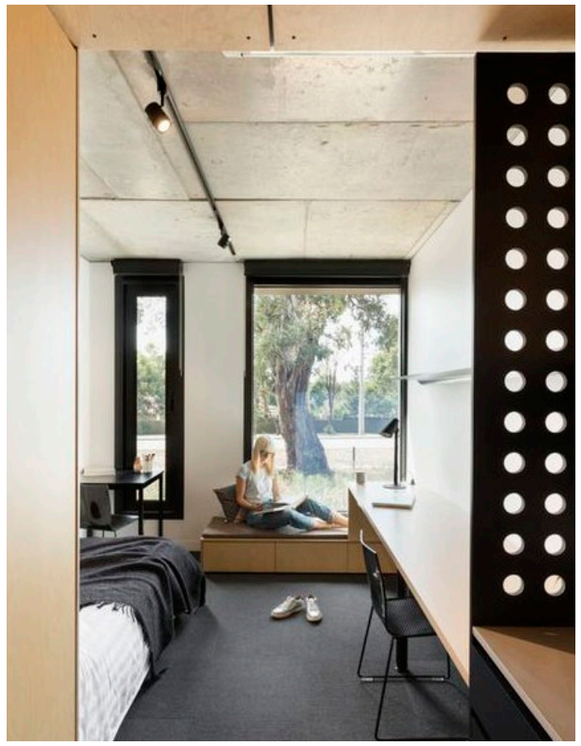
Connecting the Vertical Community with a Choice of Varied Experiences that Promote Individuality, Independance, Privacy and Social Interaction.

Design Trends



Increased Privacy

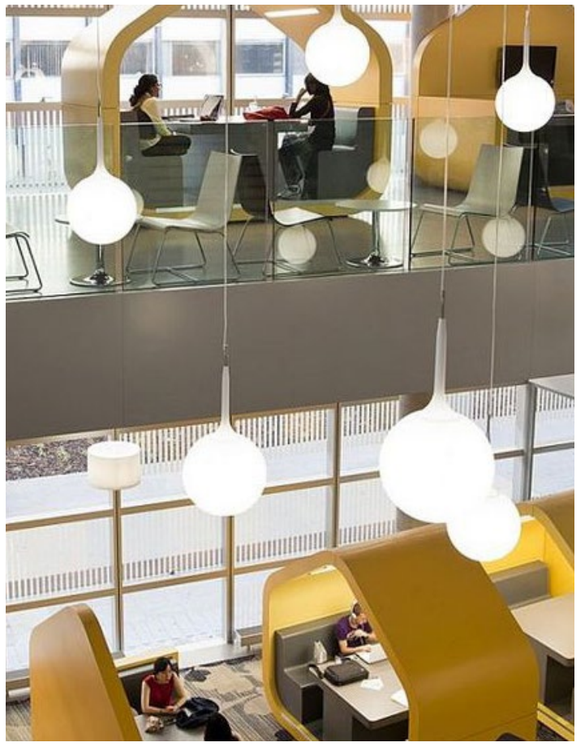
Competitive Amenities



Not ‘Campus Dorms’ Anymore

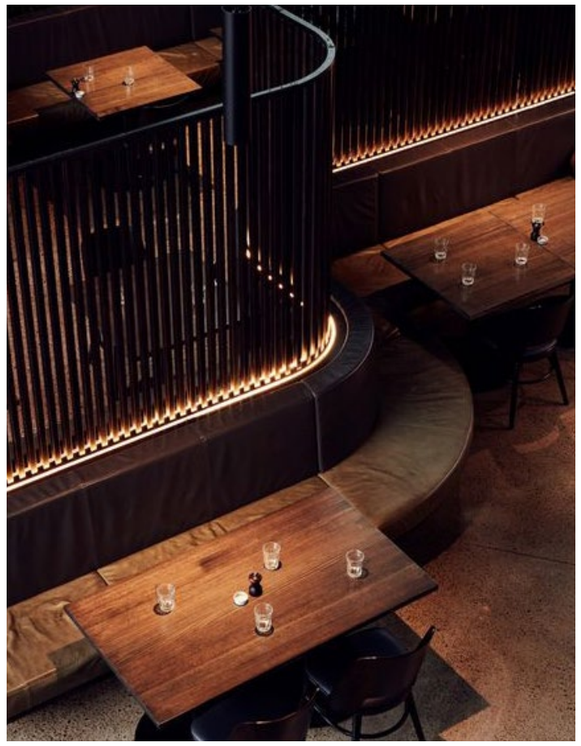
Diverse Living Preferences

02 Development Application
Design Principles



Living Learning Communities

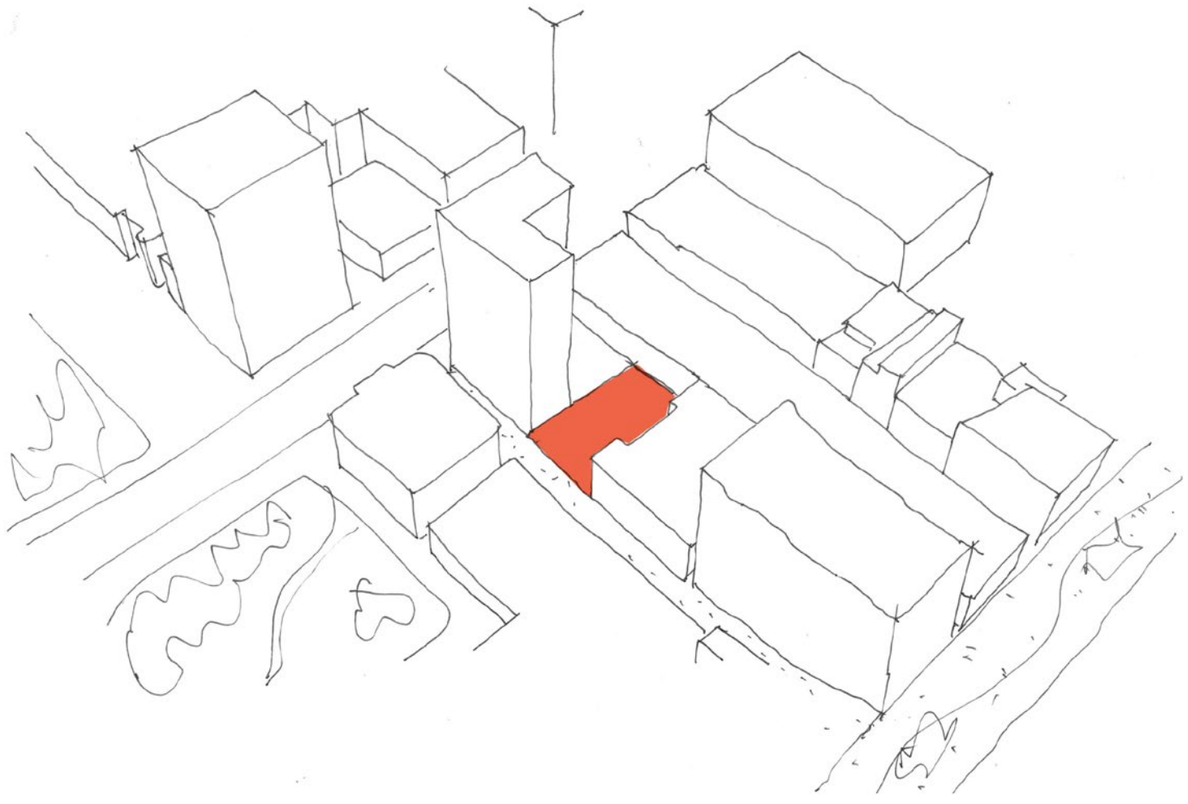
Personal Touch



Authentic Retail

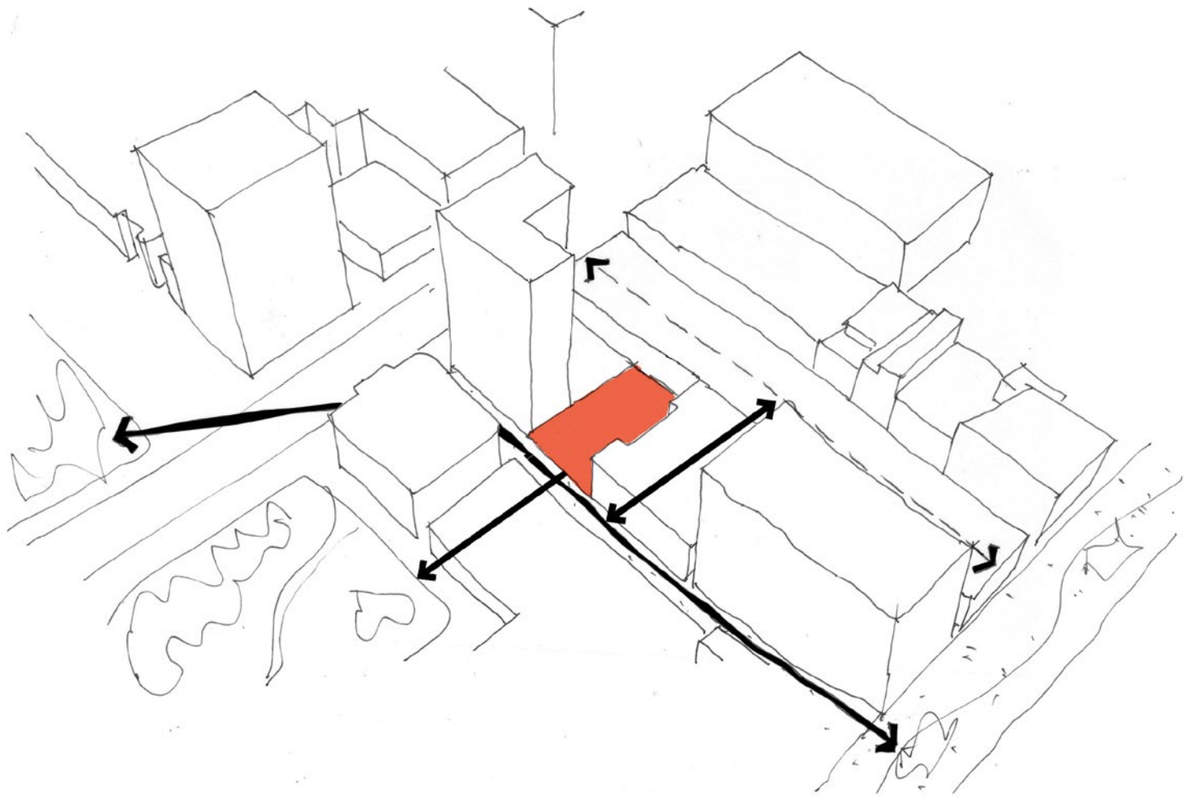
Increased Tech

02 Development Application
Illustrated Design Principles



The Site

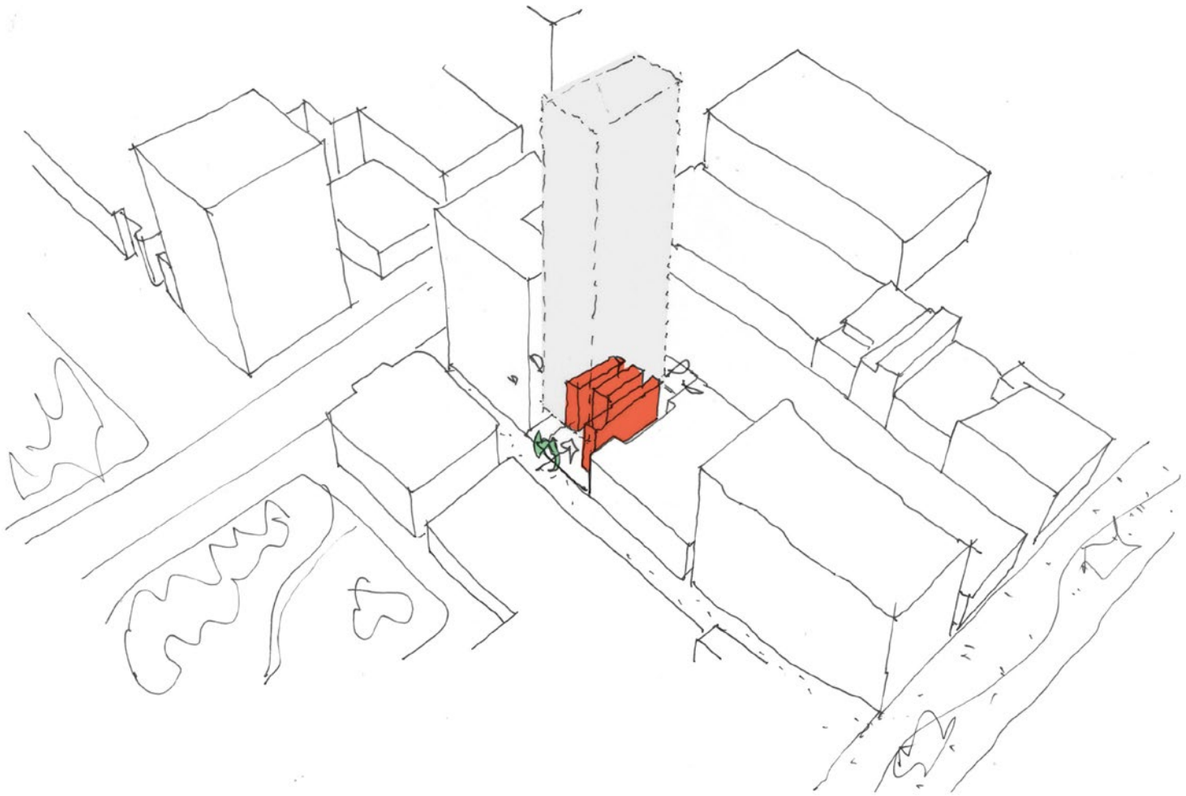
29 Twin Street is located in a prime location



Connect

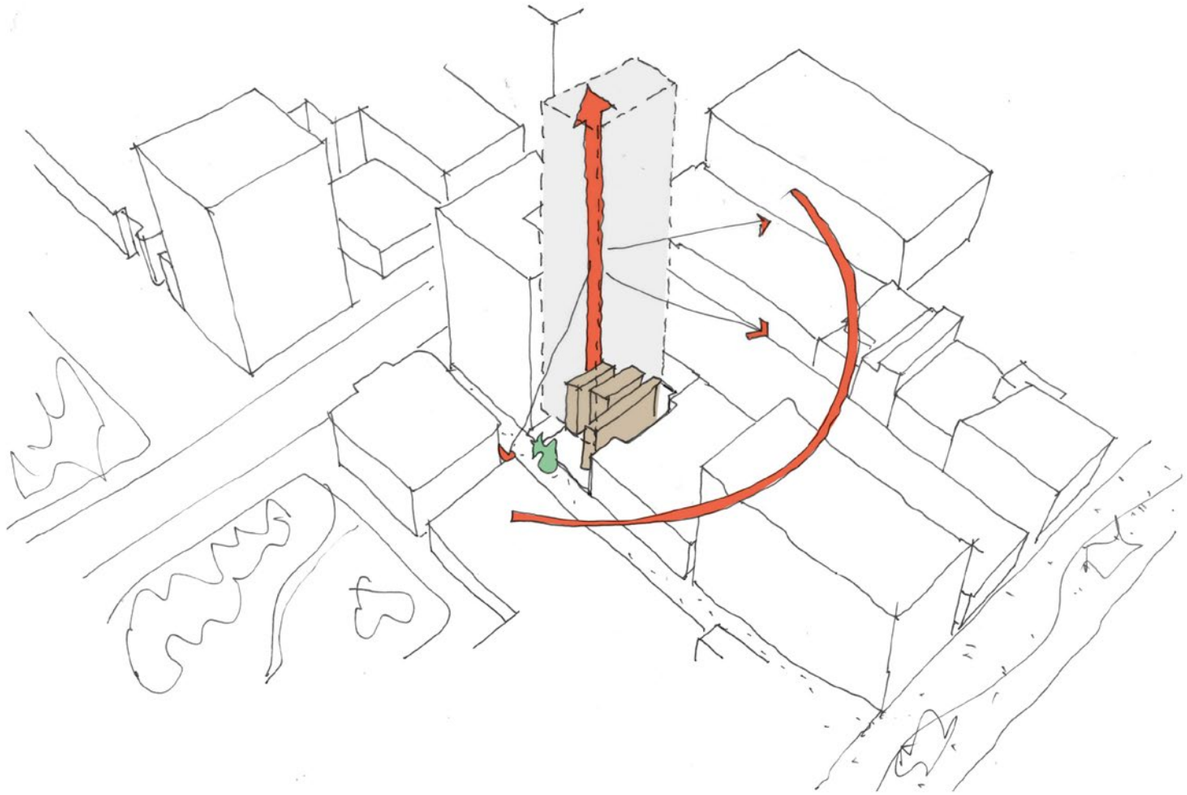
Ackowledge connections to Hindmarash Square, Rundle Mall and Adelaide Arcade

02 Development Application
Illustrated Design Principles



Scale

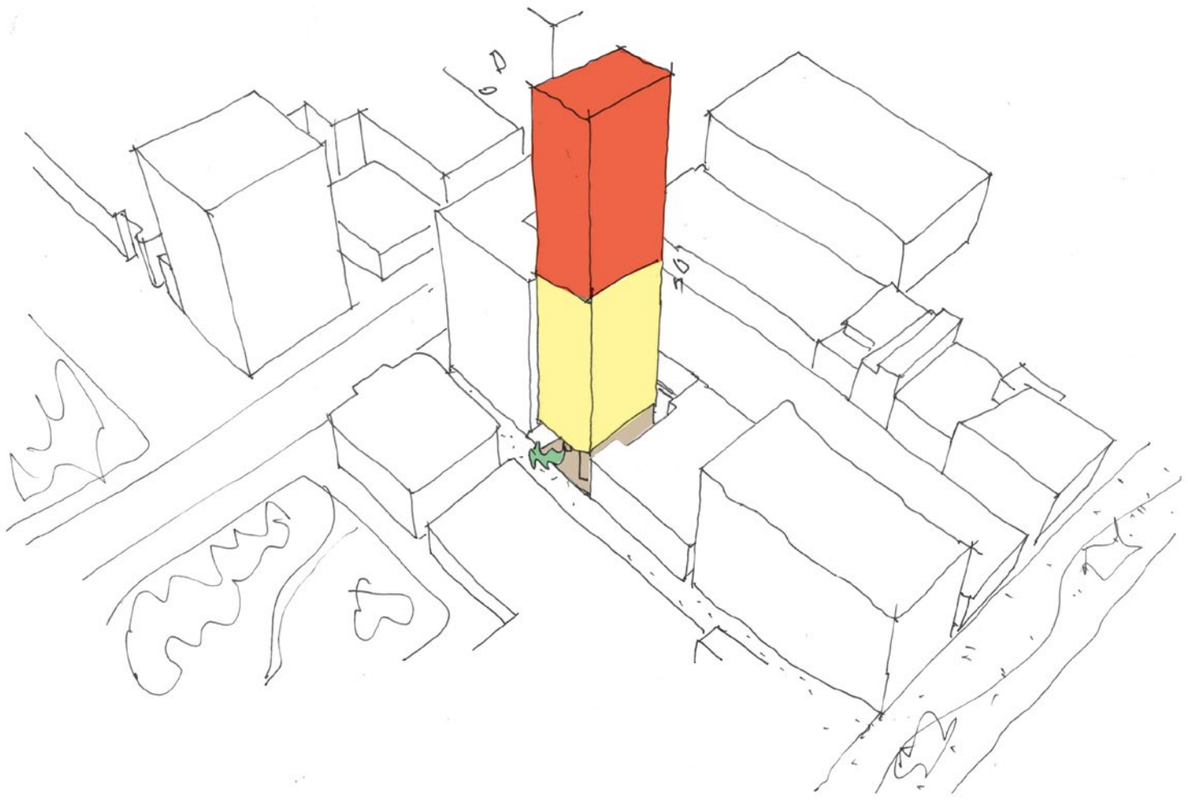
Address the scale of the street with the entry and resident/ public amenity



Core

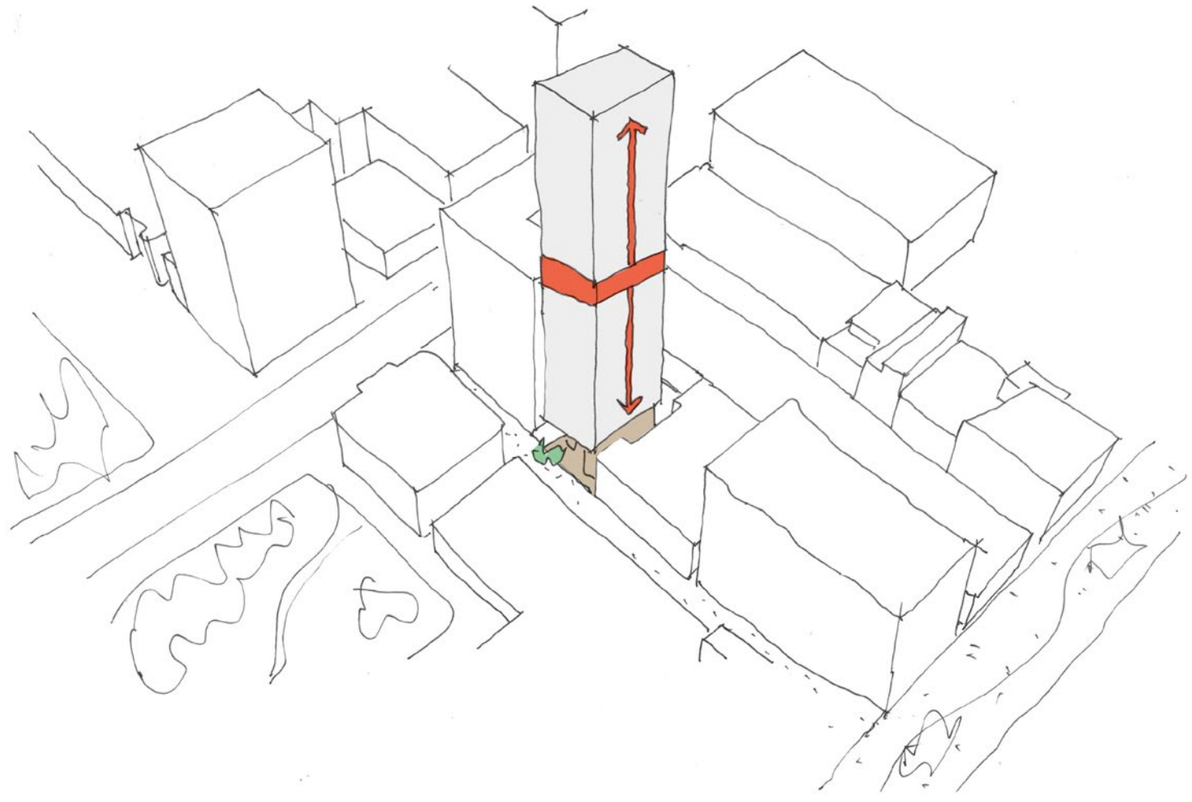
Locate the core at the South of the site and preserve views to the North, East and West

02 Development Application
Illustrated Design Principles



Types

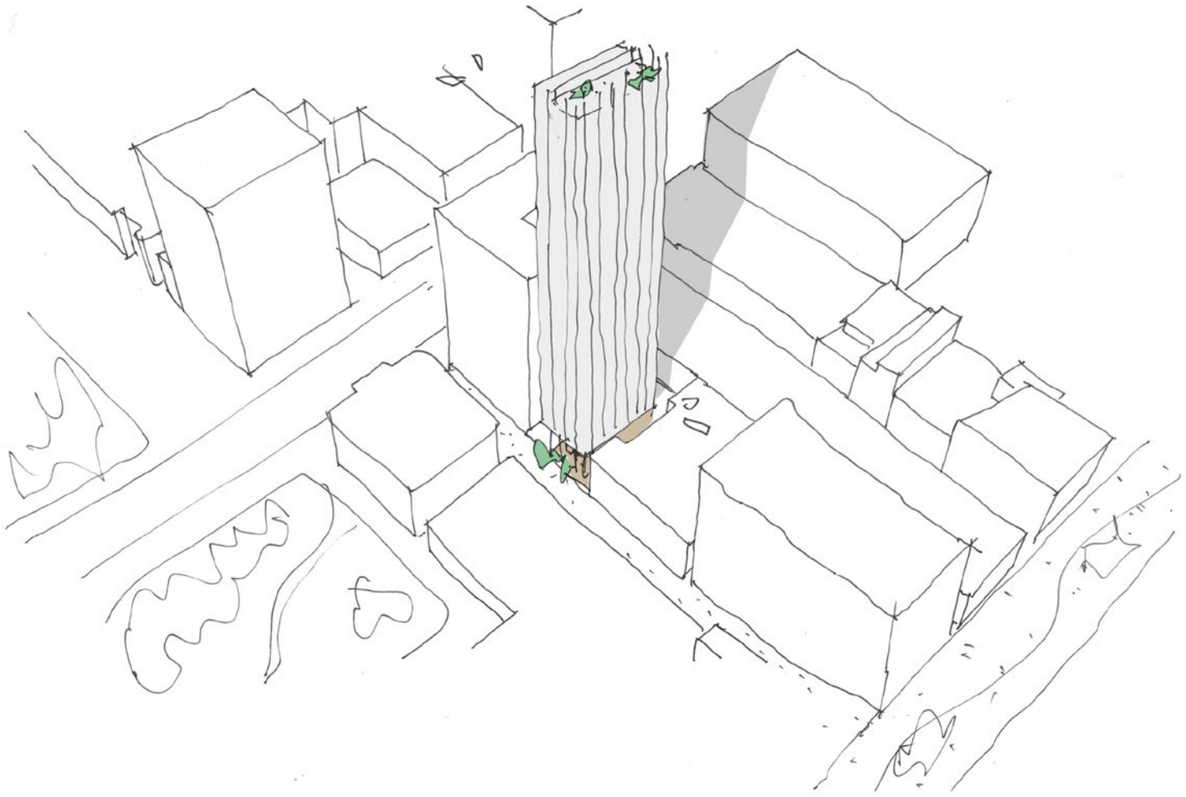
Keep it rational and try to limit floor types to 2 or 3 ‘typical plans’



Plant

Locate services in a mid level plant to free up the roof space for ideal amenity

02 Development Application
Illustrated Design Principles



Singular

Create a simple and singular expression that highlights the verticality and slender feel to the building

03 Design Response

03 Development Application
Design Response

Public Realm

TWIN STREET AT ENTRANCE

03 Development Application
Design Response

Lobby

TRIPLE HEIGHT LOBBY SPACE

03 Development Application
Design Response

Context

RELATION TO RUNDLE MALL AND HINDMARSH SQUARE

03 Development Application
Design Response

Facade

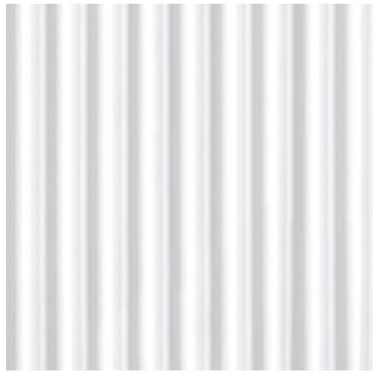
FACADE LOOKING SOUTH-EAST TO THE ADELAIDE HILLS

03 Development Application
Design Response

General Materials

Insitu Concrete
Location: Core Walls

Reflective Glass Panel
Location: Facade Type 01



White Corrugated Panel
Location: Facade Type 02

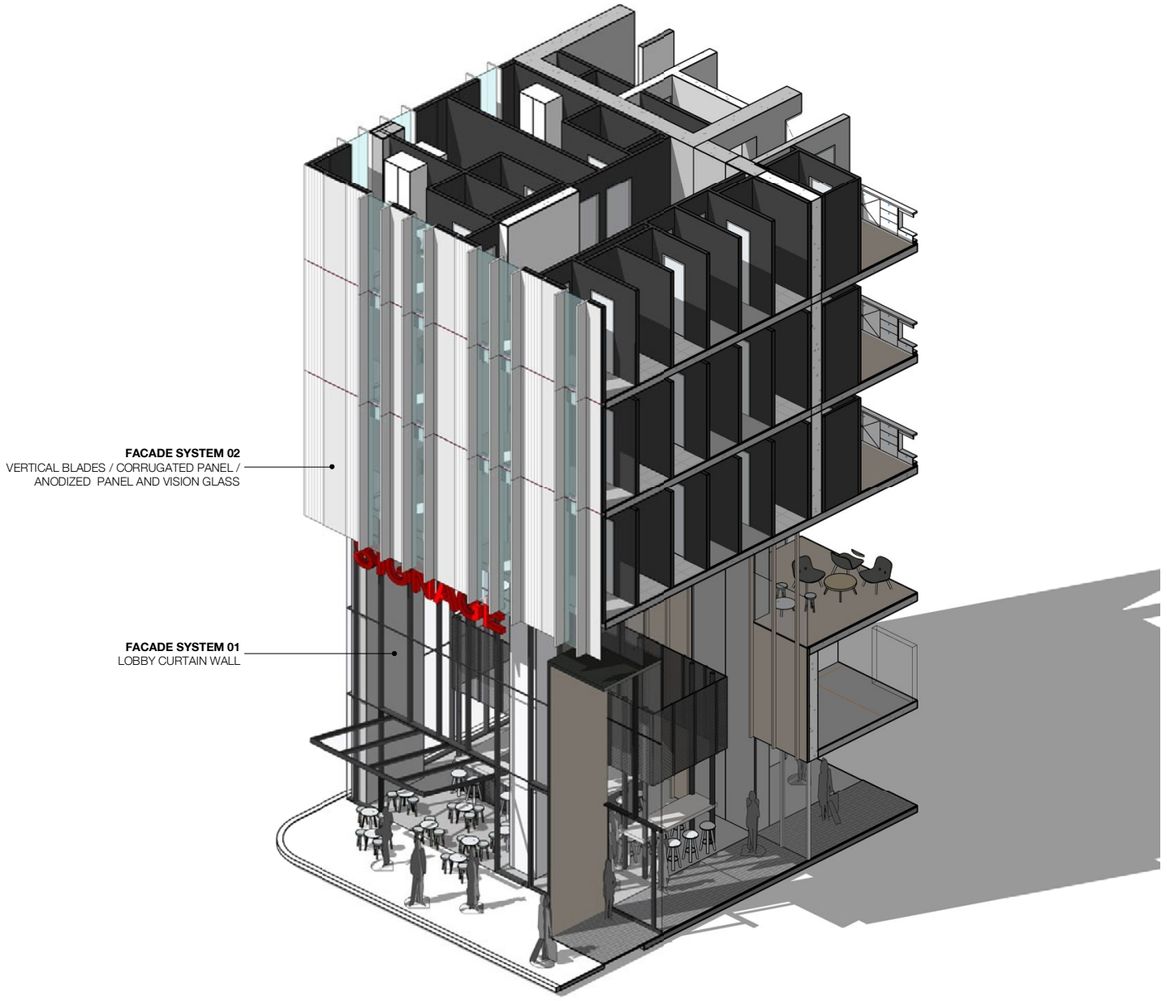
Silver Anodised Panel
Location: Facade Type 03

Black Zincalume
Location: Exterior - Amenity Boxes

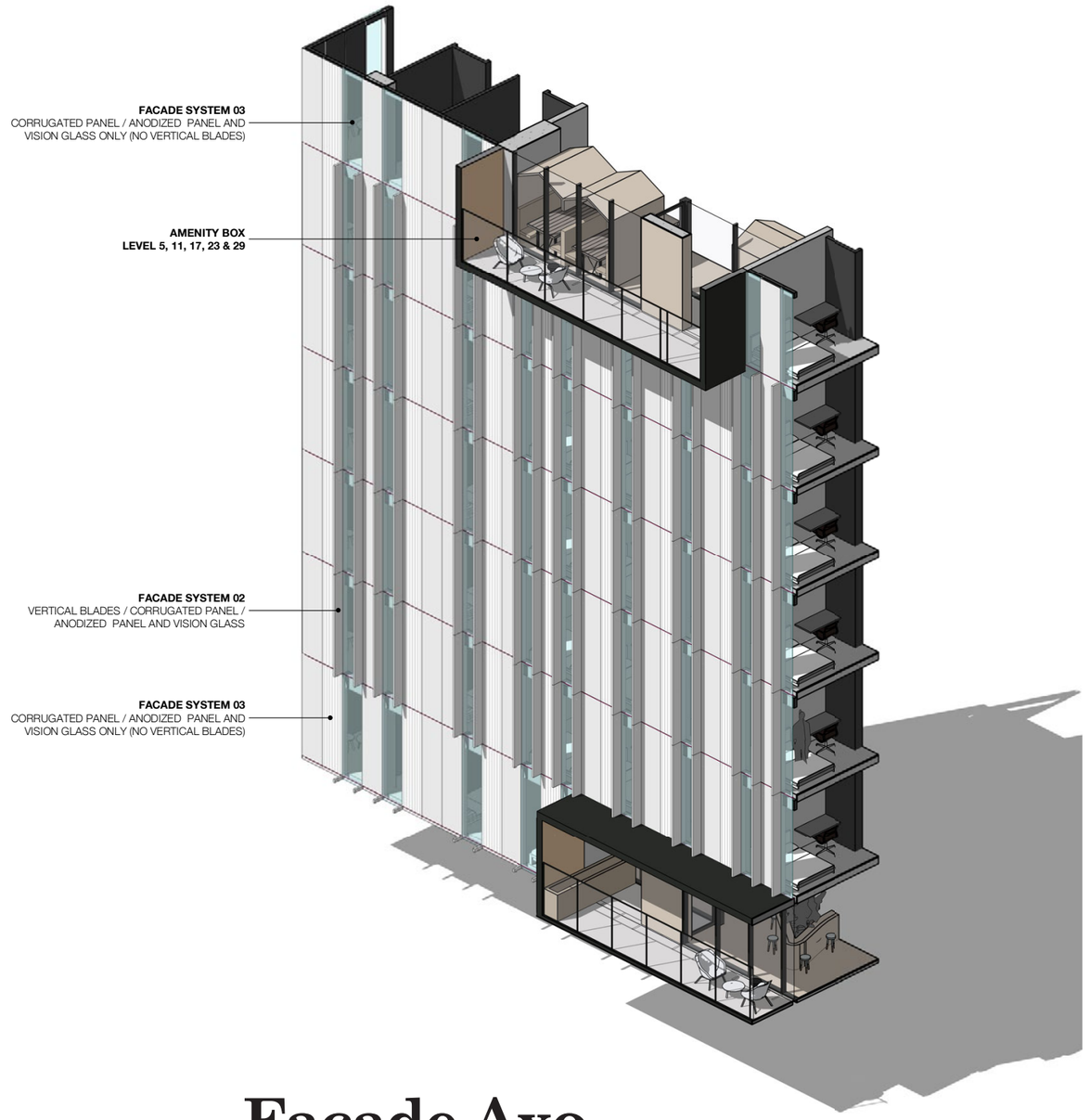
Timber
Location: Interior - Amenity Boxes

03 Development Application
Design Response

Facade



Lobby / Entry Axo

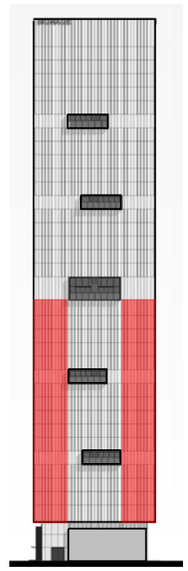


Facade Axo

03 Development Application
Apartment Types

6 Bed 6 Bath

SHARED KITCHEN

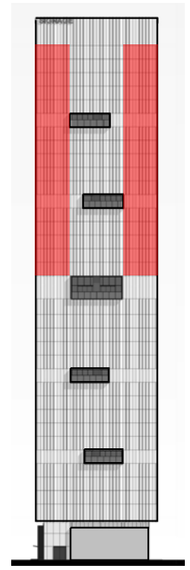


KEY

03 Development Application
Apartment Types

5 Bed 5 Bath

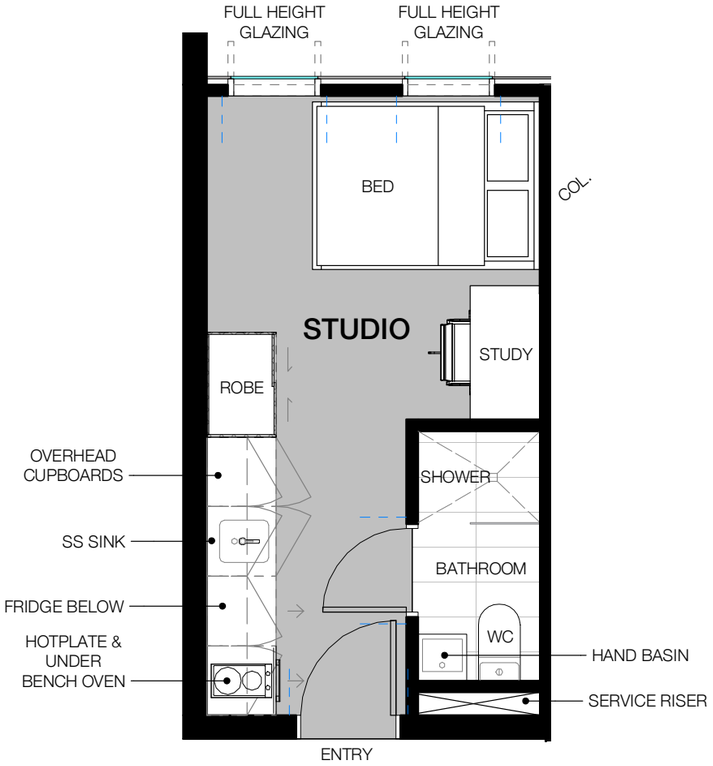
SHARED LOUNGE / KITCHEN

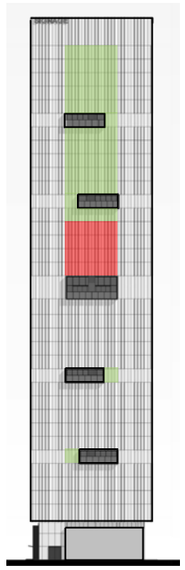


03 Development Application
Apartment Types

Studio + DDA

DDA STUDIO

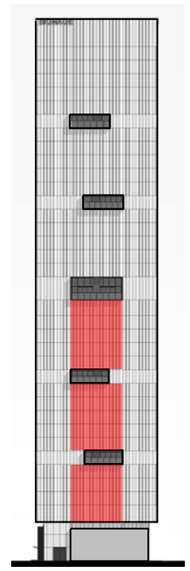




03 Development Application
Apartment Types

Twin Share

TWIN SHARE APARTMENT

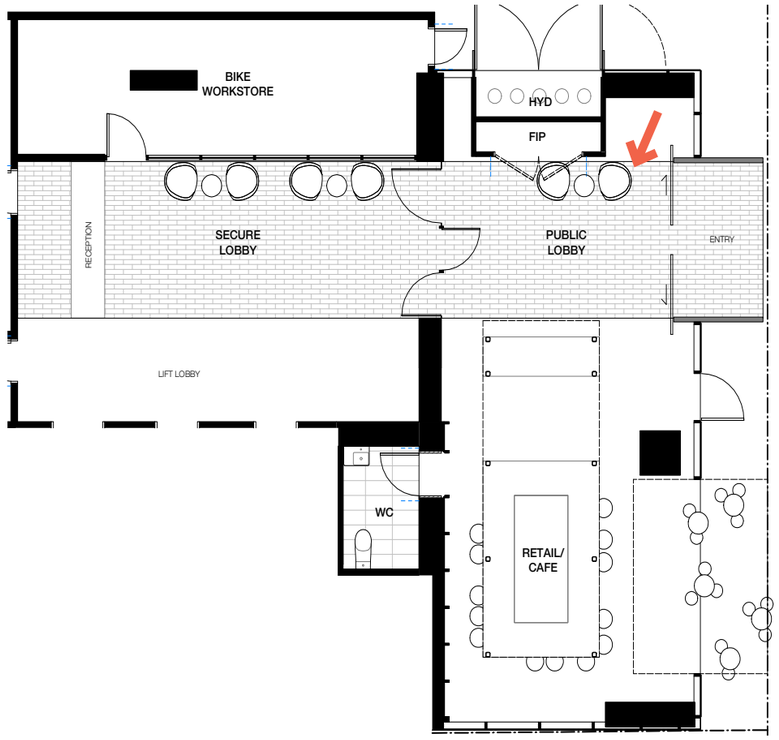


KEY

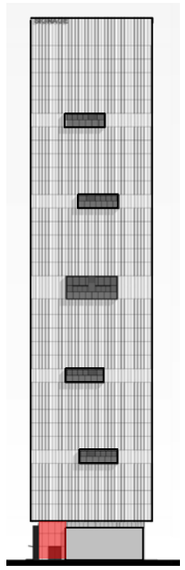
03 Development Application
Design Response

Ground Floor Amenity

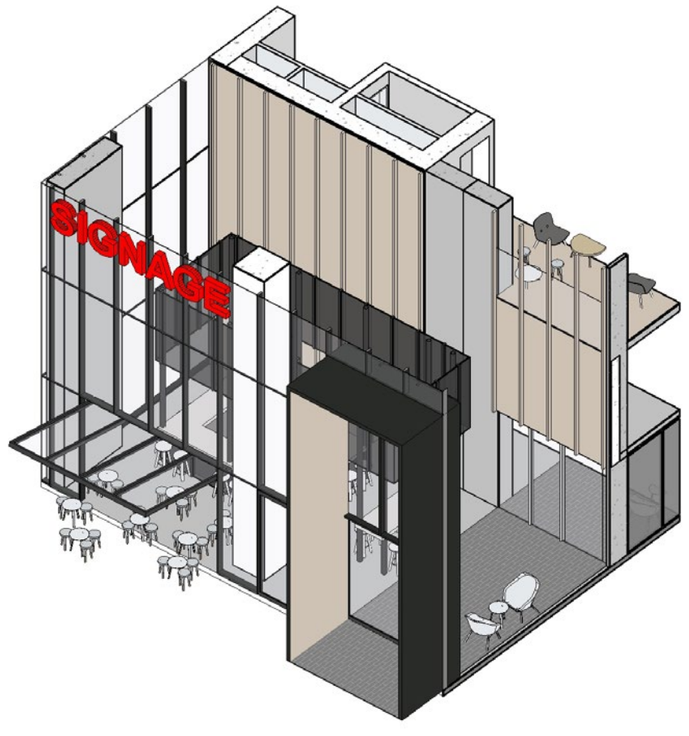
GROUND FLOOR CAFE / RETAIL LOBBY



PLAN



KEY

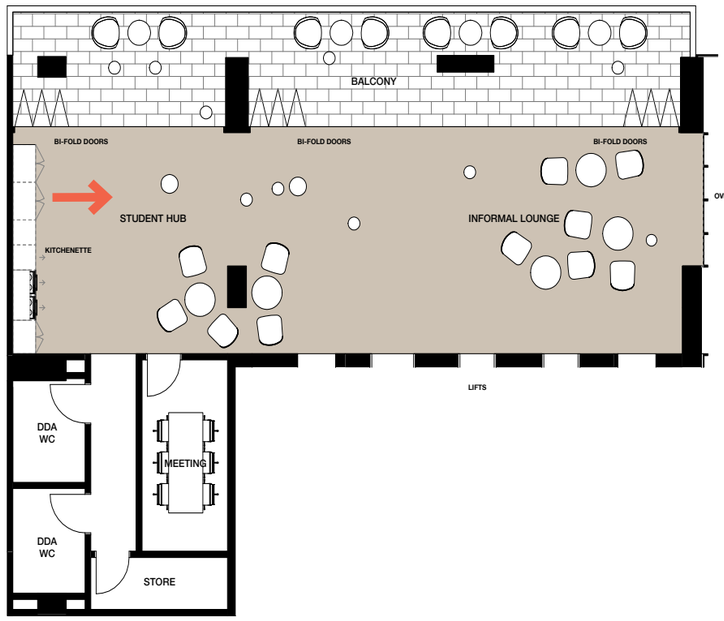


AXO

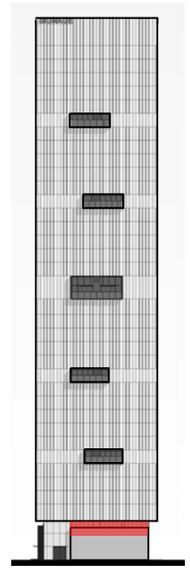
03 Development Application
Design Response

Mezzanine Level Amenity

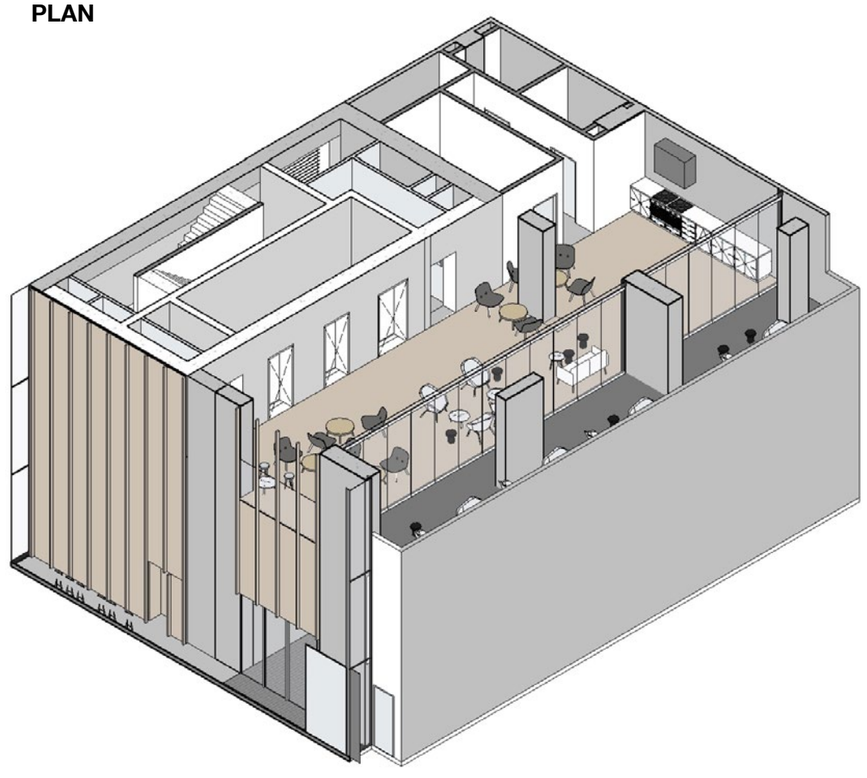
MULTI PURPOSE STUDENT HUB / INFORMAL LOUNGE



PLAN



KEY

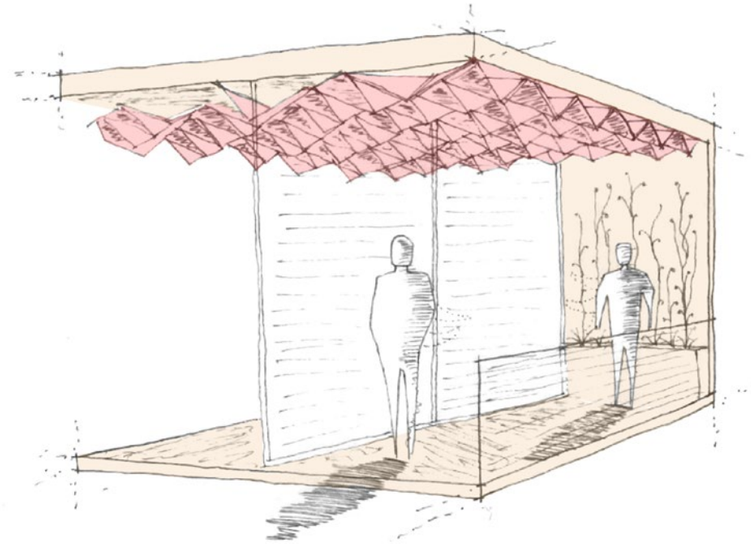


AXO

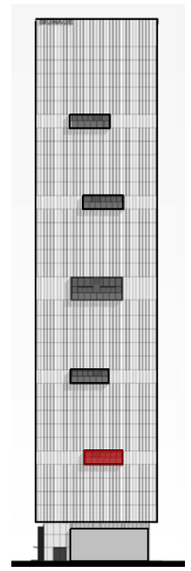
03 Development Application
Design Response

Level 05 Amenity

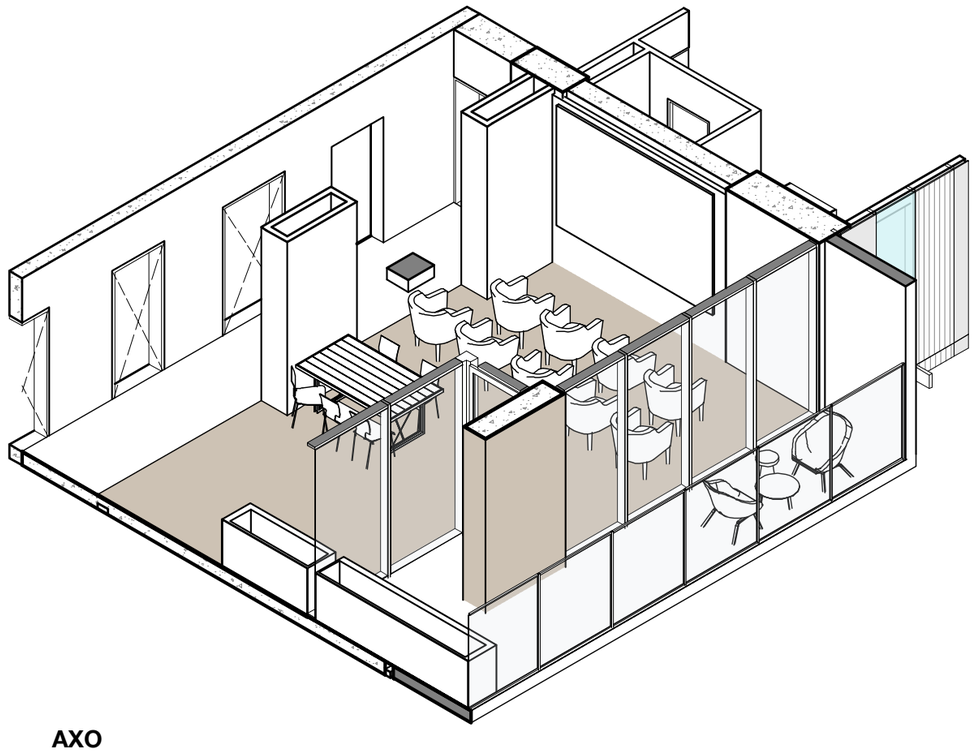
CINEMA AND EVENT SPACE



CONCEPT



KEY

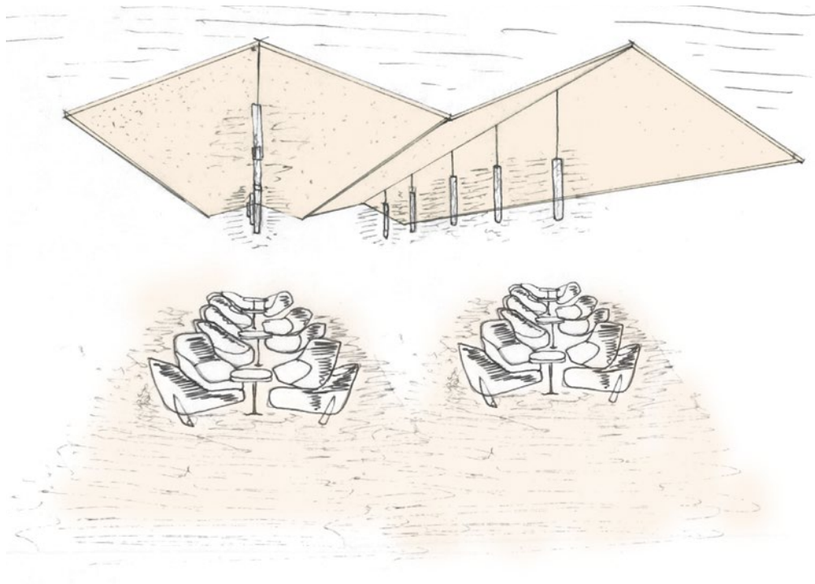


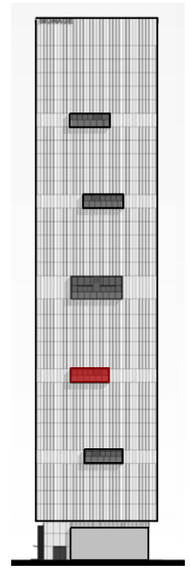
AXO

03 Development Application
Design Response

Level 11 Amenity

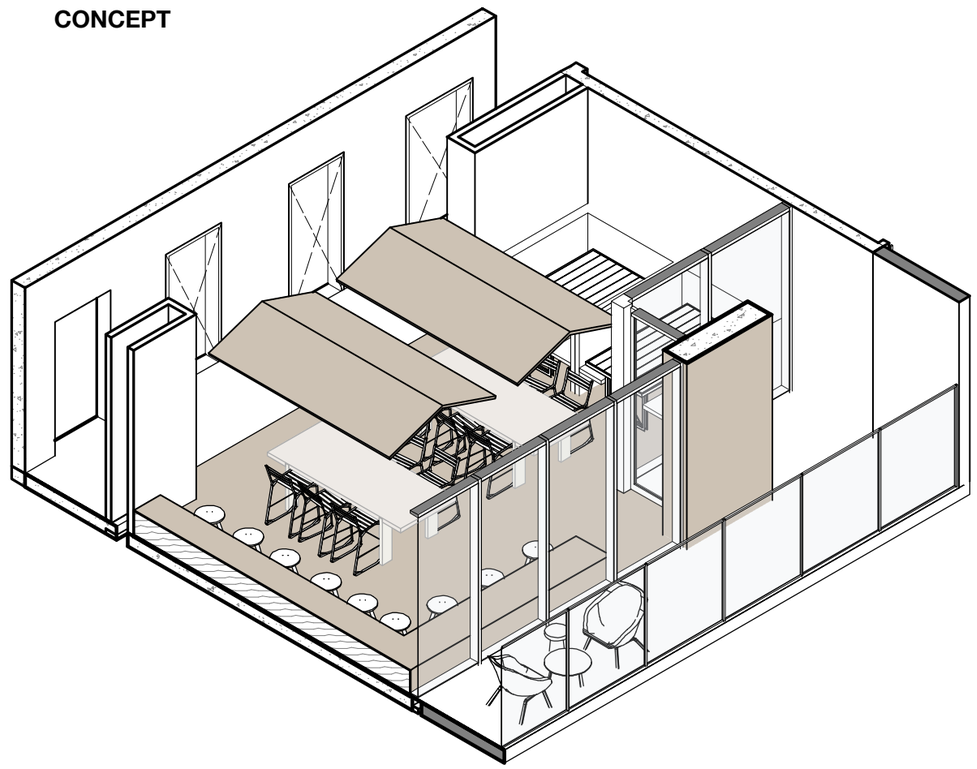
MULTI PURPOSE STUDY AND DINING ZONE





KEY

CONCEPT

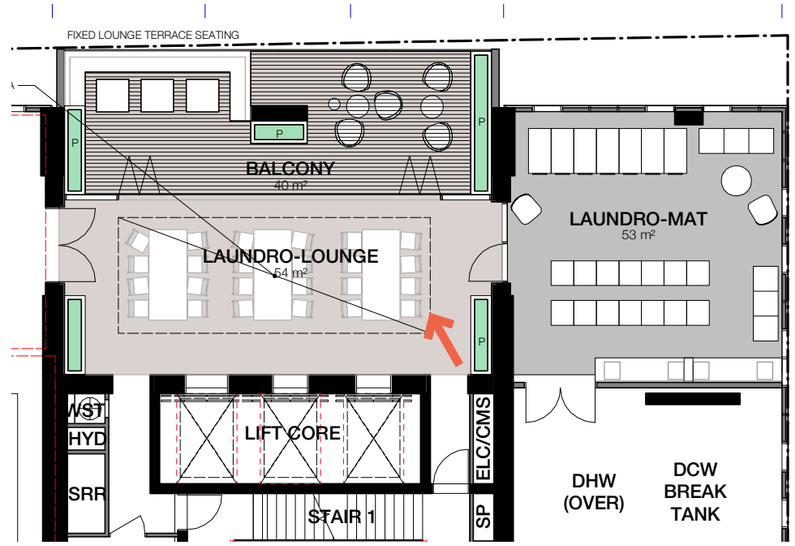


AXO

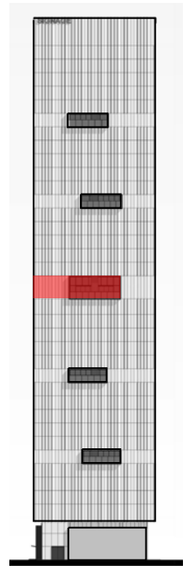
03 Development Application
Design Response

Level 17 Amenity

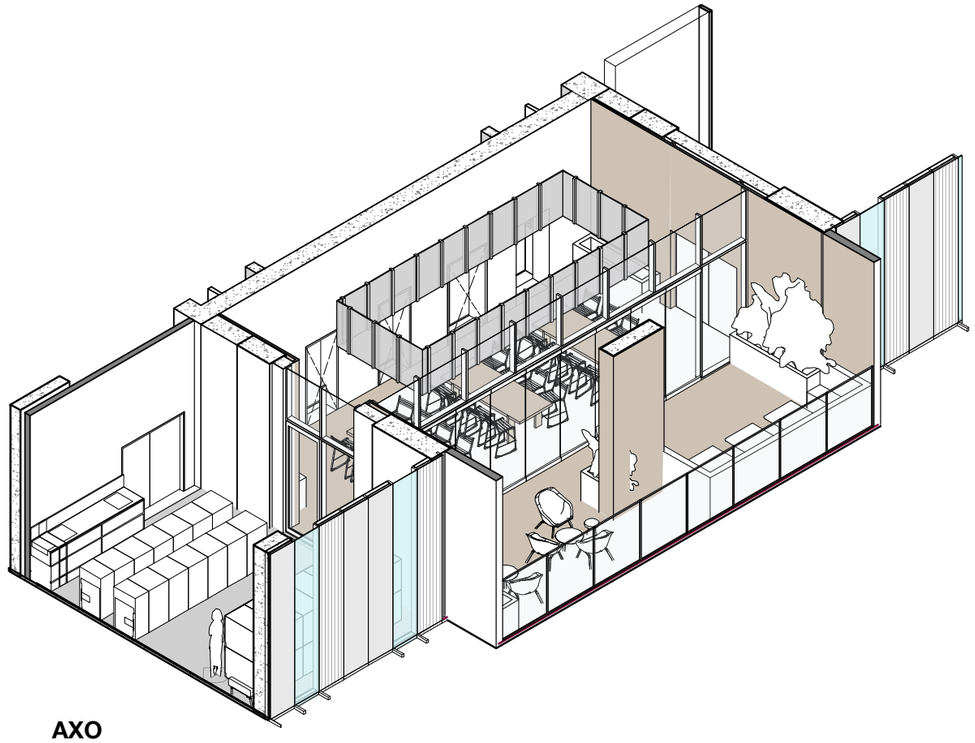
‘LAUNDRO - LOUNGE’



PLAN



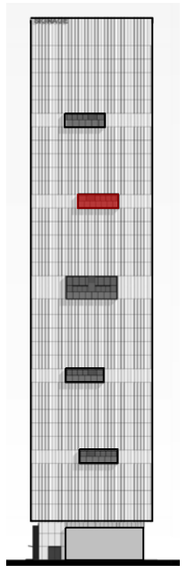
KEY



AXO

03 Development Application
Design Response

Level 23 Amenity

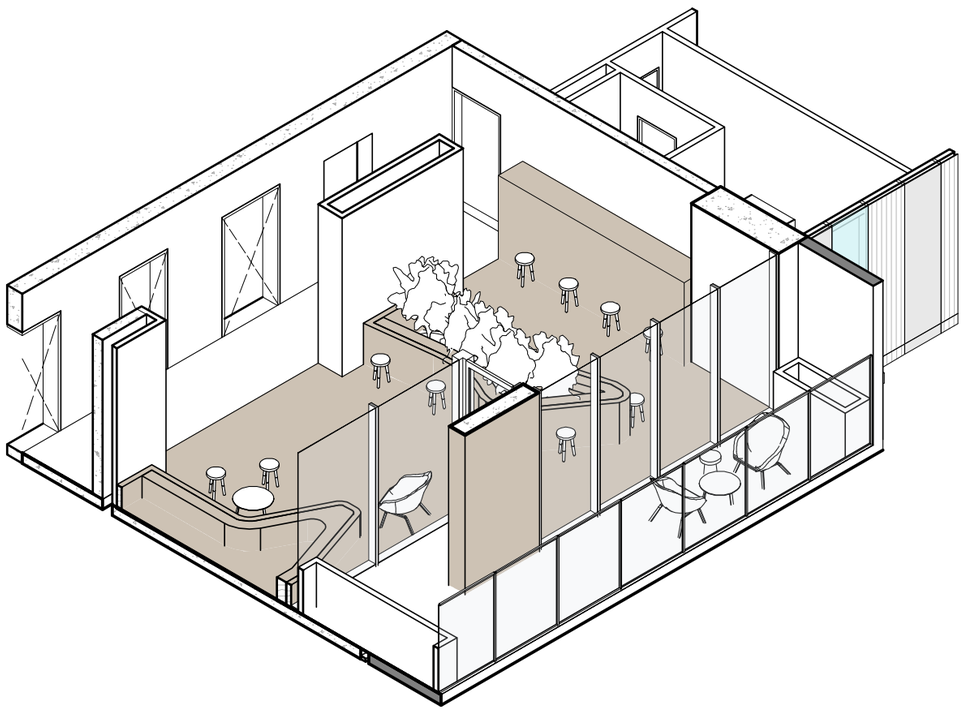


KEY

‘BREATHING’ FLOOR - GARDEN SANCTUARY

CONCEPT

CONCEPT

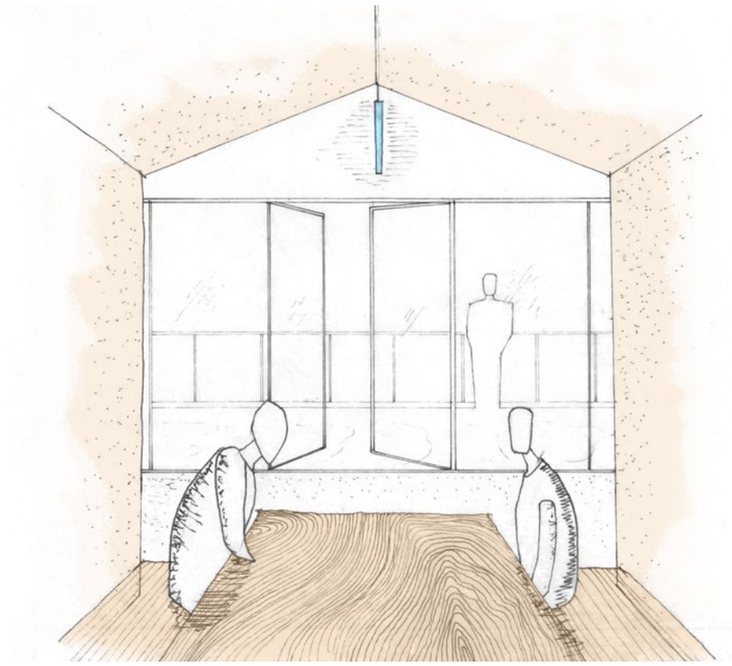


AXO

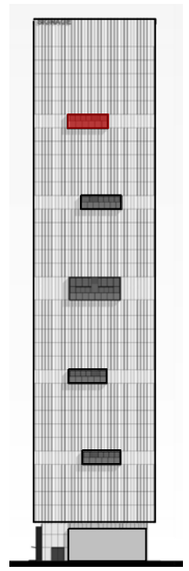
03 Development Application
Design Response

Level 29 Amenity

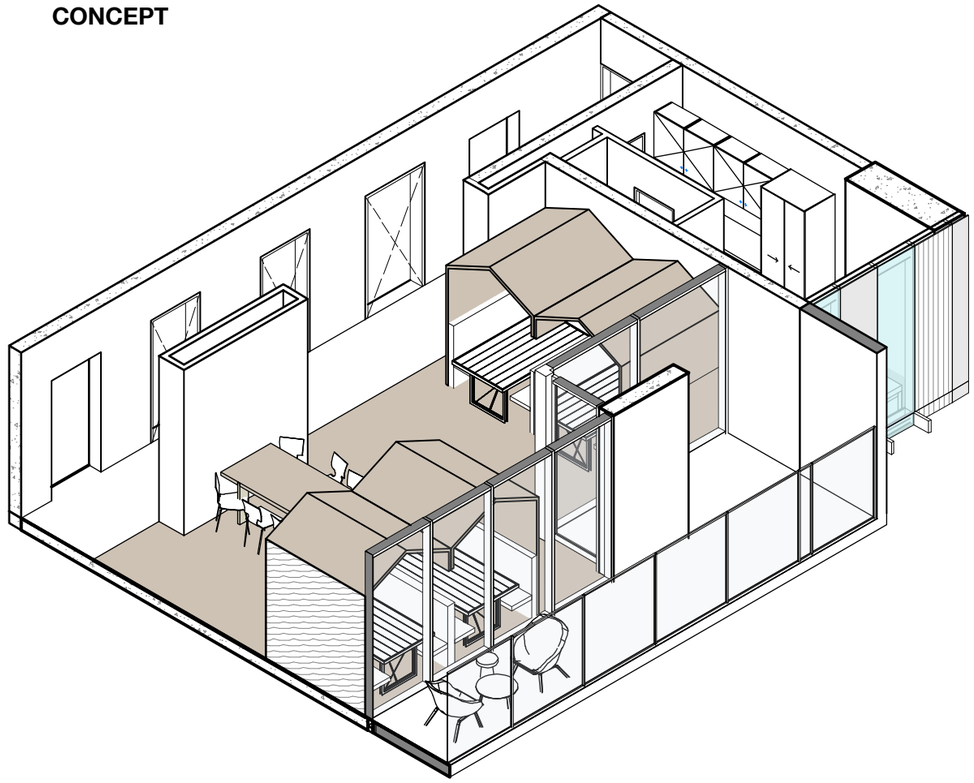
‘QUIET ZONE’ - SHARED STUDY BOOTHS



CONCEPT



KEY

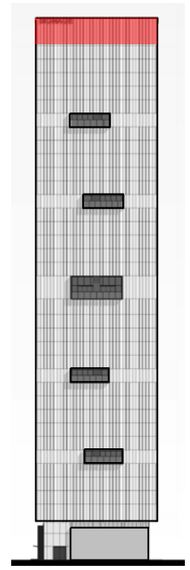


AXO

03 Development Application
Design Response

Rooftop Amenity

SHARED ROOFTOP AMENITY

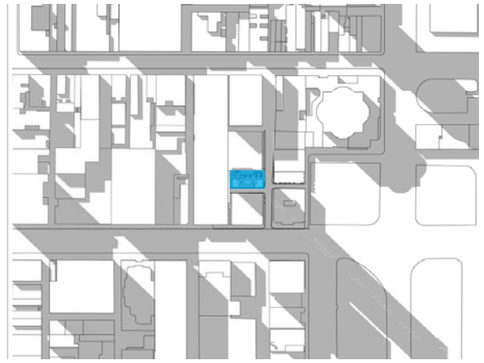


KEY

03 Development Application
Shadow Diagrams and Thermal Performance

WINTER SOLSTICE **9AM**

WINTER SOLSTICE **12PM**



WINTER SOLSTICE **3PM**

EQUINOX **9AM**

EQUINOX **12PM**

EQUINOX **3PM**

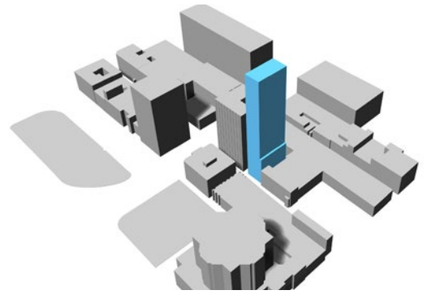
SUMMER SOLSTICE **9AM**

SUMMER SOLSTICE **12PM**

SUMMER SOLSTICE **3PM**

Preparation of Facade Model and Environment

Basic Building Envelope and Site Context Generated in GH



Floor Slabs | Parametric "Lattice" | Extrusions from Lattice

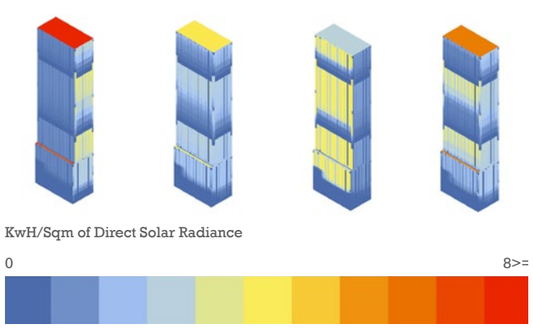
From a basic Extrusion based model, a Parametric lattice is created. The Lattice contains a number of alterable parameters (see Section Left). a Genetic algorithm calculates the optimal form to minimise direct solar radiation at undesirable times and to maximise it when desirable.

Monthly Average Temperatures and Direct Radiance

Daily Hourly Temperature Chart

Solar Radiance Analysis and Optimisation

Dec 22 | Mar 19 | Jun 21 | Sep 19

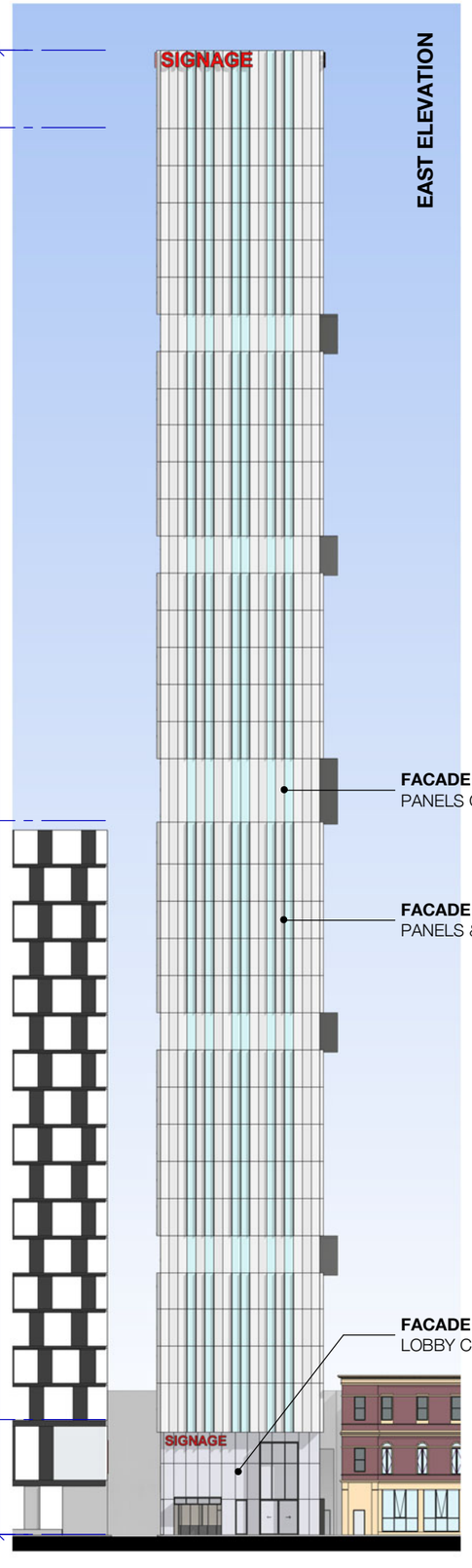


SOLAR STUDY

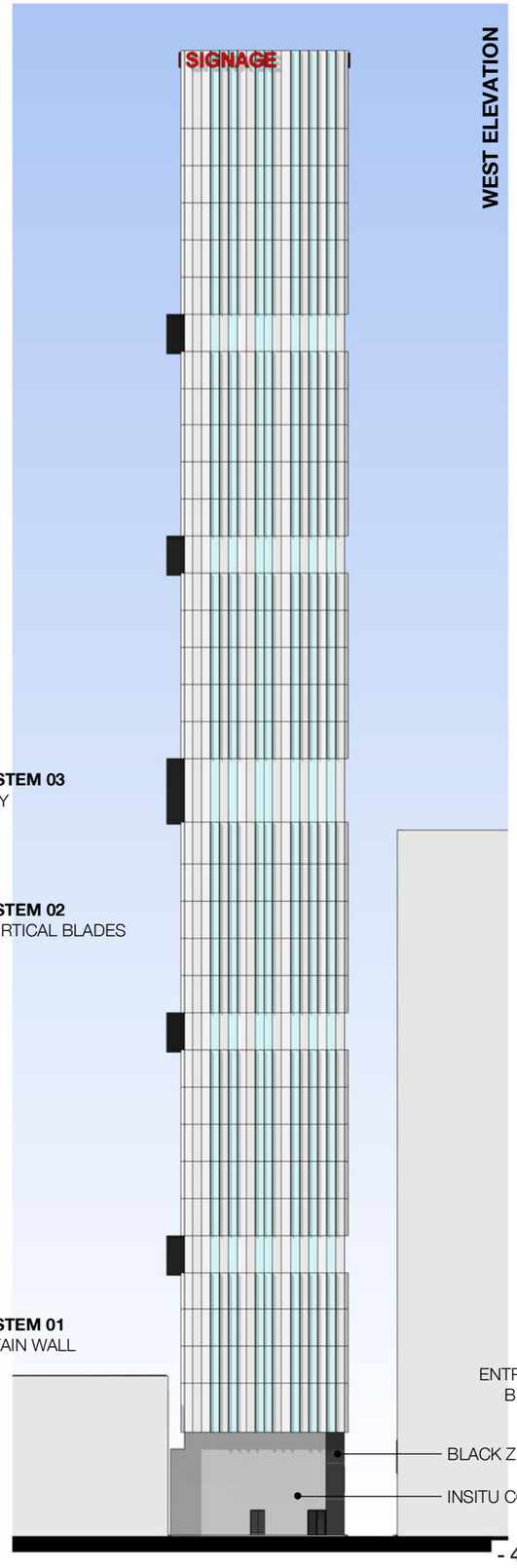
03 Development Application
Elevations

36 AHD169500 ROOF
35 AHD163000 ROOF TOP DECK
124200
17 AHD105000 PLANT
01 AHD54900 LEVEL 01
00 AHD45300 GROUND

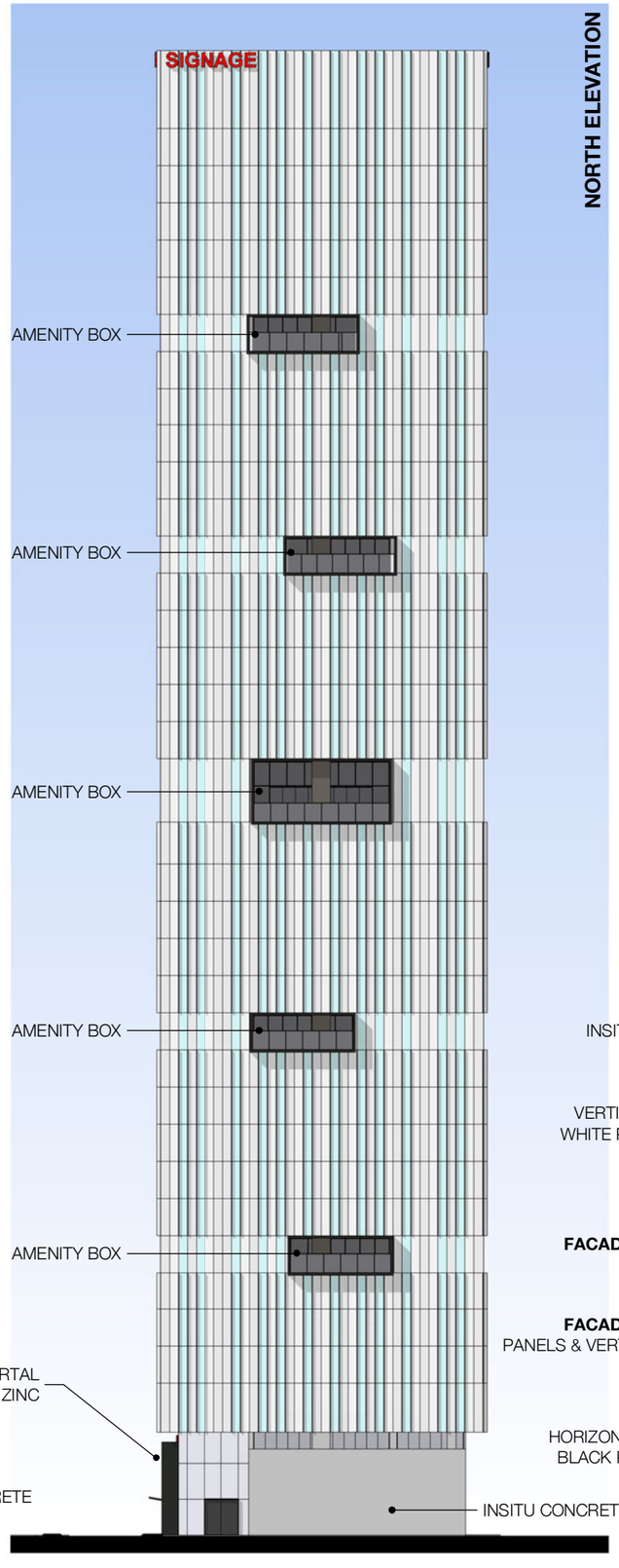
EAST ELEVATION



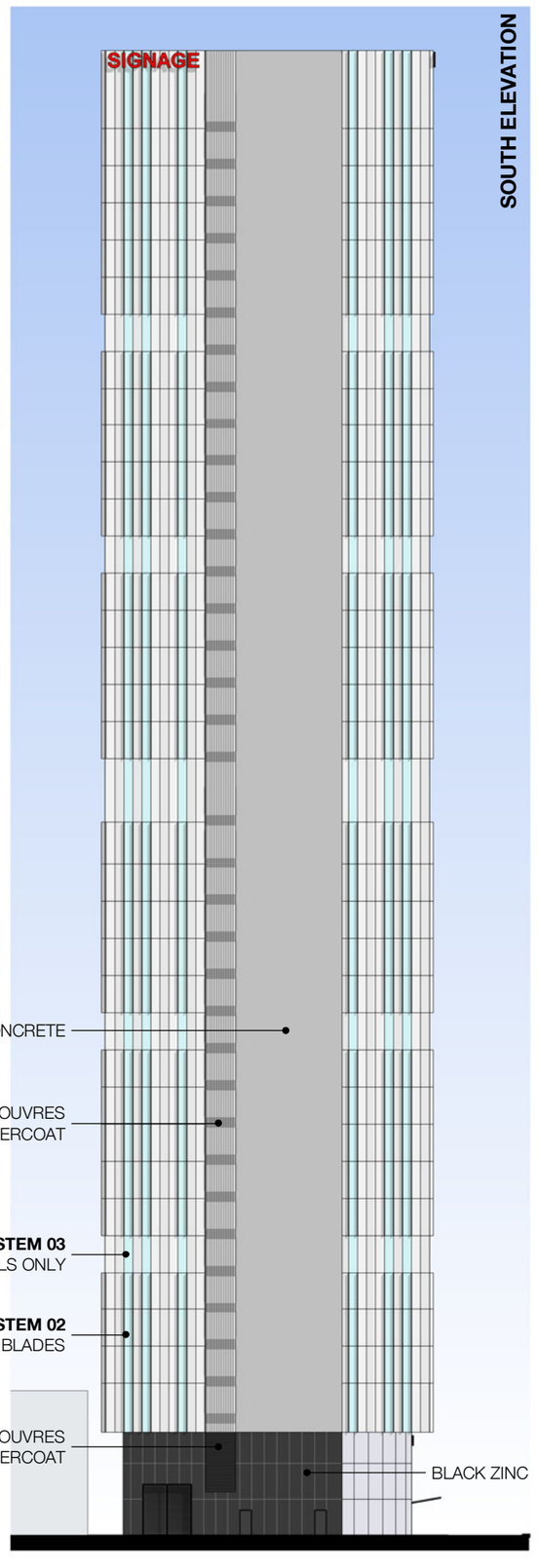
WEST ELEVATION



NORTH ELEVATION

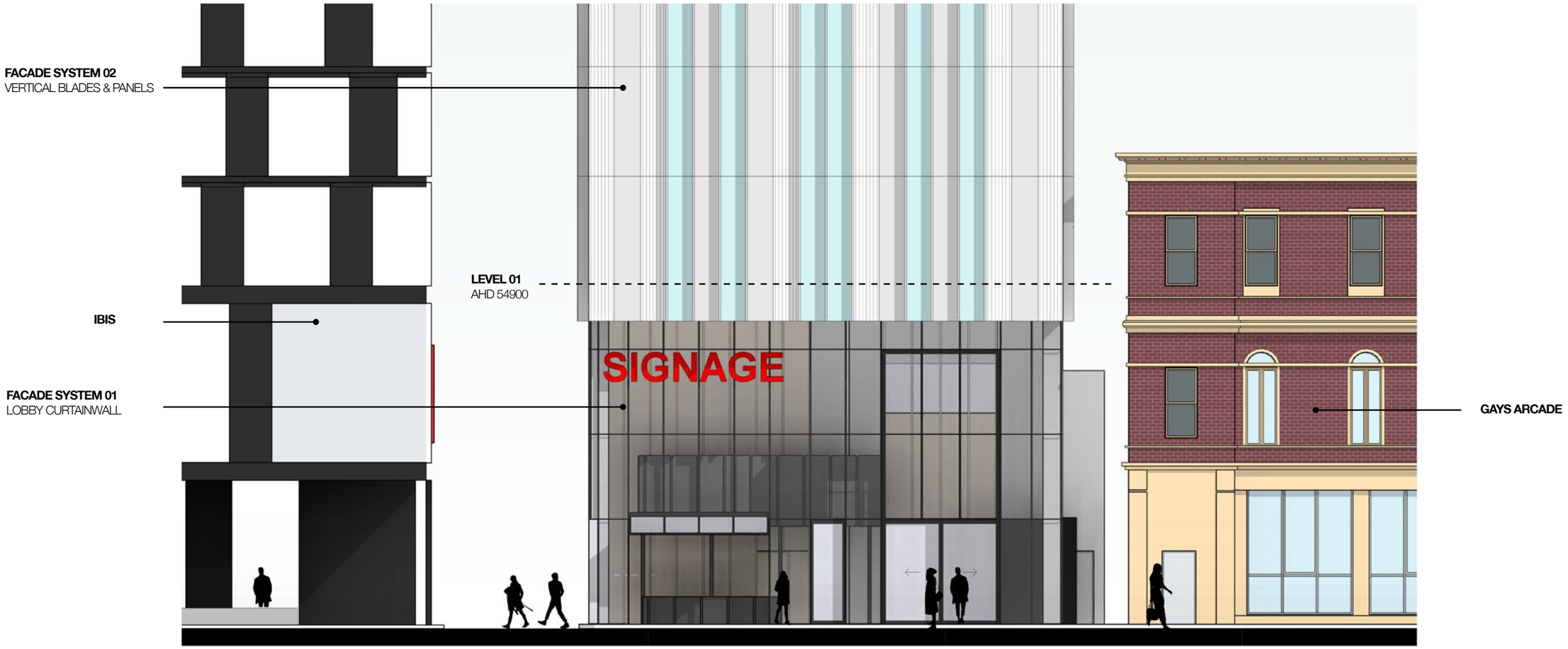


SOUTH ELEVATION



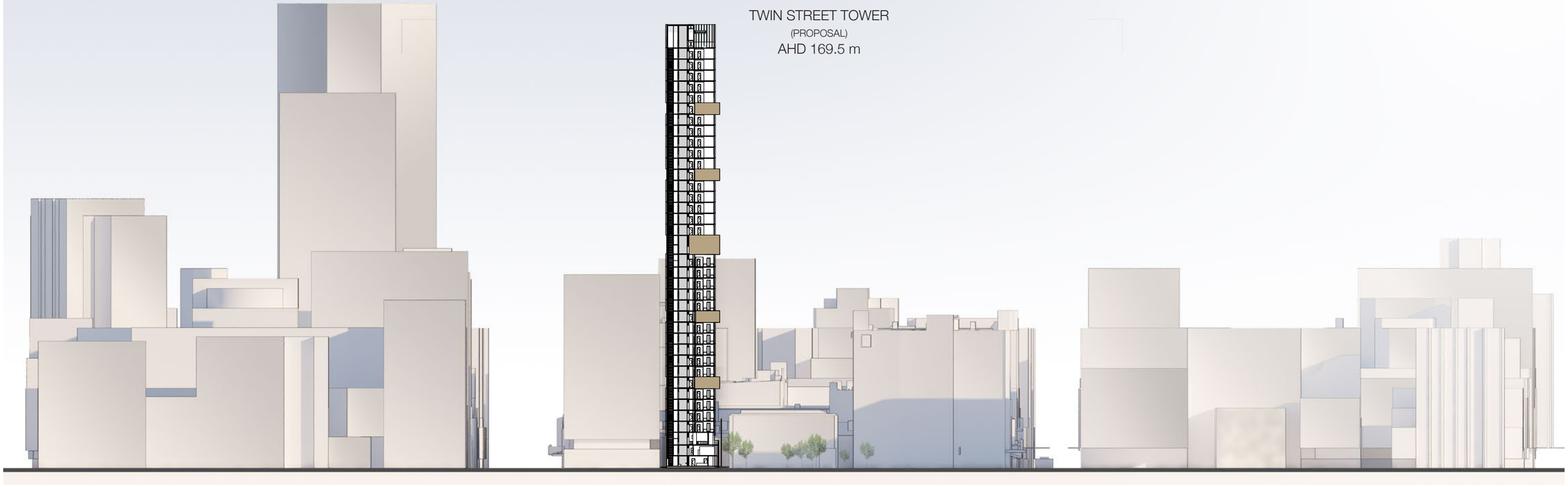
03 Development Application
Elevations

Twin Street Elevation

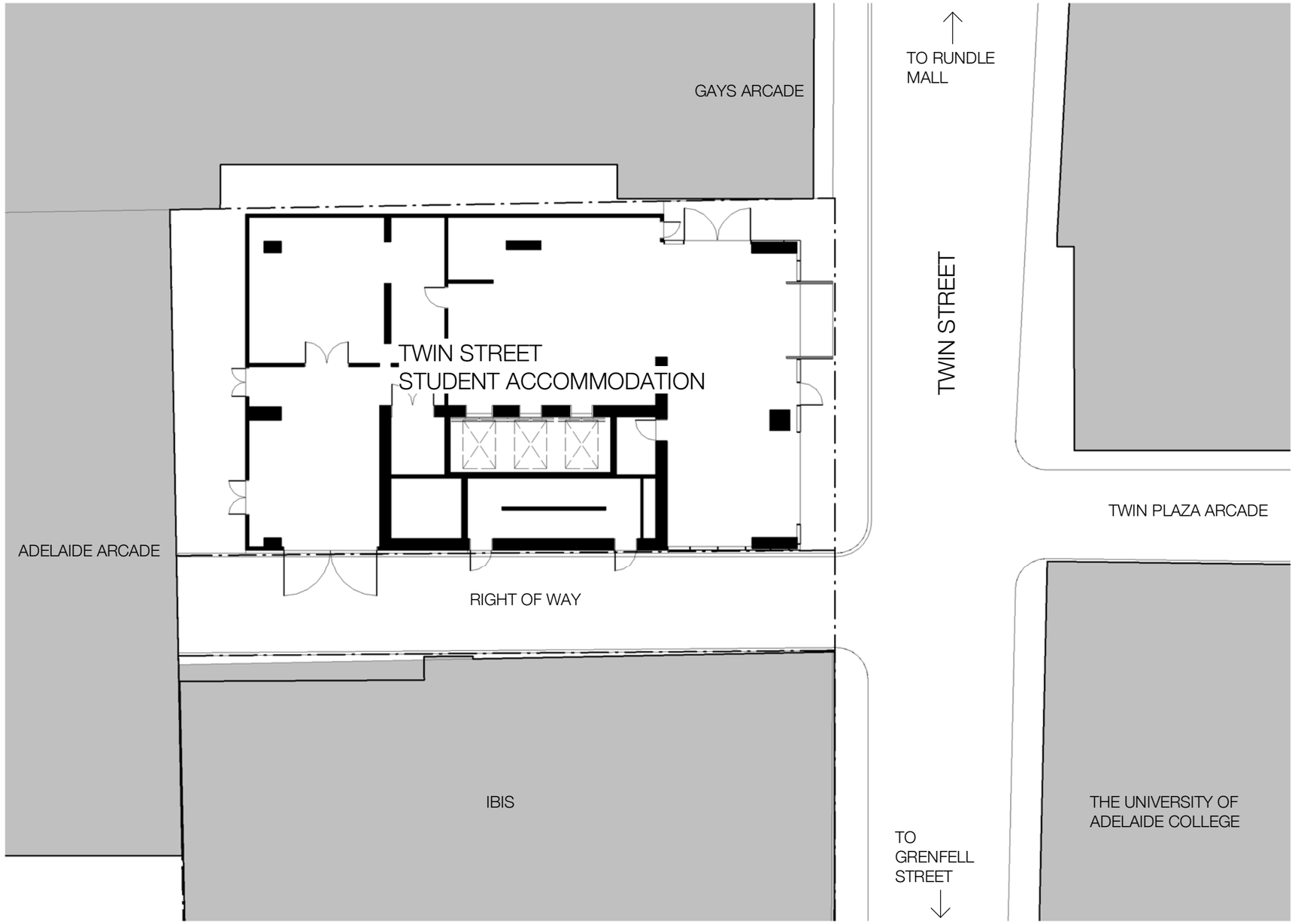


Elevation - Public Realm

03 Development Application
Section



Twin Street Section - Looking West



WOODS BAGOT™

Client
HINES PROPERTY

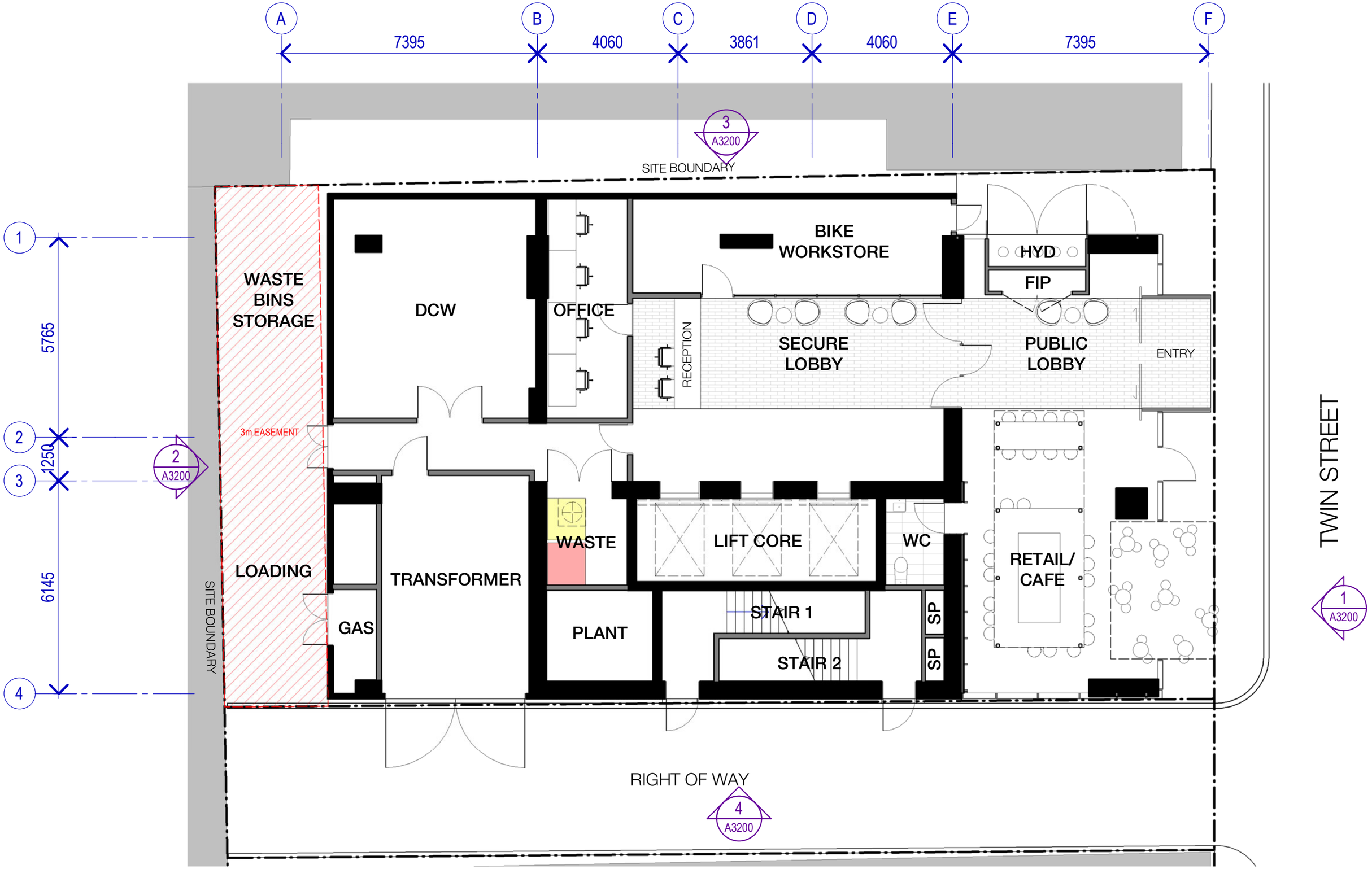
Project
TWIN STREET

Sheet title
SITE PLAN

Project no.
140197
Sheet no.
A1100

Scale
1 : 200
Revision
K

Sheet size
A3
Date
03/08/18



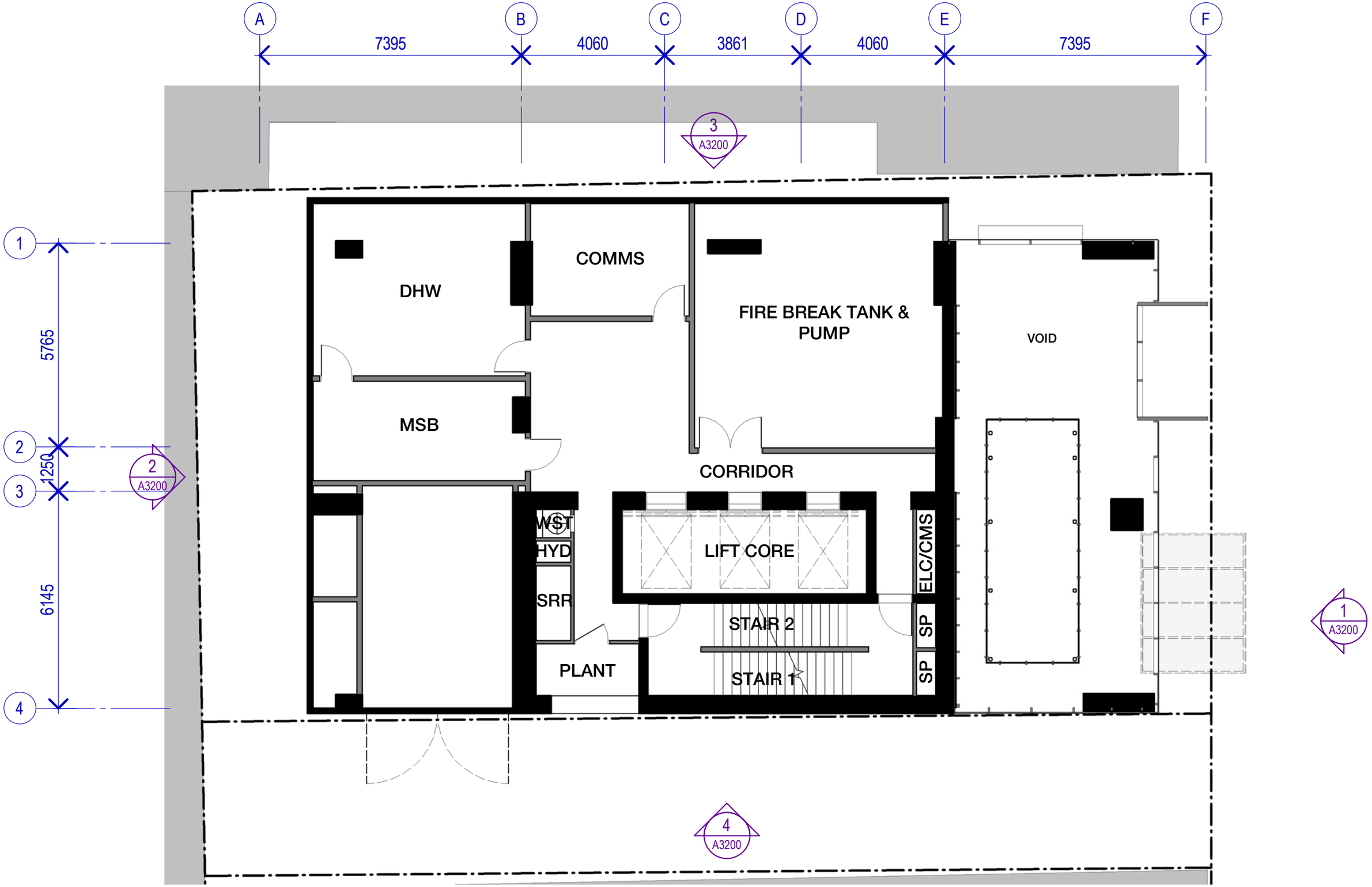
WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 00 - GROUND

Project no. **140197**
Sheet no. **A2200**
Scale **1 : 100**
Revision **K**
Sheet size **A3**
Date **03/08/18**



WOODS BAGOT

Client
HINES PROPERTY

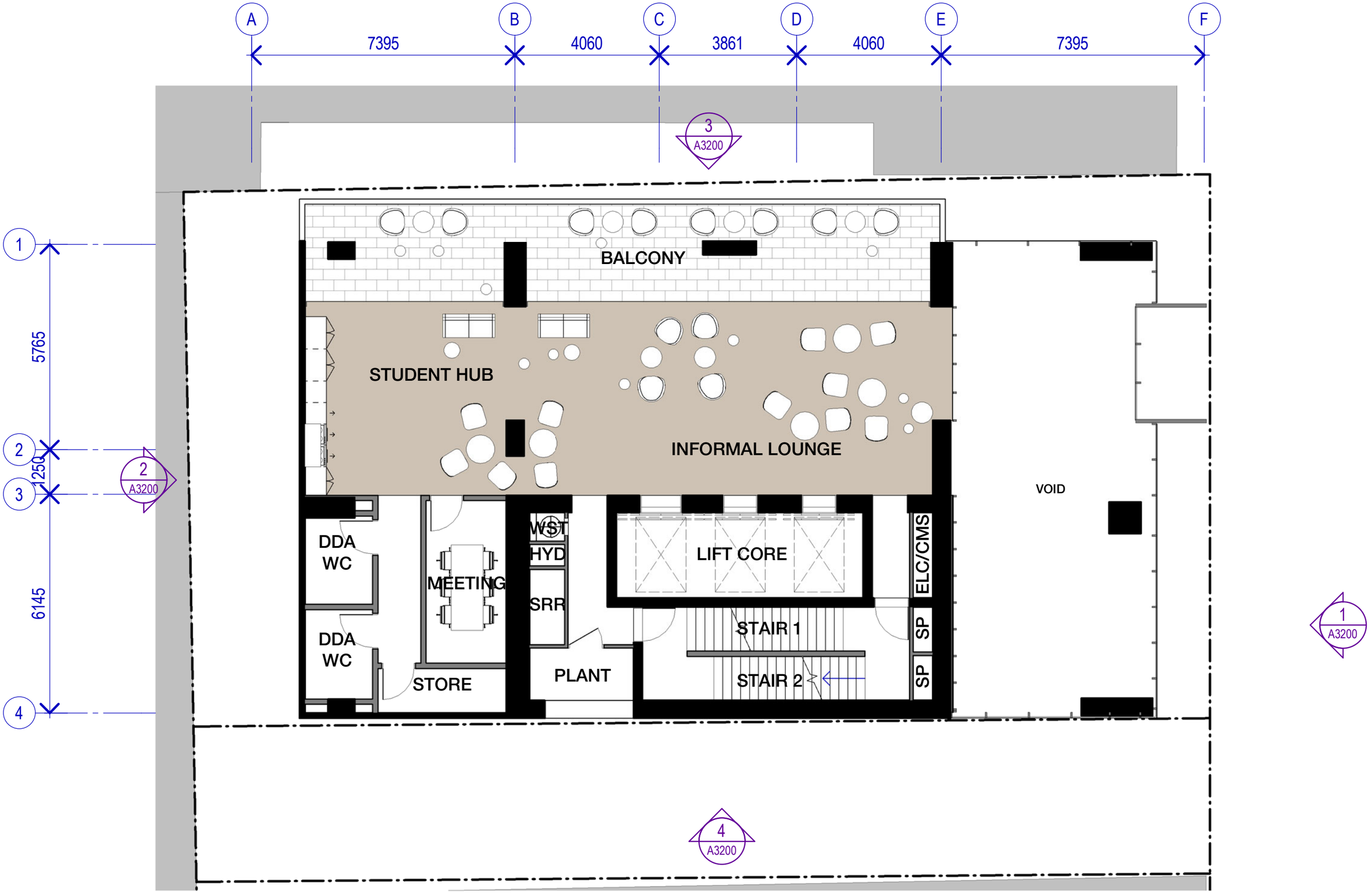
Project
TWIN STREET

Sheet title
LEVEL M1 - MEZZANINE PLANT

Project no.
140197
Sheet no.
A2200.M1

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18



WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL M2 - MEZZANINE STUDENT HUB

Project no. **140197**
Sheet no. **A2200.M2**
Scale **1 : 100**
Revision **K**
Sheet size **A3**
Date **03/08/18**

WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 01 - 16 (TYPICAL)

Project no.
140197
Sheet no.
A2201

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18

WOODS BAGOT™

Client
HINES PROPERTY

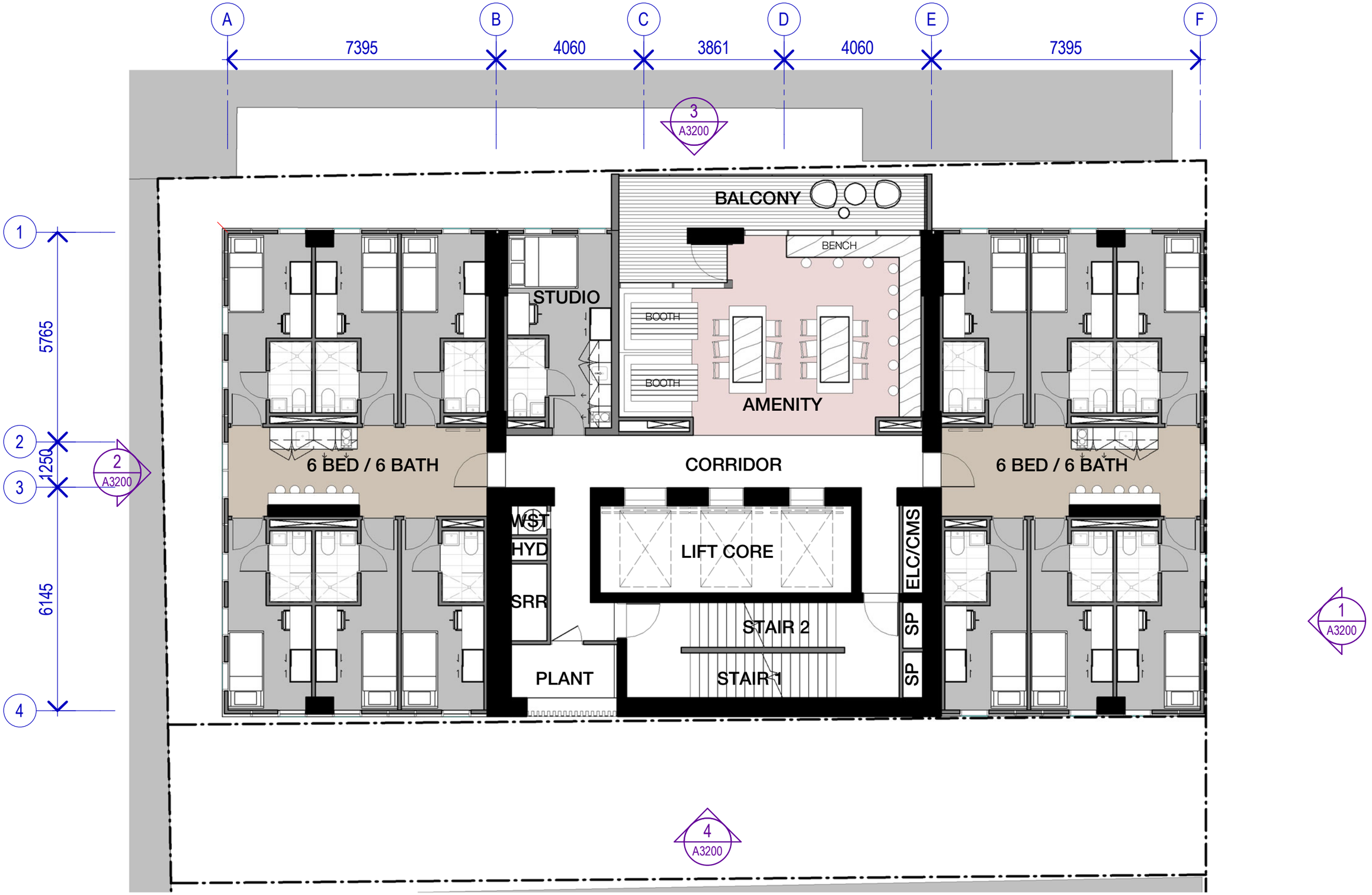
Project
TWIN STREET

Sheet title
LEVEL 05 - AMENITY

Project no.
140197
Sheet no.
A2205

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18



WOODS BAGOT™

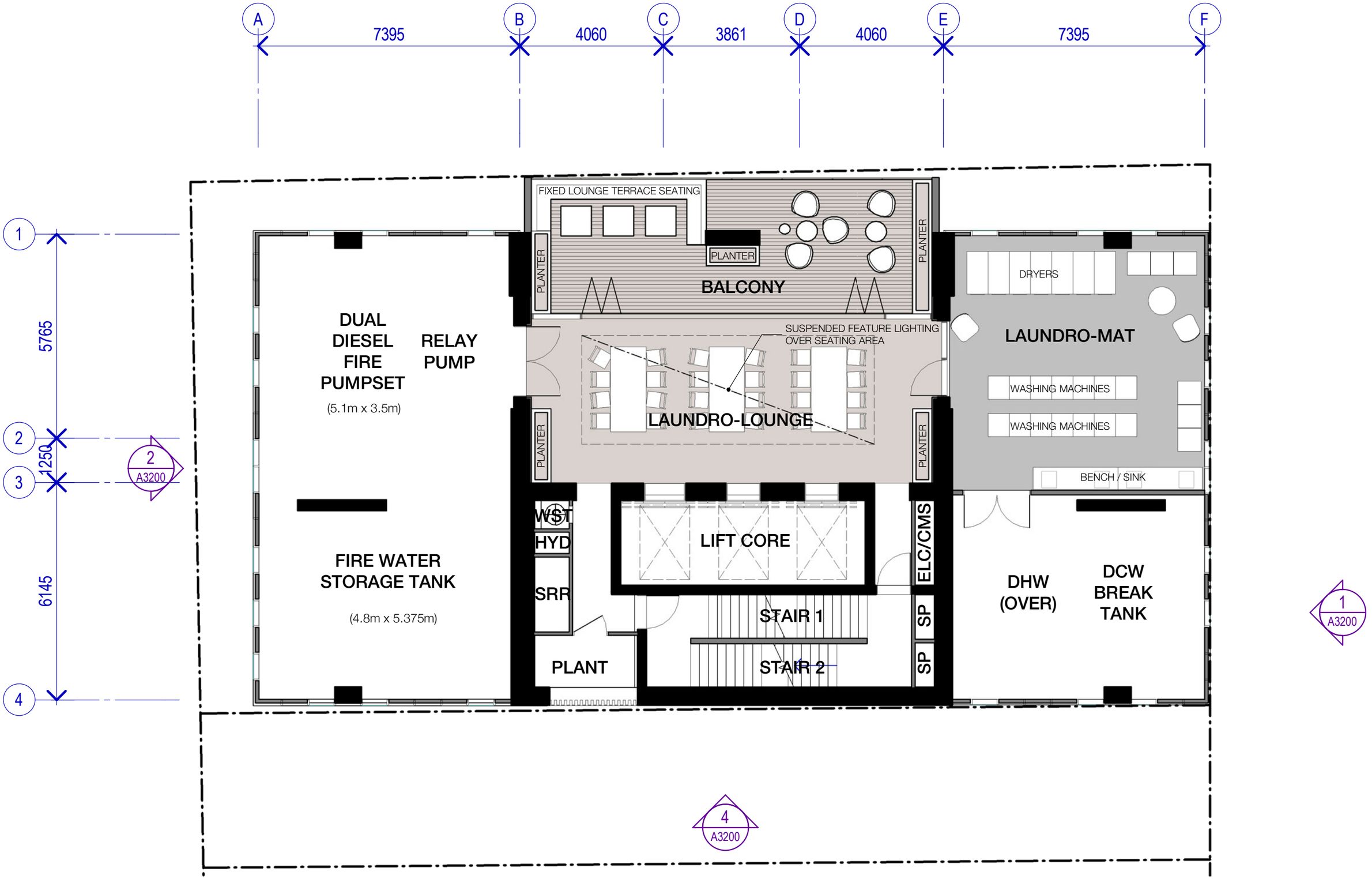
1 11 - Amenity

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 11 - AMENITY

Project no. **140197**
Sheet no. **A2211**
Scale **1 : 100**
Revision **K**
Sheet size **A3**
Date **03/08/18**



WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 17 - MID-PLANT

Project no. **140197**
Sheet no. **A2217**
Scale **1 : 100**
Revision **K**
Sheet size **A3**
Date **03/08/18**

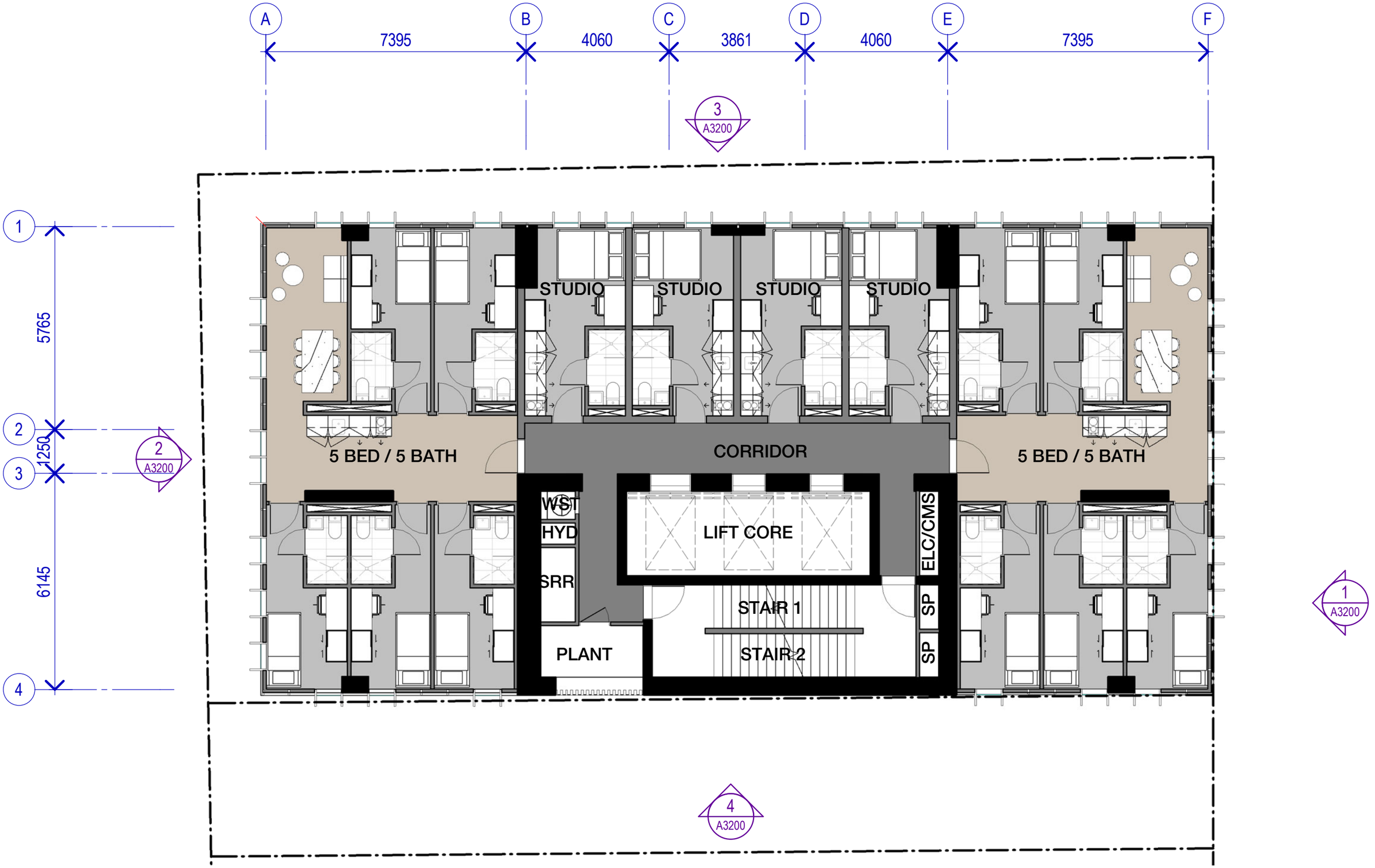
WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 18 - 21 (DDA)

Project no. **140197**
Sheet no. **A2218**
Scale **1 : 100**
Revision **K**
Sheet size **A3**
Date **03/08/18**



WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 22-34 (TYPICAL)

Project no.
140197
Sheet no.
A2222

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18

WOODS BAGOT

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
LEVEL 23 - AMENITY

Project no.
140197
Sheet no.
A2223

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18

WOODS BAGOT™

Client
HINES PROPERTY

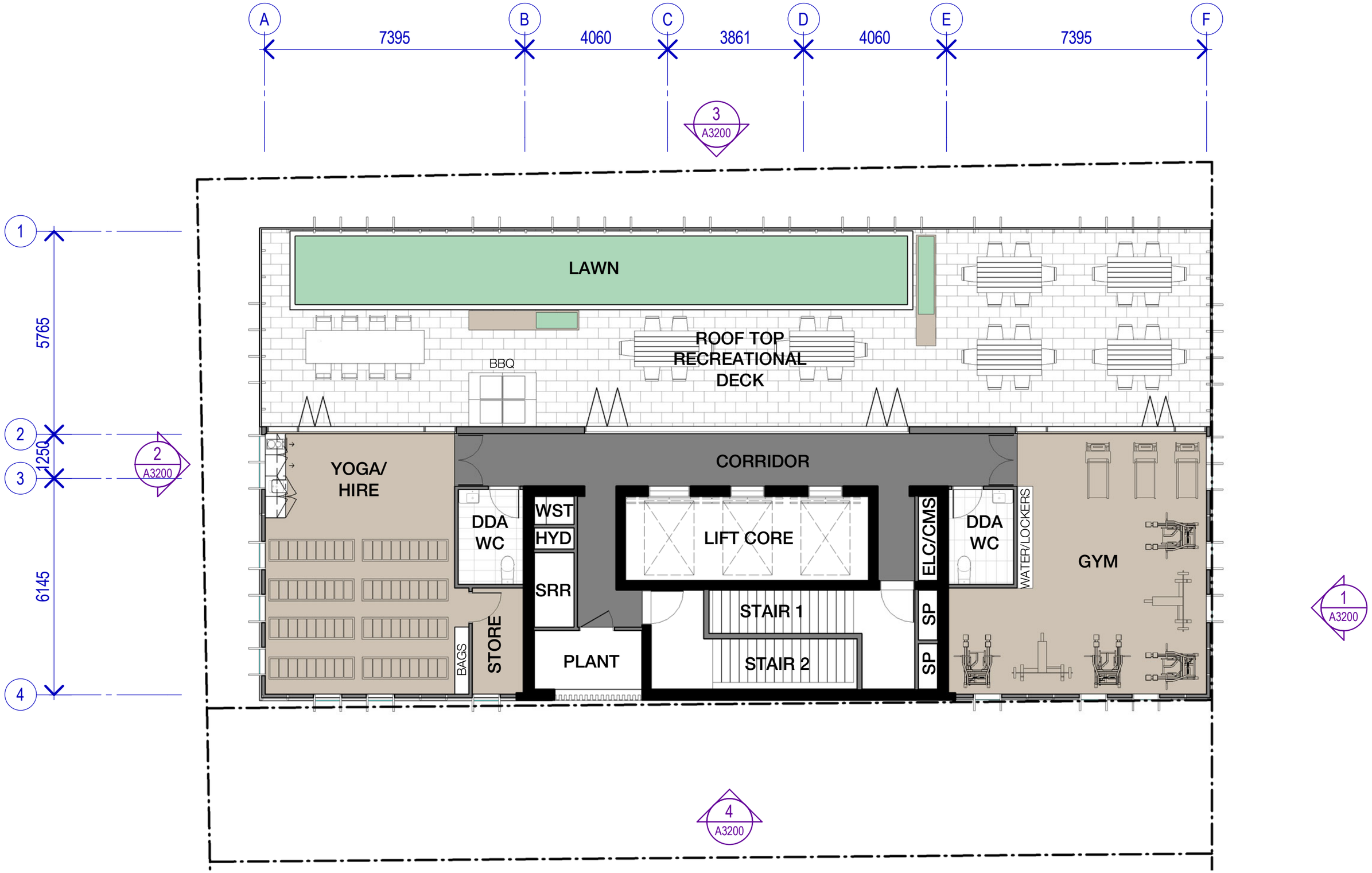
Project
TWIN STREET

Sheet title
LEVEL 29 - AMENITY

Project no.
140197
Sheet no.
A2229

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18



WOODS BAGOT

Client
HINES PROPERTY

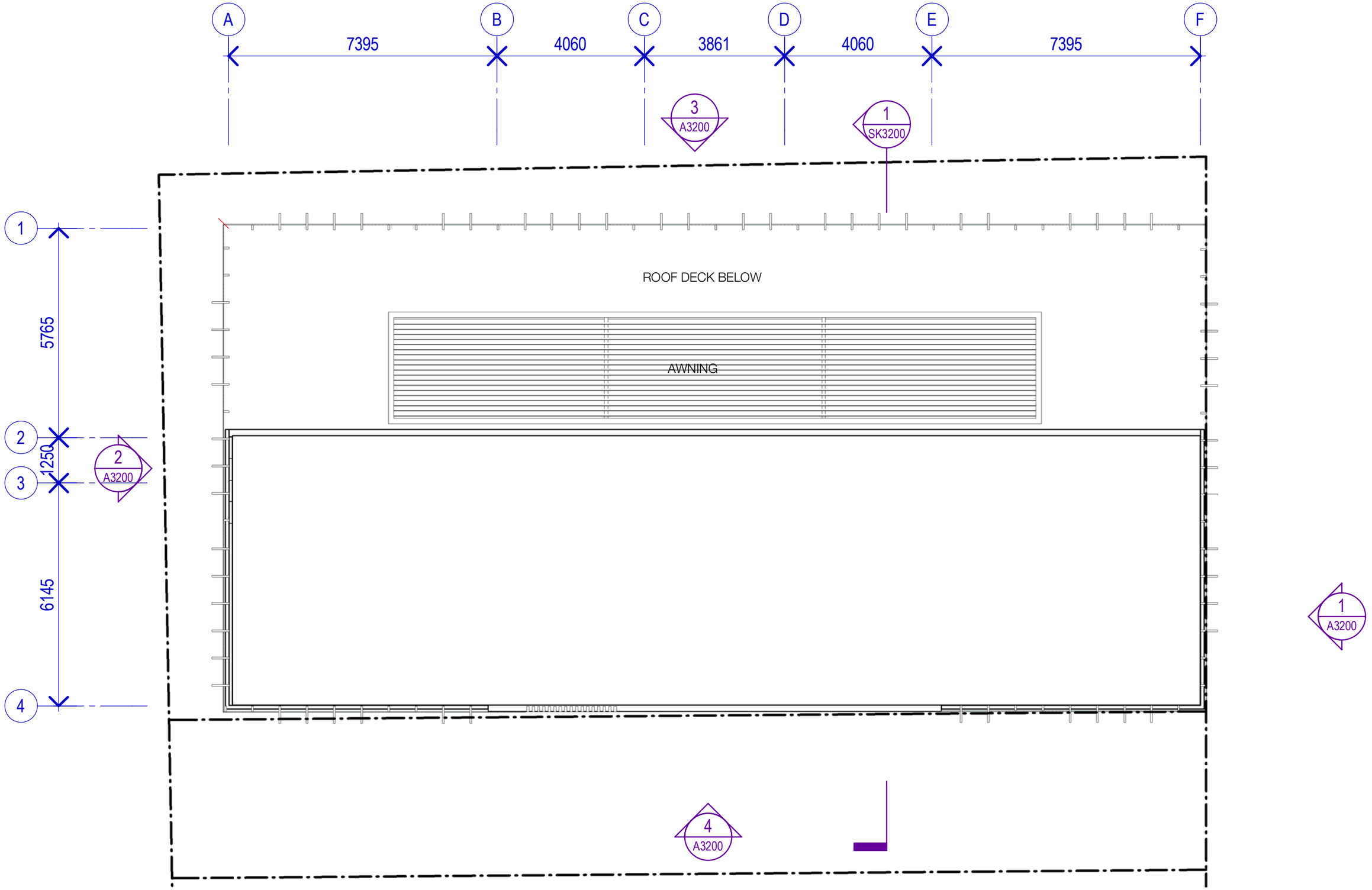
Project
TWIN STREET

Sheet title
LEVEL 35 - ROOF DECK

Project no.
140197
Sheet no.
A2235

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18



WOODS BAGOT™

Client
HINES PROPERTY

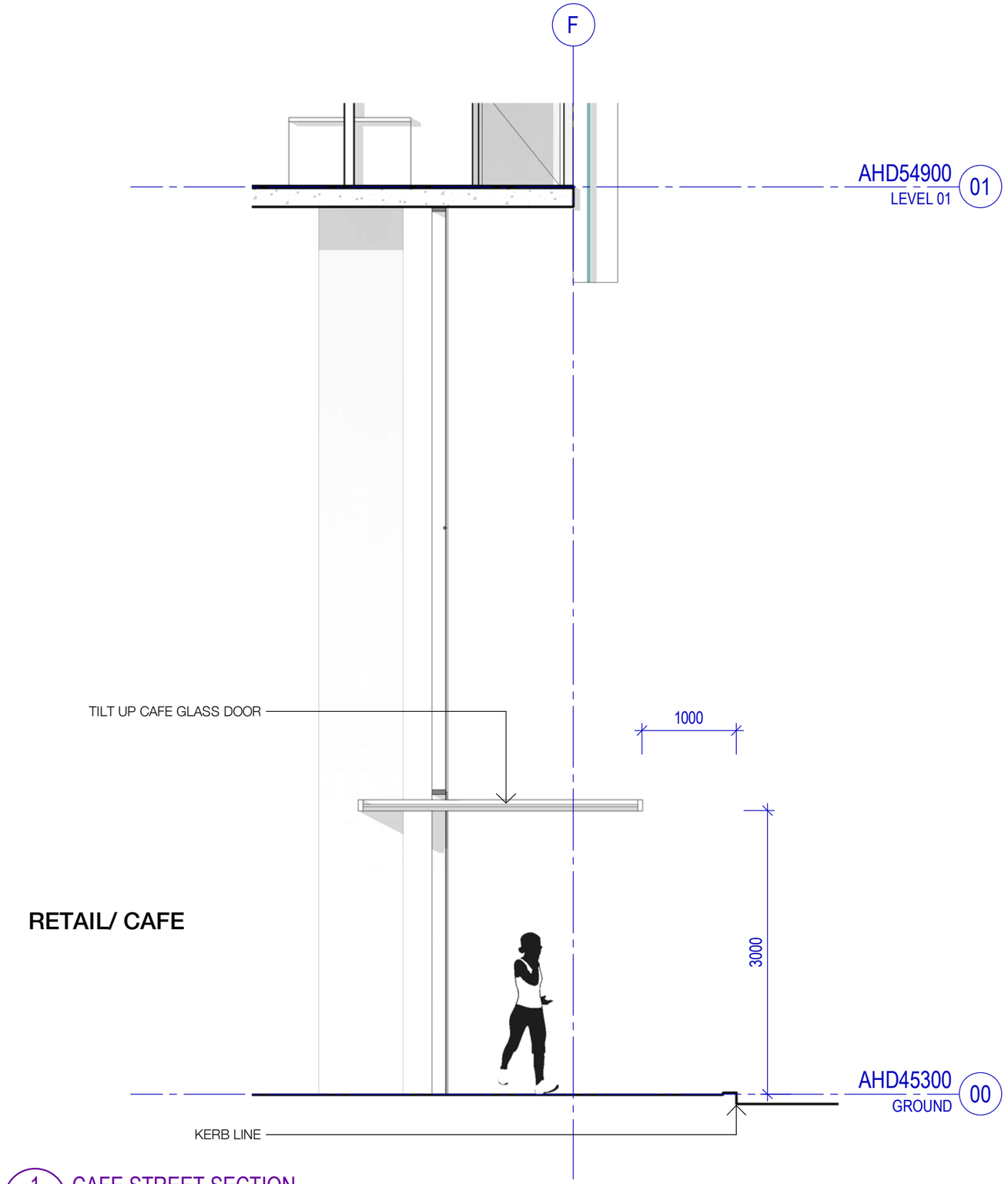
Project
TWIN STREET

Sheet title
ROOF PLAN

Project no.
140197
Sheet no.
A2236

Scale
1 : 100
Revision
K

Sheet size
A3
Date
03/08/18



1 CAFE STREET SECTION
SCALE 1 : 50

WOODS BAGOT™

Client
HINES PROPERTY

Project
TWIN STREET

Sheet title
CAFE DOOR STREET SECTION

Project no.
140197
Sheet no.
SK3202

Scale
1 : 50
Revision

Sheet size
A3
Date

NOTE : For Policy Areas See MAP Adel/50

CC	Capital City Zone
I2	Institutional (Government House) Zone
I3	Institutional (University/Hospital) Zone
PL	Park Lands Zone

Scale 1:4150

0metres 100 200 300

ADELAIDE (CITY)
ZONES
MAP Adel/19

Zone Boundary

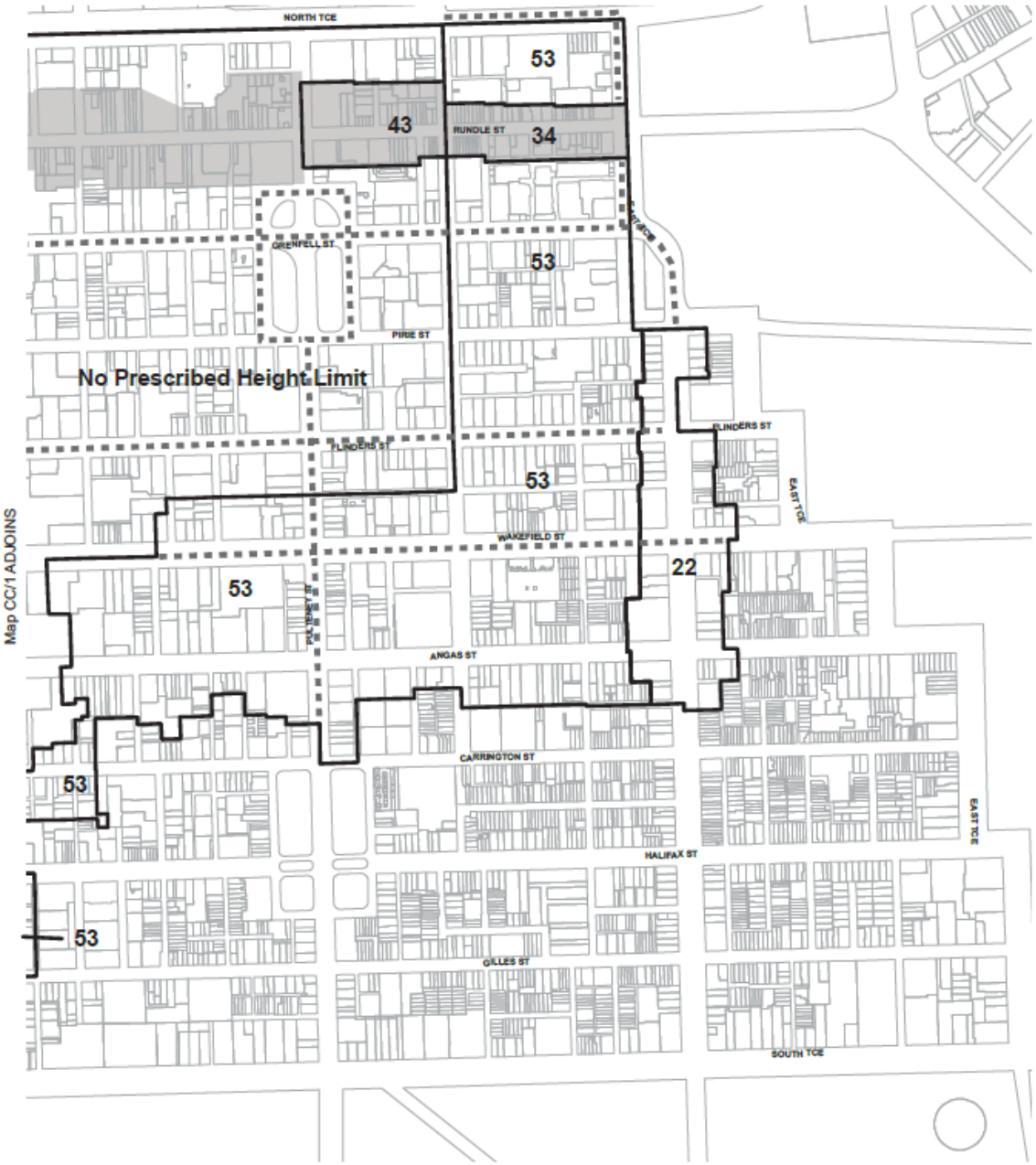
Development Plan Boundary

13	Central Business Policy Area
14	Main Street Policy Area
19	Botanic Park Policy Area
25	Adelaide Oval Policy Area
○	State Heritage Place
●	Local Heritage Place
▲	Significant Tree
•••••••	Existing Pedestrian Link
▮▮▮▮▮▮▮▮▮▮	Proposed Pedestrian Link
▬▬▬	Policy Area Boundary

Scale 1:4150

0metres 100 200 300

ADELAIDE (CITY) POLICY AREAS MAP Adel/50



N

1:8000

0 120 240 360 480 600 metres

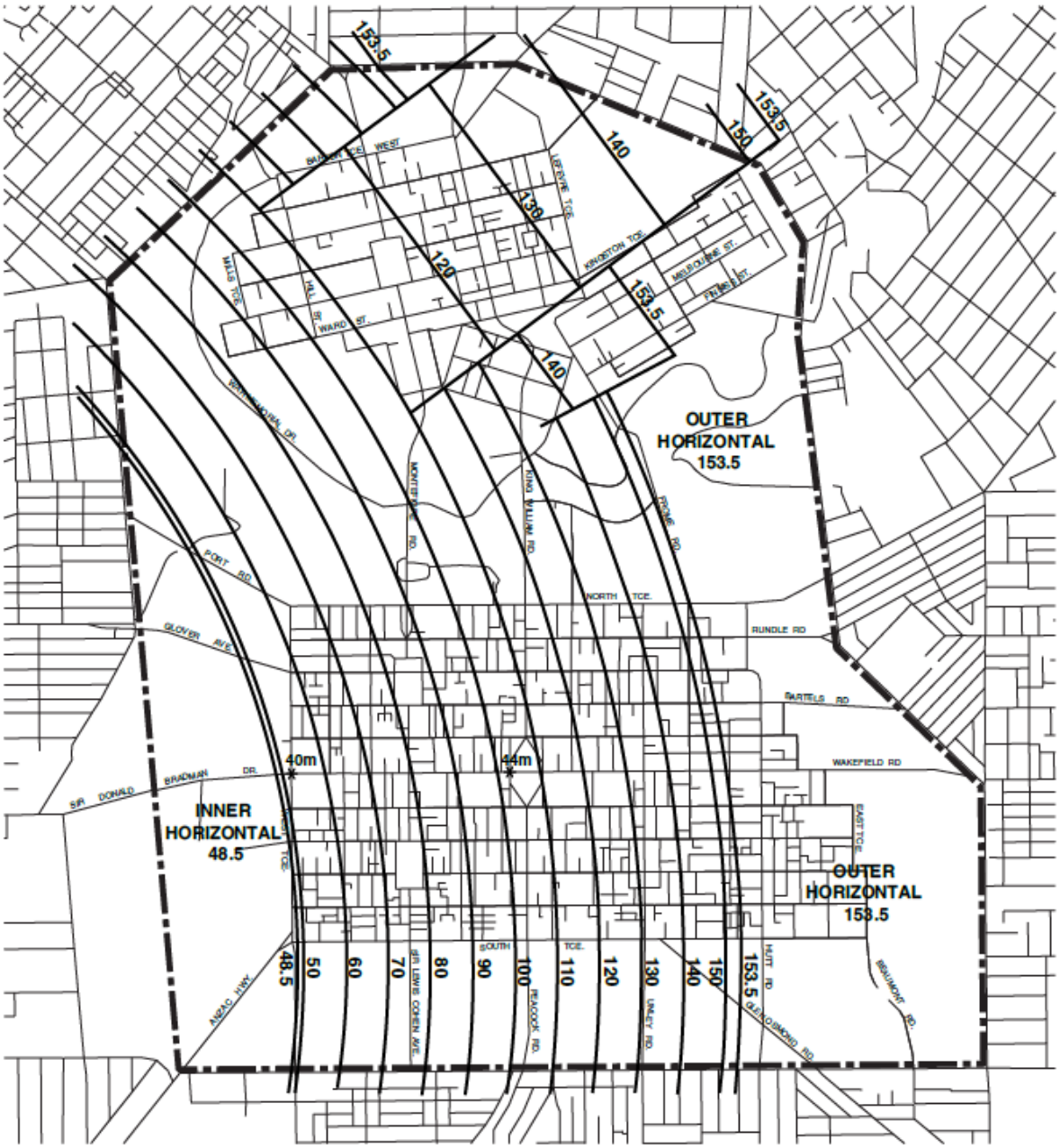
Maximum Building Height (Metres) within Capital City Zoned land
Note: Airport Building Height Restrictions Apply. Refer Map Adel/1 (Overlay 5).

City Boulevards and Terraces

Policy Areas of a 'main Street' type

ADELAIDE (CITY) BUILDING HEIGHTS

Concept Plan Figure CC/2



Referral to the Department of Transport and Regional Services through Adelaide Airport Limited is required where a development would exceed the Obstacle Limitation Surface (OLS) contours on this map.

100 OLS Values in Australian Height Datum (AHD)

OLS Contour Boundary

*** 40m** Indicative ground level in AHD. Note: Ground level varies throughout the Council area and accurate ground level in AHD would need to be confirmed

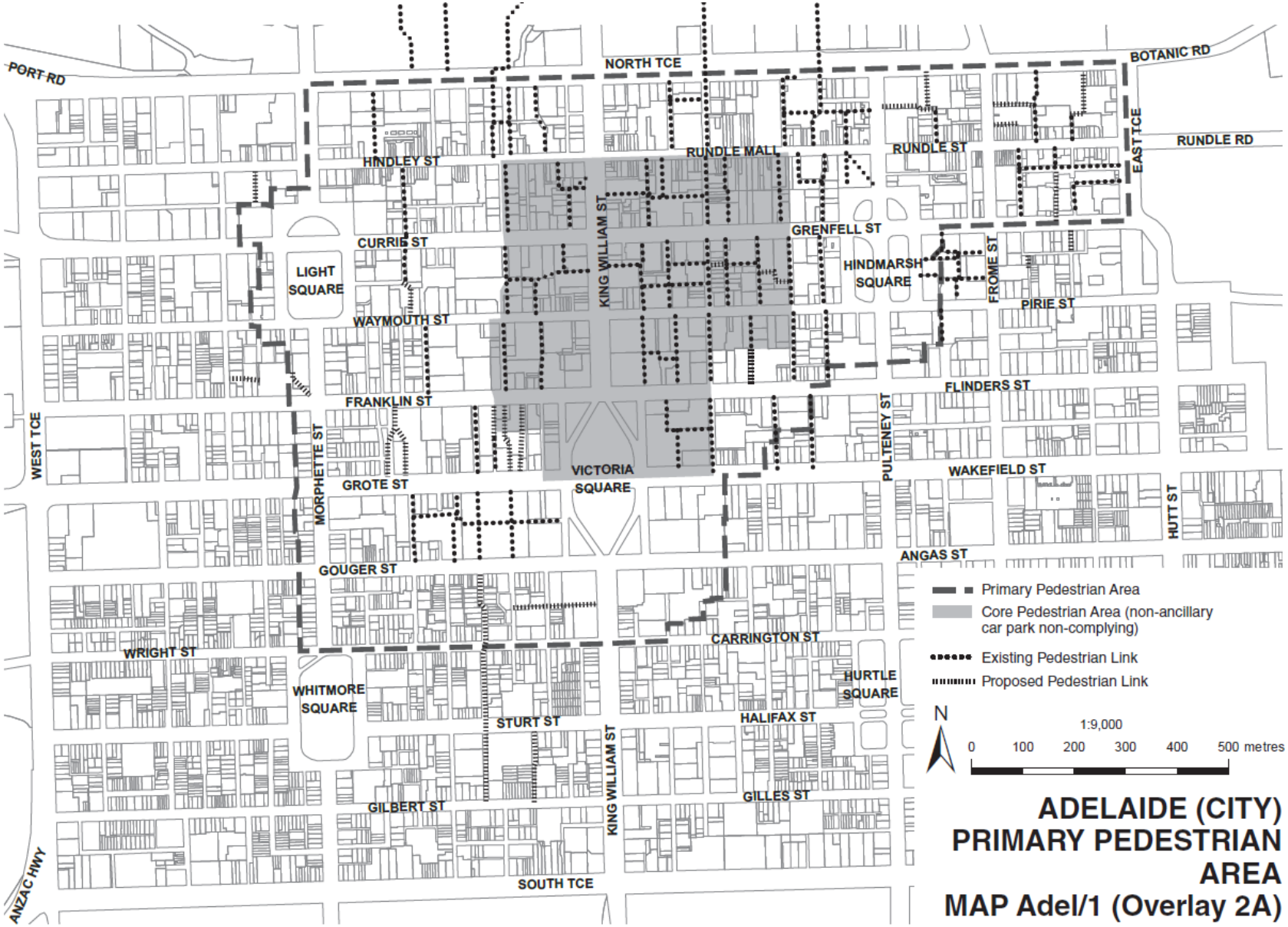
Development Plan Boundary

Note: Approval is required under the Commonwealth Airports Act 1996 for structures and the like that penetrate prescribed air space (as defined in the Airports Act 1996)

Scale 1:26,000

0metres 500 1000

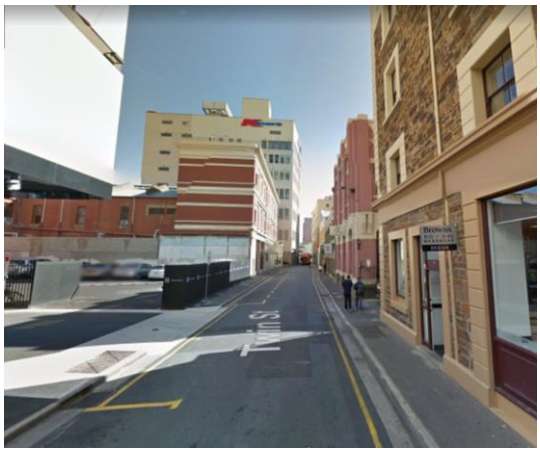
ADELAIDE (CITY)
AIRPORT BUILDING HEIGHTS
MAP Adel/1 (Overlay 5)



ADELAIDE (CITY) PRIMARY PEDESTRIAN AREA MAP Adel/1 (Overlay 2A)

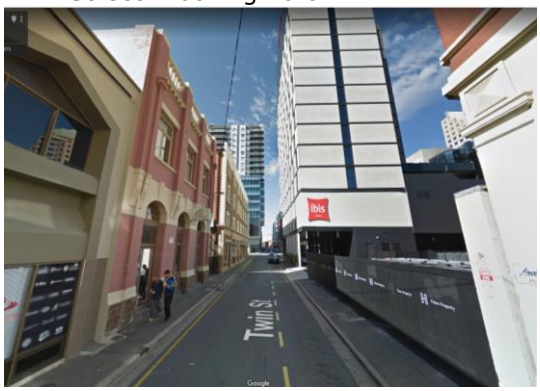
Consolidated - 20 June 2017

Site Photographs

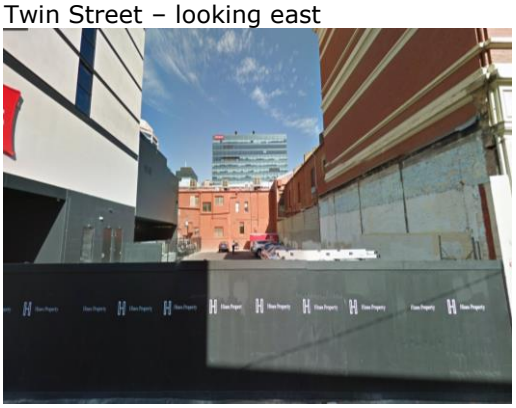


Twin Street - looking north


Twin Street – looking east

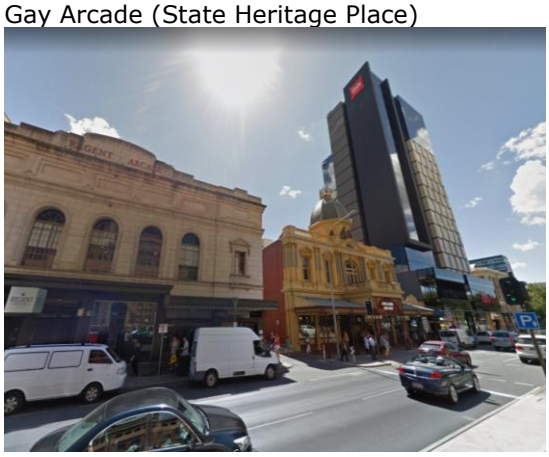


Twin Street - (Subject site) looking south


Twin Street - (Subject site) looking west

Gay Arcade (State Heritage Place)

Grenfell Street – looking toward Twin Street


Grenfell Street looking North-east

Grenfell Street looking west

Product	Register Search (CT 6139/714)
Date/Time	17/05/2018 10:12AM
Customer Reference	50868
Order ID	20180517002803
Cost	$28.25

REAL PROPERTY ACT, 1886
South Australia

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

Certificate of Title - Volume 6139 Folio 714

Parent Title(s) CT 5293/356

Creating Dealing(s) RTC 12131312

Title Issued 11/06/2014 **Edition** 2 **Edition Issued** 27/11/2014

Estate Type

FEE SIMPLE

Registered Proprietor

122 GRENFELL STREET PTY. LTD. (ACN: 150 938 051)
OF COMO OFFICE TOWER LEVEL 9/644 CHAPEL STREET SOUTH YARRA VIC 3141

Description of Land

ALLOTMENT 101 DEPOSITED PLAN 93330
IN THE AREA NAMED ADELAIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) WITH LIMITATIONS OVER THE LAND MARKED E ON DP 93330 (T 5234295)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C ON DP 93330 (RTC 12131312)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G644/1993

Administrative Interests NIL

DEVELOPMENT REGULATIONS 2008

Form of Declaration

(Schedule 5, Clause 2A)

To:	State Planning Commission
From:	HINES GROUP
Date of Application:	03/08/18

Location of Proposed Development:

House Number:		Lot Number:	101
Street:	Twin	Town/Suburb:	Adelaide
Section No (full/part):		Hundred:	
Volume:	6139	Folio:	714

Nature of Proposed Development:

Multi-Storey Student Accommodation.

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

03/08/18 

Date Signed

Note 1

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

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

Note 2

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

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

Note 3

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

Note 4

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

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

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

Note 5

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

Note 6

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

DEVELOPMENT APPLICATION FORM

COUNCIL: STATE PLANNING COMMISSION

APPLICANT: 29 TWIN STREET PTY LTD

Postal Address: C / MASTERPLAN
33 CARRINGTON STREET, ADELAIDE SA 5000

OWNER: 122 GRENFELL STREET PTY LTD

Postal Address: 9/644 CHAPEL STREET
SOUTH YARRA VIC 3141

BUILDER: TBA

Postal Address:

Licence No:

CONTACT PERSON FOR FURTHER INFORMATION:

Name: GREG VINCENT - MASTERPLAN SA PTY LTD

Telephone: 8193 5600

Email: GREGV@MASTERPLAN.COM.AU

Mobile: 0413 832 603

EXISTING USE:

CAR PARK

FOR OFFICE USE

Development No:

Previous Development No:

Assessment No:

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

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

DESCRIPTION OF PROPOSED DEVELOPMENT: MULTI-STOREY STUDENT ACCOMMODATION

LOCATION OF PROPOSED DEVELOPMENT:

House No: 29 Lot No: 101 Street: TWIN STREET Town/Suburb: ADELAIDE

Section No (full/part): Hundred: Volume: 6139 Folio: 714

Section No (full/part): Hundred: Volume: Folio:

LAND DIVISION:

Site Area (m²): Reserve Area (m²): No of Existing Allotments:

Number of Additional Allotments - (Excluding Road and Reserve): Lease: YES: ☐ NO: ☐

BUILDING RULES CLASSIFICATION SOUGHT:

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

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

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

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

HAS THE CONSTRUCTION INDUSTRY TRAINING FUND ACT 1993 LEVY BEEN PAID? YES: ☐ NO: ☐

DEVELOPMENT COST (Do not include any fit-out costs): $35,000,000.00

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

SIGNATURE: James D Hines **Dated:** 3 AUGUST 2018

FOR AND ON BEHALF OF 29 TWIN STREET PTY LTD

50868DAF01

PURPOSE: DIVISION

MAP REF: 6628/42/H

LAST PLAN:

AREA NAME: ADELAIDE

COUNCIL: THE CORPORATION OF THE CITY OF ADELAIDE

DEVELOPMENT NO: 020/D023/13/001/37193

APPROVED:
IAN GREIG
25/03/2014

DEPOSITED:
SANDY BEAGLEHOLE
28/05/2014

D93330

SHEET 1 OF 2

41567_text_01_v05_Version_5

AGENT DETAILS: CALDER HARRIS SURVEYORS PTY LTD
SUITE 3, 95 KING WILLIAM ST
UNLEY SA 5061
PH: 82721822
FAX:

AGENT CODE: CALD

REFERENCE: G845 1C.205

SURVEYORS CERTIFICATION: I Rodney Neil Burford , a licensed surveyor do hereby certify - 1) That this plan has been made from surveys carried out by me or under my personal supervision and in accordance with the Survey Act 1992. 2) That the field work was completed on the 22nd day of March 2013
21st day of March 2014 Rodney Neil Burford Licensed Surveyor

SUBJECT TITLE DETAILS:

PREFIX	VOLUME	FOLIO	OTHER	PARCEL	NUMBER	PLAN	NUMBER	HUNDRED / IA / DIVISION	TOWN	REFERENCE NUMBER
CT	5293	356		ALLOTMENT(S)	2	D	13198	ADELAIDE		
CT	5293	123		ALLOTMENT(S)	2	F	160448	ADELAIDE		

OTHER TITLES AFFECTED:

EASEMENT DETAILS:

STATUS	LAND BURDENED	FORM	CATEGORY	IDENTIFIER	PURPOSE	IN FAVOUR OF	CREATION
EXISTING	100	LONG	EASEMENT(S)	C			T661370
EXISTING	100	SHORT	FREE AND UNRESTRICTED RIGHT(S) OF WAY	C			
EXISTING	101	LONG	EASEMENT(S) WITH LIMITATIONS	E			T5234295
NEW	100	SHORT	FREE AND UNRESTRICTED RIGHT(S) OF WAY	C		101	

ANNOTATIONS: SECTION 90C OF THE REAL PROPERTY ACT 1886 APPLIES TO THIS PLAN

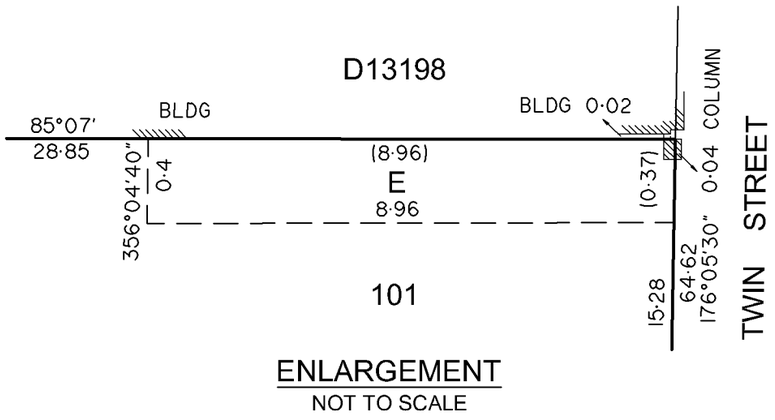
D93330

SHEET 2 OF 2

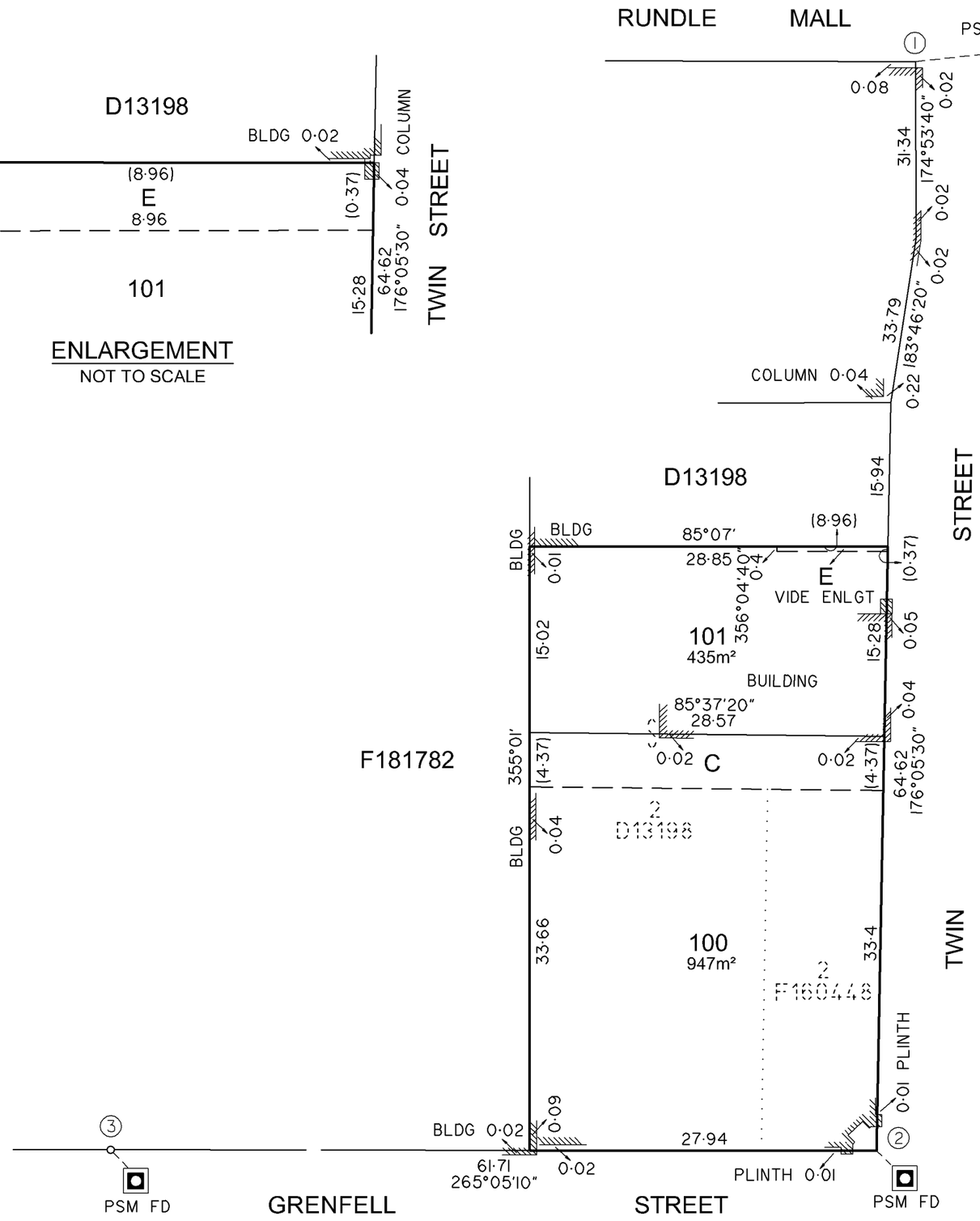
41567_pland_1_V03_Version_5

BEARING DATUM: ZONE 54 MGA94
DERIVATION: PSM'S 6628/15120 - 6628/13853

TOTAL AREA:

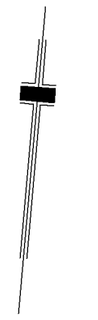


ENLARGEMENT
NOT TO SCALE



REFERENCE MARKS

CNR	BEARING	FROM	DIST	PSM NO
1	258°48'	PSM FD	5·53	6628/15120
2	310°35'	PSM FD	0·86	6628/13853
3	310°05'	PSM FD	0·86	6628/12125



SCALE
0 10 20 30 METRES 40

CALDER HARRIS SURVEYORS PTY.LTD.
A.C.N. 007 803 269
LICENSED SURVEYORS
SUITE 3, 95 KING WILLIAM RD UNLEY 5061
POSTAL ADDRESS : PO BOX 67 UNLEY 5061
Ph.82721822 Fax.82725007 Email: calder@senet.com.au

ACCOUNT NO. G845C DOCKET NO. 1C.205

4·12·13

PLANNING REPORT

PROPOSED MULTI-STOREY STUDENT ACCOMMODATION

29 TWIN STREET, ADELAIDE

AUGUST 2018

MASTERPLAN
TOWN + COUNTRY PLANNERS

Contents

1.0 INTRODUCTION

MasterPlan SA Pty Ltd has been engaged by the 29 Twin Street Pty Limited to assist with the preparation of a development application for the construction of a multi-storey student accommodation building at 29 Twin Street, Adelaide.

29 Twin Street Pty Limited (the Applicant) is a subsidiary of Hines Property. Hines Property is an integrated property development and property investment group with experience across high rise residential developments, commercial/retail developments, and various hotel developments. One of the most active developers in South Australia, and recipient of multiple state and national industry awards, Hines Property has completed major developments totaling nearly 800 hotel rooms across various projects and more than 200 residential apartments.

Previous Hines Property Developments include the Conservatory on Hindmarsh Square Mixed Use Residential and Office Tower, the Ibis Adelaide Hotel, the Pullman Adelaide Hotel, and the 20 Hindmarsh Square Apartments.

The strength of a Hines Property development is underpinned by premier site and location selection, careful emphasis on design and amenity, and a strong track record of development delivery.

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

The Planning Report is supported by:

- Certificate of Title;
- the compendium of Architectural Drawings undertaken by Woods Bagot;
- a design statement undertaken by Woods Bagot;
- a sustainability report undertaken by Lucid Consulting;
- a services report undertaken by Lucid Consulting;
- a traffic design report undertaken by InfraPlan;
- a waste management plan undertaken by InfraPlan; and
- a wind impact Assessment by Cermak Peterka Petersen Pty Ltd.

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

2.0 BACKGROUND AND PRE-LODGEMENT DISCUSSIONS

2.1 Pre-lodgement

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

The Applicant, through their project team, sought and obtained feedback from the key stakeholders which was then incorporated into the proposed development at the following Pre-Lodgement and ODASA Design Review meetings:

- Pre-Lodgement Panel Meeting #1, 8 June 2018; and
- Design Review #1, 6 July 2018.

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

- the proposed land use is highly envisaged;
- the building height is supported in principle;
- the proposed setbacks are generally positive, including that of Gays Arcade to the north, contributing to the extent of circulation space;
- the tower proportions, including the height and scale of the second floor in aligning with Gays Arcade are generally sympathetic;
- the inclusion of informal break out areas;
- the incorporation of studio units;
- the use of active streetscape spaces at ground level; and
- strong support for the mid-level and ground level back of house locations for service infrastructure.

The critical elements identified by DPTI Staff and ODASA through the PLP and DRP process in addition to the requests for further clarification include:

- identification of the capability for conversion into hotel accommodation;
- further detail on how the proposed development activates the ground floor level and public realm;

- the use of permeable materials and overhead canopies to improve the pedestrian experience;
- illustration of the relationship between the external banding and glazing and the internal use;
- additional communal areas to be considered;
- further refinement of the outdoor space at the roof top level;
- further details of ESD strategies;
- the interface between the western portion of the proposal and the adjoining Adelaide Arcade, in particular the existing windows providing a fire source;
- further illustrations of mass and scale relationships to Gay Arcade encouraged;
- unit windows expected to be operable;
- further clarification of shared service vehicle movements on site and any consequential impacts given the potential increase in demand utilising Twin Street;
- consideration of engaging a waste management consultant given the hard waste generated by the building occupants;
- the development of a construction strategy given the constricted site;
- the developer is reminded of Council landscape funding opportunities; and
- consideration of integrated signage.

In the development of the final plans the above matters have been considered and where relevant amendments to the design have responded to the comments expressed.

In particular, the design team has considered the preliminary comments and a summary of the response is detailed below:

Identification of the capability for conversion into hotel accommodation.

The design team has been conscious of ensuring the buildings adaptability, with the intention of providing a repurposing opportunity for a hotel development or other land use. The design considerations of this option are detailed below within the body of the report.

Further detail on how the proposed development activates the ground floor level and public realm.

The Woods Bagot Design Statement accompanying the application documentation provides a pictorial representation of the proposal's dual Mezzanine and ground floor levels as viewed from the eastern side of Twin Street. The extent of glazing interfacing with the public realm is represented as a compelling feature, of the development, with the streetscape facade extending up three levels to the top of the second Mezzanine level, with both Mezzanine's set 5.5 metres behind the façade. This creates a considerable void extending the height of the ground floor and both Mezzanine levels on the streetscape elevation. A defining architectural entrance statement adds further height and scale to that presentation, resulting in the provision of a direct relationship between Twin Street and integration of the Mezzanine and ground levels. The generous depth of the three-level void extends that relationship further, drawing the public realm into the building.

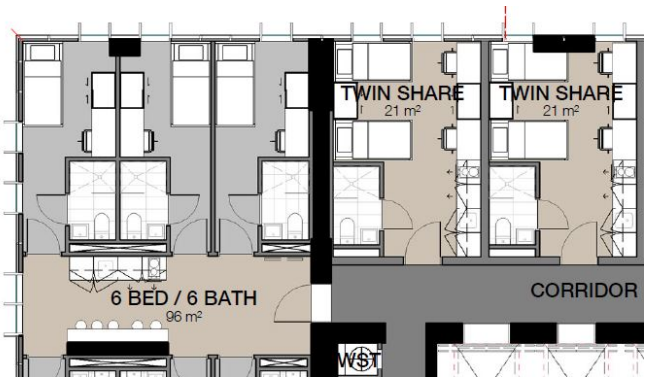
The ground floor has been configured to incorporate a dedicated retail café across the majority of the street frontage, integrated with the public lobby. A secondary secure access behind the public lobby provides access to the student accommodation reception at ground level.

The use of permeable materials and overhead canopies to improve the pedestrian experience.

Glazing dominates the streetscape which draws the public realm in through the use of the deep Mezzanine void, as discussed above. Canopies have been incorporated in association with the front entrance statement and the retail/café use to provide statement pieces that do not compromise the grandeur of the streetscape scale with horizontal intrusions.

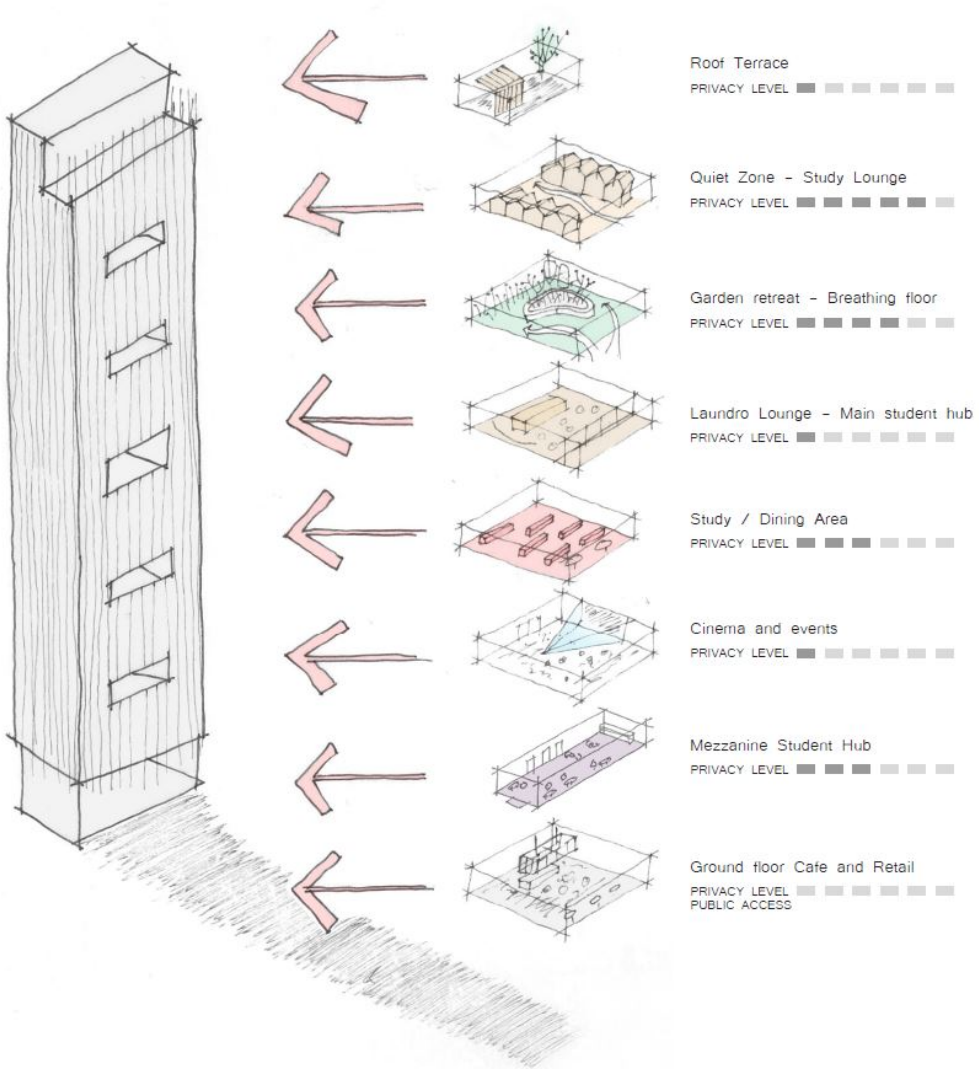
Illustration of the relationship between the external banding and glazing and the internal use.

The bedroom configurations have been re-oriented to ensure the access to windows is not generally impacted by bedding and furniture. This has been achieved in most cases, with the single bed aligning adjacent to a floor to ceiling window. In the few cases that this has not been achievable, such as in the twin share example, two windows are provided, with the second being uninterrupted.



Additional communal areas to be considered.

The ODASA proposition of incorporating additional communal areas has been responded to with the provision of a greater number of spaces accommodated vertically throughout the height of the building and the inclusion of larger footprints for greater functionality and improved student resident amenity outcomes.



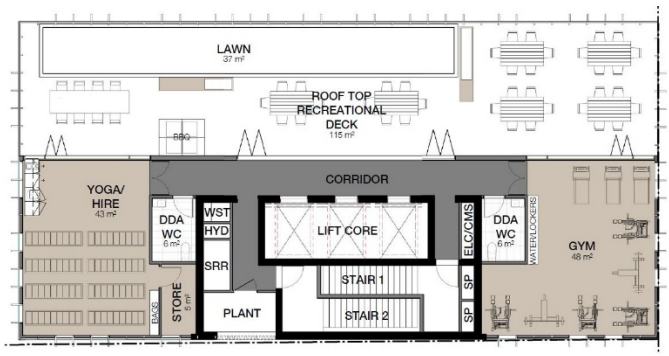
The functionality of the spaces is discussed further within the body of this report, however numerically, the building is provided with the following amenity areas, representing a significant increase to that originally proposed:

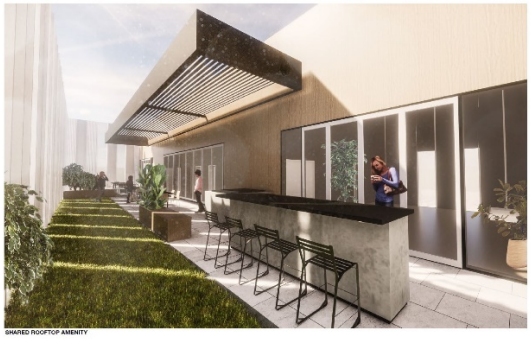
Floor Level	Floor Area (Amenity)	Balcony Area	Total Area	Original Concept Proposed Amenity	Net Floor Area Increase
Level 00	51 m^2 (Retail/Café)	-	**51 m^2**	37 m^2	**14 m^2**
Level M2	50 m^2 (Student Hub) 57 m^2 (Informal Lounge) 13 m^2 (Meeting Room)	48m^2	**168 m^2**	159 m^2	**9 m^2**
Level 5	40 m^2	17 m^2	**57 m^2**	-	**57 m^2**
Level 11	38 m^2	17m^2	**55 m^2**	19 m^2	**36 m^2**
Level 17	54 m^2 (Laundro Lounge)	40 m^2	**94 m^2**	76 m^2	**18 m^2**
Level 23	29 m^2	15 m^2	**44 m^2**	-	**44 m^2**
Level 29	43 m^2	18 m^2	**61 m^2**	-	**61 m^2**
Level 35	43 m^2 (Yoga/Hire) 48 m^2 (Gym)	115 m^2 37 m^2	**243 m^2**	267m^2	**(24 m^2)**
Total	466 m^2	307 m^2	**773 m^2**	558 m^2	**331 m^2**

Further refinement of the outdoor space at the roof top level.

The roof top arrangement is generally consistent with that originally proposed, including a yoga room, gym, outdoor recreation deck and associated lawn. The dimensions of each space have been slightly adjusted.

The space has however been further refined with a focus on its functionality, flexibility, weather protection and safety. With this endeavour, a canopy has been located forward of the lift core corridor entrance to the outdoor space, over the bi-fold doors that extend from this space. The outdoor space also incorporates two permanent stone bench tops, inbuilt bbq, stone planter boxes, paving and retention of a lawned area. To ensure student resident safety, the external cladding extends the full height of the height of the adjacent roof top rooms at this level.





The roof top provides a high level of amenity providing an effective balance of sun access and protection from the elements, while also incorporating an excellent flexibility in utilising the three sections of bi-fold doors to integrate the indoor and outdoor areas.

Further details of ESD strategies.

Lucid Consulting Australia have been engaged by the applicant, to provide a sustainability report outing the ESD strategies incorporated within the building design and are discussed further within the body of the report.

The interface between the western portion of the proposal and the adjoining Adelaide Arcade.

A generous setback of 3.0 metres is provided to the western boundary. The separation distance accommodates acknowledges a pre-existing sewer across the rear portion of the land and provides a clear separation of built form from the adjacent Adelaide Arcade building. This area has been allocated for bin storage.

Further illustrations of mass and scale relationships to Gay Arcade is encouraged.

The Design Statement provides a Twin Street elevation plan depicting the buildings relevant proportions as comparable with the adjacent Ibis Hotel and Gay's arcade. The canter-levered Level 1 floor is particularly relevant in this regard, providing a synchronicity with the external banding of Gay's Arcade. The recessed setback of the Ground and Mezzanine floors from Twin Street together with the setback of the building from the northern boundary accentuates the visual separation of the proposed building from the abutting State Heritage listed item exposing the side wall return of Gay's Arcade in the Twin Street streetscape.

TWIN STREET AT ENTRANCE

Twin Street Elevation

Elevation - Public Realm

Unit windows expected to be openable.

Bedroom windows oriented to the south and east are able to be opened to provide natural ventilation. Given the proximity of the northern and southern windows to the allotment boundary, these are not able to be operable. In the example of the northern and western elevations, air is able to be extracted through mechanical means, which is then distributed through the building. Mechanical ventilation will be utilised in these instances, with natural ventilation obtained on the southern and eastern elevations.

Further clarification of shared service vehicle movements on site and any consequential impacts given the potential increase in demand utilising Twin Street.

InfraPlan, in their **Traffic** report, have reviewed the crash history associated with Twin Street, which does not indicate any significant road safety issues. Further, in terms of vehicle traffic, as the site is currently used as an informal car park, traffic movements in association with the site will be reduced.

The delivery and waste management truck movements associated with the use have been considered in the InfraPlan report who summarise the movements that are able to be undertaken in a safe and convenient manner given the unique site circumstances and low traffic volumes experienced within Twin Street.

Consideration of engaging a waste management consultant given the hard waste generated by the building occupants.

InfraPlan have been engaged by the applicant, with their waste management recommendations in the **Waste Management** report forming part of the application documents.

The development of a construction strategy given the constricted site.

A builder has not been engaged at this stage. It is the Applicant's intention for the nominated builder to provide a construction strategy including a full Construction Environmental Management Plan (CEMP) that is consistent with their operational requirements that will be reflective of the recognised complexities that come with the constrained site.

It is acknowledged that the preparation of the CEMP will require consultation with the Adelaide City Council and Hines Property has demonstrable experience in this regard with the several developments it has successfully completed in the CBD of Adelaide.

The developer is reminded of Council landscape funding opportunities.

As with past projects the Applicant has every intention of collaborating with Council in relation to the landscaping of Twin Street and exploring relevant funding opportunities. It is noted that this would form part of a broader design of the whole of Twin Street in consultation with the various building owners and stakeholders balancing the needs for both pedestrian linkage and service delivery vehicles.

The design of the ground floor has been setback to facilitate improved pedestrian access within the adjacent narrow footpath that exits and encourages an integrated approach with the Adelaide City Council to the public realm materiality forward of the building envelope.

Consideration of integrated signage.

Signage zones have been identified and integrated within the design of the streetscape façade at ground level and to the top left corner of each elevation. The signage is considered and consistent with building identification for a building of this nature.

3.0 SUBJECT LAND AND LOCALITY

3.1 Subject Land

The subject land is centrally located on the western side of Twin Street, a narrow street orientated north/south linking Rundle Mall and Grenfell Street. The land has a frontage of 15.28 metres to Twin Street and a total area of approximately 435 square metres.

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

CT VOLUME/FOLIO	PARCEL	PLAN
Volume 6139, Folio 714	Lot 101	Deposited Plan 93330

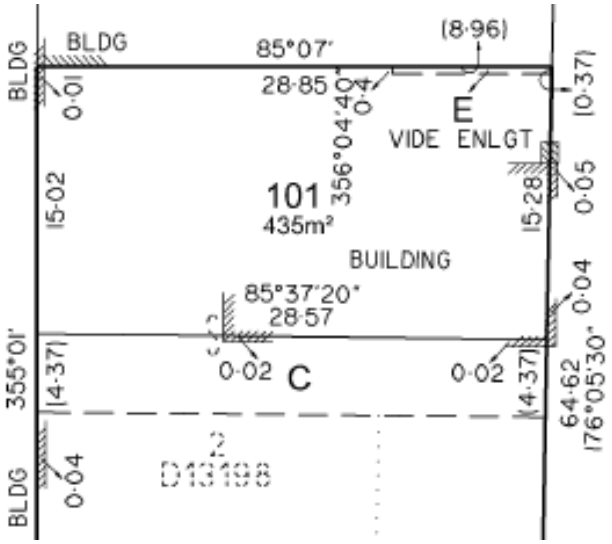


Figure 1: Lot 101, Volume 6139, Folio 714

The land is subject to an easement marked 'E' over the subject with development limitations. The easement is 400 millimetres to 370 millimetres wide and extends for a length of 8.96 metres adjacent to the northern boundary, from the sites north-eastern corner.

The land exists together with free and unrestricted right of way over the land on the adjacent allotment marked 'C'. The right of way runs the length of the southern boundary at a width of 4.37 metres.

The subject land is currently used as an ancillary car park, which is bitumen sealed and fenced. Controlled access to the car park is from the adjacent right of way to the south of the site. The site abuts the southern wall of Gays Arcade and the eastern elevation of latter additions to Adelaide Arcade.

Photo 1: Subject Site

Photo 2: Subject Site

Photo 3: Subject Site

3.2 Nature of the Locality

The locality is characterised by varying forms of commercial, hotel, retail, restaurant, community and institutional land uses in addition to a strong pedestrian environment represented through the adjacent Rundle Mall and Hindmarsh square precincts.

Twin Street defines the immediate locality, extending in a north/south direction for a length of approximately 140 metres. Twin Street is a no through road that terminates to the north at Rundle Mall and functions as a lane way at a width of approximately 6.0 metres. Whilst Twin Street accommodates two-way traffic, its thin width and pedestrian movements results in a low speed environment.

Small scale retail shops are a central feature fronting Twin Street at ground level, generally represented by apparel and book stores. A number of loading docks are also located at ground level, including the Citi Centre dual entry facility. The adjacent Ibis Hotel also has its Porte Cochere accessible off Twin Street. The buildings supporting these uses are generally two to eight stories in height, with retail, hotel, office and administration uses accommodated above ground level.

Gay's arcade represents a notable building within the Twin Street streetscape and is State Heritage listed. The three-storey brick building is located directly to the north and supports ground level retail uses while also providing pedestrian access to the State Heritage listed Adelaide Arcade to the west which also abuts the western boundary of the site.

The buildings on the eastern side of Twin Street are both listed as Local Heritage, specifically:

- 27-29 Hindmarsh Square (known as 28-30 Twin Street) ADELAIDE, a Former Warehouse; where the External form, in particular the fabric and detailing of Hindmarsh Square and Twin Street facades are elements of heritage Value; and
- 134-140 Grenfell Street ADELAIDE, the "Hindmarsh Buildings" a four-storey bluestone building with ground floor retail tenancies being listed as City Significance.

The Ibis Hotel is also a notable building, located directly to the south of the subject site. The recently constructed building provides a modern design within what is a largely traditional streetscape.

Rundle Mall is located within 100 metres to the north of the subject site, representing a convivial pedestrian boulevard incorporating a strong retail and outdoor dining focus that also includes personal services, community and institutional uses.

Hindmarsh square is located within 90 metres to the east of the subject site, representing a highly developed outdoor recreation area with four reserves fronting Pulteney and Grenfell Streets. Considerable investment has been made by the City of Adelaide in the public infrastructure within Hindmarsh square, including an integrated footpath network, landscape artwork, street furniture, large playground, mature landscaping and generous lawned areas.

The area is well serviced by public transport, with Grenfell Street being the main thoroughfare for buses entering the city from the recently constructed park lands O-Bahn bus tunnel. Four Grenfell Street bus stops are located with 100 metres of the subject site.

4.0 PROPOSED DEVELOPMENT

The Applicant seeks Development Plan Consent from the Commission to construct a 38 storey building which contains:

- a retail/café, public lobby, bike store, managers office and rear service infrastructure at ground level;
- plant infrastructure on Level 1 (including a mezzanine void), Level 17 and above the roof top communal student area;
- communal student amenity facilities on Levels M2, 5, 11, 17, 23 and 29;
- a rooftop garden with northern orientation; and
- a total of 510 purpose-built student accommodation beds, 10 of which are DDA compliant.

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

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

Table 1: Architectural Drawing Schedule

SHEET NUMBER	SHEET NAME	REVISION	REVISION DATE
A1100	SITE PLAN	K	03/08/18
A2200	LEVEL 00 – GROUND	K	03/08/18
A2200.M1	LEVEL M1 – MEZZANINE PLANT	K	03/08/18
A2200.M2	LEVEL M2 – MEZZANINE STUDENT HUB	K	03/08/18
A2201	LEVEL 01 – 16 (TYPICAL)	K	03/08/18
A2205	LEVEL 05 – AMENITY	K	03/08/18
A2211	LEVEL 11 AMENITY	K	03/08/18
A2217	LEVEL 17 – MID-PLANT	K	03/08/18
A2281	LEVEL 18 – 21 (DDA)	K	03/08/18
A2222	LEVEL 22-34 (TYPICAL)	K	03/08/18
A2223	LEVEL 23 – AMENITY	K	03/08/18
A2229	LEVEL 29 – AMENITY	K	03/08/18
A2235	LEVEL 35 – ROOF DECK	K	03/08/18
A2236	ROOF PLAN	K	03/08/18

4.1 Land Use

The proposed development is best described as a 38 storey Purpose Built Student Accommodation building with a retail tenancy on the ground floor level.

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

4.2 Accommodation Mix

The proposed student accommodation rooms provide five different types of accommodation typologies with variations therein, which include the following:

- two bed twin-share with a shared bathroom, and kitchen area;
- studio units with a double bed, ensuite and kitchen areas;
- five-bedroom units, with each bedroom featuring a private ensuite, a shared kitchen, and a corner configured lounge area private to that unit; and
- six-bedroom units, with each bedroom featuring a private ensuite, a shared kitchen and living area.

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

Unit Type	# of Units	# of Beds	Description
Six bedroom with ensuite and shared kitchen/living areas	36	216	One person per room, each with an ensuite and storage. Shared facilities include kitchen and living spaces.
Five bedroom with ensuite and shared kitchen/living areas	30	150	One person per room, each with an ensuite and storage. Shared facilities include kitchen and living spaces.
Twin share	42	84	Two people per unit with share bathroom, kitchen and storage.
Studio	60	60	One person per unit with ensuite, kitchen, and storage.
TOTAL	**168**	**510**	

4.2.1 Student Breakout/Amenity Spaces

Student Break out and amenity areas are conveniently located vertically throughout the building with designated communal areas located on the Ground Floor, Mezzanine 2, Level 5, Level 11, Level 17, Level 23, Level 29 and at the roof level 35.

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

- Ground Floor: Retail Café Space;
- Mezzanine 2: Student Hub, meeting room and Informal Lounge with Balcony;
- Level 5: Media Room and Balcony;
- Level 11: Quiet and Group Study space with Balcony;
- Level 17: Laundry, Laudro-Lounge and Balcony/Terrace;
- Level 23: Garden Retreat and relaxation area with Balcony;
- Level 29 Quiet and Group Study space with Balcony; and
- Roof Terrace / Level 35: Roof Top Terrace/Lawn and Wellness areas with Gym and Yoga Room.

4.3 Built Form

4.3.1 Building Height

The Adelaide(City) Development Plan provides a definition of building level within Schedule 1 of the Development Plan, which is identified as:

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

Accordingly, the proposed built form comprises the construction of a multi-storey building comprising 38 building levels with a maximum building height of 124.2 metres (169.5 metres AHD) above the Twin Street finished ground level.

4.3.2 Setbacks

Ground level setbacks vary from the respective front, side and rear boundaries of the site due the angled siting of the building to:

- accommodate the easement located in the north-eastern corner of the site; and
- the irregular dimensions of the rectangular shaped allotment.

Notably, the building is constructed on the front boundary from Level 1 and above, canter-levered above the Mezzanine and ground levels to provide design synchronicity with the State Heritage listed Gay's Arcade located on the adjacent site to the north.

4.3.3 Architectural Design Statement

The architectural report prepared by Woods Bagot accompanying the lodgement documents provides:

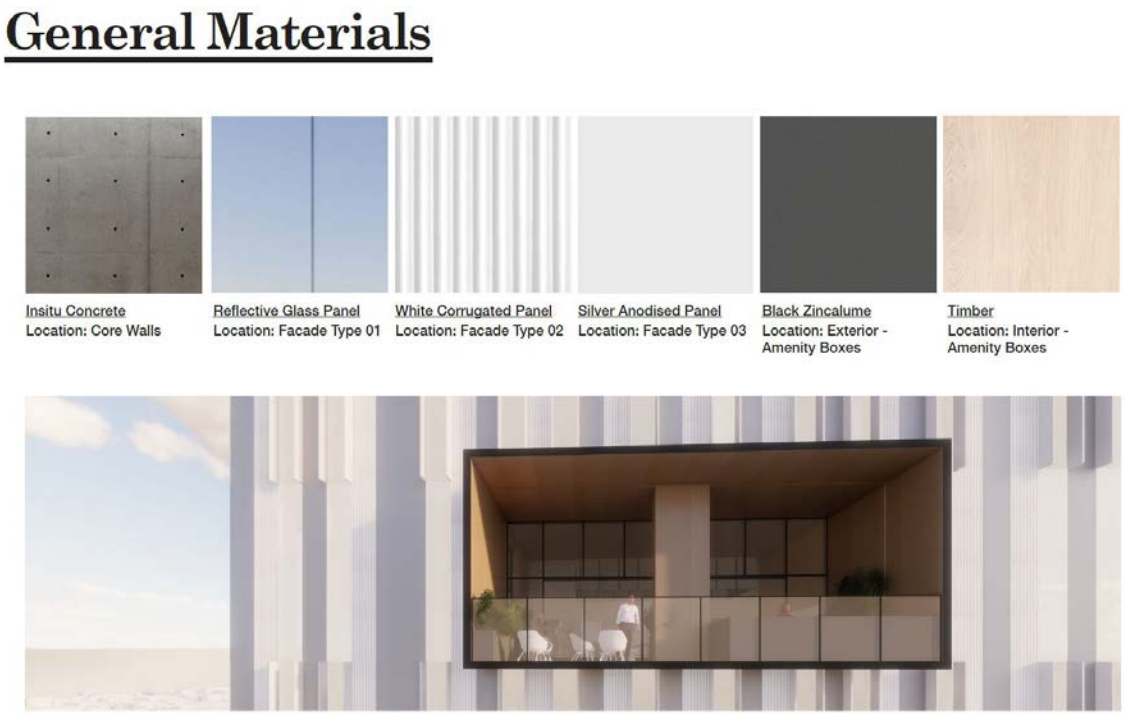
- site analysis;
- design principles;
- design response; and
- drawings.

The design statement depicts the contextual setting of the subject site with reference to both the Twin Street character and broader Adelaide CBD setting. Given the site dimensions there is a focus on the buildings vertical amenity, its connection with adjacent public spaces and the design principles that optimise the sites development opportunities. The design response presents as a singular expression that incorporates shared amenities with the activation of Twin Street and are provided through 3D imaging of internal and external components, material description, elevation perspectives and floor plans.

4.3.4 Materials and Finishes

The palette of external materials and finishes is detailed within the Design Architectural Report comprising:

- Insitu concrete walls to the building Core;
- a facade comprising a mix of Reflective Glass Panels, White Corrugated panels and silver anodised panels; and
- highlight Features to the Amenity Levels of Black Zincalume and Timber internal cladding to the balcony spaces.



4.3.5 Signage

Signage Zones are proposed at the parapet on all façades and on the Twin Street façade at the Mezzanine Level. No specific graphics or sign form has been identified at this stage.

4.4 Traffic and Parking

On site manoeuvrability is accommodated within the right of way to the south of the site to enable service delivery vehicles and waste collection to reverse into the site and exit in a forward motion. No onsite parking is proposed in association with the use.

Provision for the secure indoor parking of 21 bikes is accommodated within the development. Both internal and external access is provided to the 'bike workshop'.

4.5 Waste Management

The details of the waste management strategy are outlined in the report prepared by InfraPlan.

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

- at ground level through the provision of mobile waste bins and external waste bin storage at the rear of the site;

- waste is to be delivered to the ground level through a single chute system, with general and recyclable waste being separated by a mechanical mechanism when placed in the chute. Green and e-waste is to be manually disposed of at ground level;
- the ground level waste will be overseen by the facilities Manager. Weight sensors can be employed to alert Management of required bin rotations; and
- a private contractor will be employed to undertake waste removal three times a week.

4.6 Services

Lucid consulting has provided a services report outlining the special allocations provided to accommodate the following services with the design drawings:

- Electrical and communication services;
- Fire services;
- Hydraulic services including sewer, water and gas;
- Mechanical services; and
- Vertical transportation services.

The subject site is provided with sufficient access to public infrastructure services to accommodate the anticipated demand. Further, the design drawings appropriately accommodate the internal service infrastructure requirements of a building of this scale.

4.7 Staging

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

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

5.0 DEVELOPMENT PLAN ASSESSMENT

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

The subject land, under this version of the Adelaide (City) Development Plan, is situated entirely within the Capital City Zone as shown on Adel/19 and more specifically Policy Area 13 (Central Business Policy Area) as shown on Map Adel/50.

Figure 2: Zone Map Adel/19 Extract

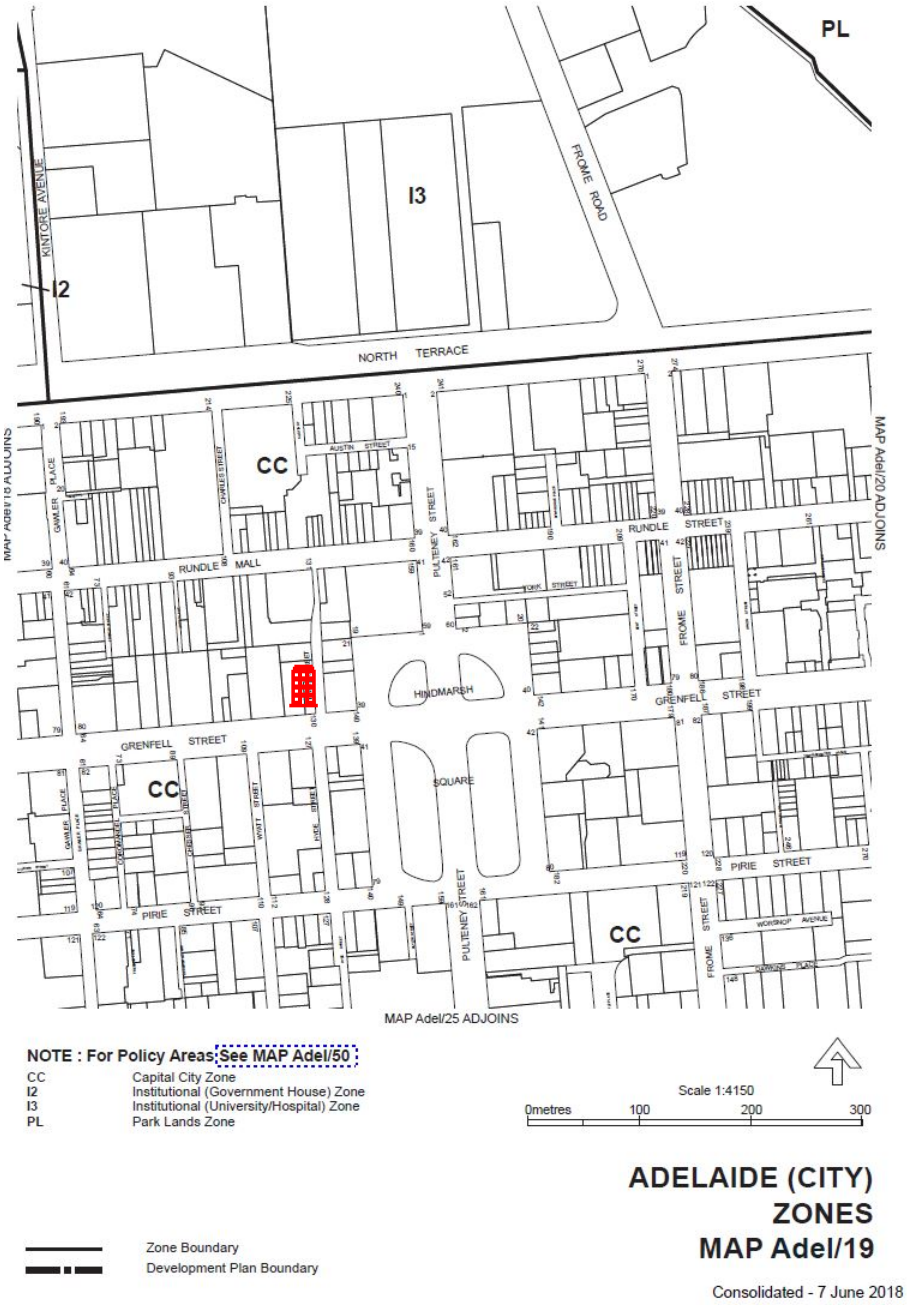


Figure 3: Policy Area Map Adel/50 Extract

5.1 Procedural Matters

5.1.1 Relevant Authority

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

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

The proposed development comprises the construction of a building with a Development Cost that exceeds $10 million in the City of Adelaide.

5.1.2 Nature of Development

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

5.1.3 Category of Development

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

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

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

5.1.4 Statutory Referrals

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

- Government Architect or Associate Government Architect (ODASA):

  24—Certain development in City of Adelaide

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

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

  9—Airports

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

- State Heritage Department

  5—State heritage places

  (1) Other than development to be undertaken in accordance with a Heritage Agreement under the heritage Places Act 1993 or in a River Murray Protection Area under the River Murray Act 2003, development with directly affects a State heritage place, or development which in the opinion of the relevant authority materially affects the context within which the State heritage place is situated.

5.2 Land Use

We are of the opinion that this student accommodation proposal, with the incorporation of ground level retail component is appropriate on the basis that:

- student accommodation is listed as an envisaged land use under PDC 1 of the Capital City Zone;
- the Desired Character Statement for Central Business Policy Area 13 advises, in part, that the Policy Area's role as the "pre-eminent economic, governance and cultural hub for the State will be supported by increased opportunities for student accommodation";
- PDC 1 of Business Policy Area 13 calls for a high concentration of educational activities;
- PDC 3 of Business Policy Area 13 calls for residential development or similar to be located above the ground floor level to enable street frontages to be activated; and
- all of the rooms have been designed in a manner which would allow for adaptive re-use of the building (as discussed further below).

5.3 Character and Setbacks

The Desired Character Statement for the Capital City Zone expresses the built form and character desired to be achieved, and makes specific reference to the Central Business Policy Area and the desired outcome for narrow streets and laneways such as Twin Street.

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

> *"High-scale development is envisaged in the Zone with high street walls that frame the streets.*
>
> *However an interesting pedestrian environment and human scale will be created at ground floor levels through careful building articulation and fenestration, frequent openings in building façades, verandahs, balconies, awnings and other features that provide weather protection.*
>
> *In important pedestrian areas, buildings will be set back at higher levels above the street wall to provide views to the sky and create a comfortable pedestrian environment. In narrow streets and laneways the street setback above the street wall may be relatively shallow or non-existent to create intimate spaces through a greater sense of enclosure. In the Central Business Policy Areas, upper level setbacks are not envisaged.*
>
> *Non-residential land uses at ground floor level that generate high levels of pedestrian activity such as shops, cafés and restaurants will occur throughout the Zone. Within the Central Business Policy Area, residential land uses at ground level are discouraged. At ground level, development will continue to provide visual interest after hours by being well lit and having no external shutters.*
>
> *There will also be a rich display of art that is accessible to the public and contextually relevant.*
>
> *Exemplary and outstanding building design is desired in recognition of the location as South Australia's capital. Contemporary juxtapositions will provide new settings for heritage places.*
>
> *Innovative forms are expected in areas of identified street character, referencing the past, but with emphasis on modern design-based responses that support optimal site development."*

"Minor streets and laneways will have a sense of enclosure (a tall street wall compared to street width) and an intimate, welcoming and comfortable pedestrian environment with buildings sited and composed in a way that responds to the buildings' context. There will be a strong emphasis on ground level activation through frequent window openings, land uses that spill out onto the footpath, and control of wind impacts."

"Development in minor streets and laneways with a high value character will respond to important character elements and provide a comfortable pedestrian environment…"

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

The ground floor and dual Mezzanine levels of the building provide floor to ceiling glazing on the streetscape façade and a dramatically framed entrance point to the public lobby. The location of the primary entrance/reception to the Student Accommodation and adjoining retail/café reinforces the interesting pedestrian environment and human scale envisaged within Twin Street, providing a high degree of pedestrian permeability.

The two-tier façade feature resulting from the canter– levered levels above the Mezzanine reinforces the envisaged "high scale" development with the façade built to the street alignment maintaining the high street walls. The design contrast of recessed glazing at the lower levels and the boundary development above provides the sense of 'enclosure' envisaged for laneway development while retaining an open and permeable streetscape. The proposed development delivers on the desired character for the Capital City Zone and specifically responds to the attainment of the character envisaged for the Central Business District.

5.4 Built Form

5.4.1 Design and Appearance

The following Built Form and Townscape Council Wide Objectives and PDCs outline the intent to be attained by development within the City of Adelaide, and directly reflect the importance of the built form and architectural expression contemplated within the CBD.

Capital City Zone

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

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

Materials, Colours and Finishes

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

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

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

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

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

> *"high standard of architectural design and finish which is appropriate to the City's role and image as the capital of the State"*
>
> *"Development which incorporates a high level of design excellence"*

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

The design responds to the contextual setting with the use of high quality materials and finishes on the façade including expansive glazing at ground level and the use of vertical blades, corrugated panel, anodized pans and vision glass on upper levels. The design intent of the vertical alignment of the façade creates a simple and singular expression providing a slender presentation. The slender nature of the building is complemented with five evenly spaced horizontal bands, achieved with the absence of vertical blades in these sections.

The five 'amenity boxes' are proud of the façade and evenly spaced and aligned with the banding. The amenity boxes provide an additional visual feature at regular intervals on the northern elevation. The vertical 'stepping' results in visual relief and an integrated and interesting design element. The feature amenity boxes also promote a human scale element to the upper levels.

At ground level, the innovative design and contemporary architectural presentation of the building does not seek to mimic or copy existing buildings but responds subtly to their design cues in particular Gay's arcade, and therefore sits comfortably in the context of Twin Street.

The Schematic Design Architectural Report prepare by Woods Bagot accompanying the lodgement documents provides a detailed description of the Design Philosophy and the Contextual reference for the design.

5.4.2 Building Height

PDC 22 of the Capital City Zone and Council Wide PDC 172 provide guidance with respect to the height of buildings. Together, they recommend that:

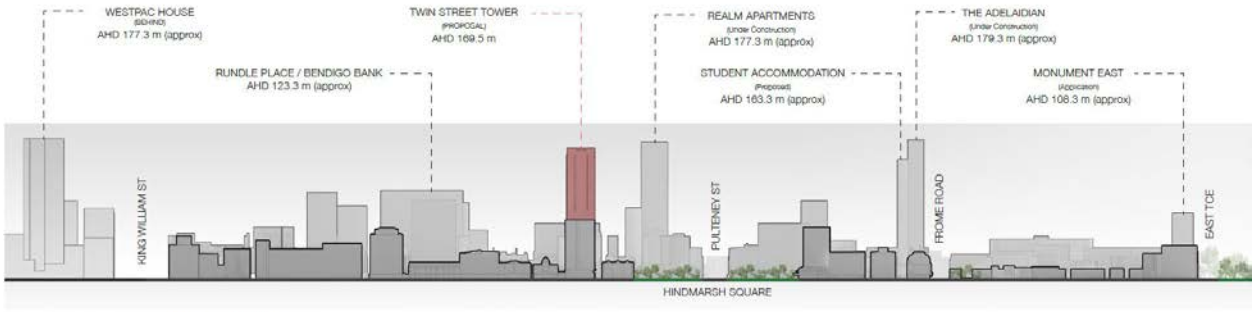
PDC 22: Development should have optimal height and floor space yields to take advantage of the premium City location and should have a building height no less than half the maximum shown on Concept Plan Figures CC/1 and 2, or 28 metres in the Central Business Policy Area, except where one or more of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

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

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

The proposed building will be 38 storeys and 124.2 metres (169.5 metres AHD) above the Twin Street finished ground level. It will therefore comply with Concept Plan Figure CC/2, as the subject land falls within the confines of an area where there is '*no prescribed height limit*'.

The building will exceed the relevant Obstacle Limitation Surface (OLS) Contour shown on Map Adel/1 (Overlay 5) of 130 metres AHD however the building will be lower than the existing, approved and under construction buildings as shown on the cross section of building heights below.



Grenfell Street Elevation (Looking North)

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

Notably, ODASA has considered the height of the building in the context of its surrounds and have provided their endorsement of the height in the context of the locality, subject to the relevance of design.

5.4.3 Building Composition

The following Capital City Zone Principles provide guidance with respect to the composition of building.

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

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

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

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

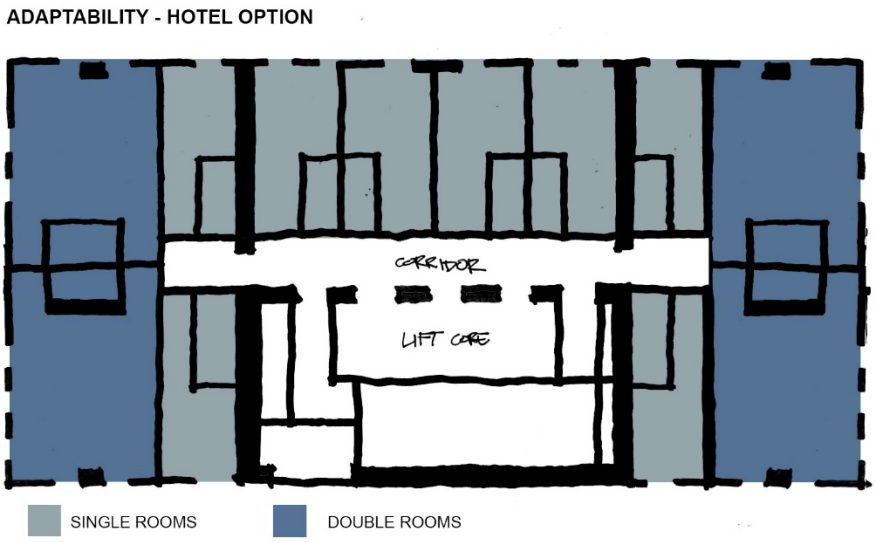
PDC 10 **Buildings should be positioned regularly on the site and built to the street frontage, except where a setback is required to accommodate outdoor dining or provide a contextual response to a heritage place.**

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

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

5.4.4 Building Adaptability

The following image represents a typical structural floor plate configured within the load bearing structures to accommodate 8 single and 4 double hotel rooms. It is important to note that the internal walls are light weight structures readily provide for an adaptable floor plate configuration that can accommodate a range of alternate land uses including various configurations of hotel accommodation. The floor plate configuration allows for a functional hotel arrangement, further enhanced with the existing front of house format at ground level. The capability for a hotel conversion is achievable, functional and practically manageable.



5.5 Student Accommodation Configuration

Council Wide Objective 9 and Council Wide Principles 10, 11, 12 and 13 provide guidance with respect to the configuration of student accommodation. Together, they recommend that:

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

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

(a) **residents have access to common or shared facilities that enable a more efficient use of space (such as cooking, laundry, common rooms or communal open space);**

(b) **every living room has a window that provides an external outlook and maximises access to natural light;**

(c) **the development is designed to enable easy adaptation or reconfiguration to accommodate an alternative use;**

(d) **the development is designed to maximise opportunities to access natural ventilation and natural light;**

(e) **private open space is provided in the form of balconies and/or substituted with communal open space (including rooftop gardens, common rooms or the like) that is accessible to all occupants of the building; and**

(f) **the internal layout and facilities provide sufficient space and amenity for the requirements of student life and promote social interaction.**

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

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

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

The fundamental land use for the building is for the purpose of providing high quality Student Accommodation. The presence of an onsite manager, the effective design implementation of CPTED principles, generous communal amenity areas and a high architectural design standard will provide the successful delivery of a pleasant and safe student residential experience.

The location of the proposed development within close proximity to the institutional North Terrace precinct accommodating both the Adelaide University and the University of South Australia Campuses is pivotal in providing conveniently located student accommodation services. Pedestrian access to each University campus is highly populated, safe, convenient, generally protected from the elements and provides a short walking distance of less than 300 metres.

The site has close access to the student's place of education, whilst also providing the convenience of services associated with retail, recreation and entertainment afforded by the proximity to Rundle Mall and surrounding precincts. The outdoor recreation opportunities of the closely located Hindmarsh square also add to the amenity experience for student residents.

The nature of the accommodation rooms ensure that:

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

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

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

- five-bedroom units, each bedroom with an ensuite;
- six-bedroom units, each bedroom with an ensuite;
- two bed twin share a with shared bathroom; and
- studio units with double bed and ensuite.

The variety in accommodation typology ensures a healthy social mix with the general promotion of shared living environments while also providing independent living opportunities. The model of five and six student residents sharing kitchen facilities enable social cross pollination, adding to the sense of community within the building.

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

Diverse Building Amenity

Unique to this application are the 8 different communal amenity levels.

These spaces are strategically spread throughout the building and will provide occupants with a variety of spaces and experiences to encourage collaboration and learning, these are summarised as follows;

- Ground Floor Public Areas: Meeting point and public café and retail;
- Mezzanine Two: Student Hub and Informal Lounge;
- Level 5: Cinema and Events Space;
- Level 11: Study Space;
- Level 17: "Laundro Lounge" and Laundry Mat, the main student Hub;
- Level 23: Garden Retreat and "breathing floor";
- Level 29: "Quite Zone" shared study booths; and
- Rooftop: Rooftop Lawn, and Wellness Areas, gymnasium and yoga facilities.

Ground Floor

The ground floor provides a retail/café meeting space with indoor and outdoor seating opportunities with a direct connection with Twin Street. The extensive glazing and void above provides a spacious and light environment of high amenity value, representing an inviting place for resident students to meet. Notably, there is a direct connection with the Mezzanine level above, linking the two spaces.

Level M2

Incorporating a student hub, lounge and northern facing balcony that also incorporates a mezzanine providing a direct connection with the ground level retail and lounge space via a three-level storey void. The communal area provides common space of 155 square metres in size, with excellent access to natural breezes through expansive bi-fold doors and to northern light due to the modest height of the adjacent Gay's arcade.

Level 5, 11, 23 and 29

The amenity areas are evenly spaced within the building to provide convenient access from each floor level to a large and varied indoor living spaces ranging in size from 29 square metres to 40 square metres. The spaces incorporate an associated balcony ranging in size from 15 square metres to 17 square metres. The Mezzanine space includes a 48 square metre terrace, and visual access to the three-level lobby void. The total indoor/outdoor floor areas range from 44 square metres to 57 square metres.

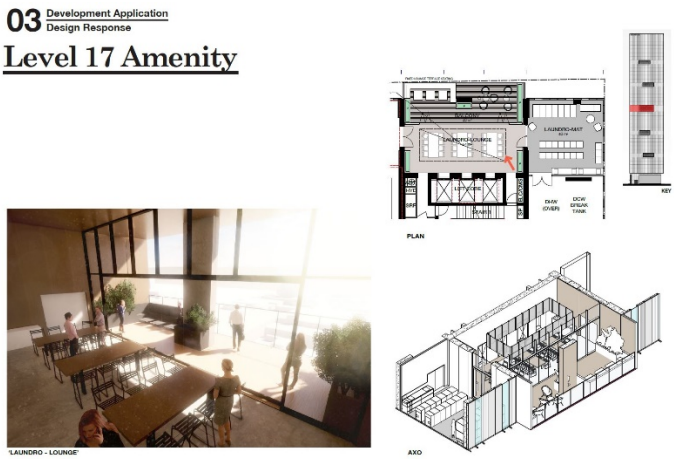
Each example incorporates excellent access to northern sunlight with floor to ceiling glazing in addition to natural breezes. The spaces are of ample dimensions to accommodate small and large social groupings. Kitchen facilities are incorporated to provide versatility in the space. Each amenity space will provide the building occupants with a different experience through their design differentiation and unique attributes.

Level 17

The building plant and equipment has been incorporated within Level 17 in lieu of the typical roof top location generally incorporated in a building of this scale, to facilitate the opportunity for a roof top garden. A communal laundromat has been also been incorporated at Level 17 with a large associated 'laundro-lounge' and balcony representing a generous communal indoor and outdoor communal recreation area.

The ‘laundro-lounge’ incorporates a floor area of 54 square metres, with an associated balcony of 40 square metres. Expansive glass bi-fold doors allow generous access to northern sun light in addition to providing a flexible indoor/outdoor space with a total floor area of 94 square metres.

The ‘laundro-lounge’ is separated from the laundromat and plant to limit the noise interface between the uses. The concept of locating the communal recreation area adjacent to the laundromat is to provide an activated space that facilitates chance encounters for student residents, furthering social cohesion and a sense of community within the building.



Roof Top

The roof top recreational deck is a key amenity element for student residents and a design strength for the proposal. The space incorporates two distinct wellness rooms, nominated as the yoga room and gym, at 43 square meters and 48 square metres respectfully. In addition, an outdoor recreation area of 152 square metres extends across the northern elevation of the building providing a flexible space with access to sun light and breezes, including a 37 square metre section of lawn. The roof top has been designed as a versatile space, providing an opportunity to integrate both the indoors and outdoors with the inclusion of generous north facing glass bi-fold doors.

5.6 Signage

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

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

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

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

Five signs have been integrated within the design including on the streetscape façade at ground level and on the top left corner of each elevation. The signage provides building identification typical of a building of this nature. Each sign will be consistent and simple in design and style. The signs are considered to be of appropriate size, scale and number for a building of this size, providing effective proportions and a simple presentation.

5.7 Access, Parking and Traffic

5.7.1 Pedestrian Access

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

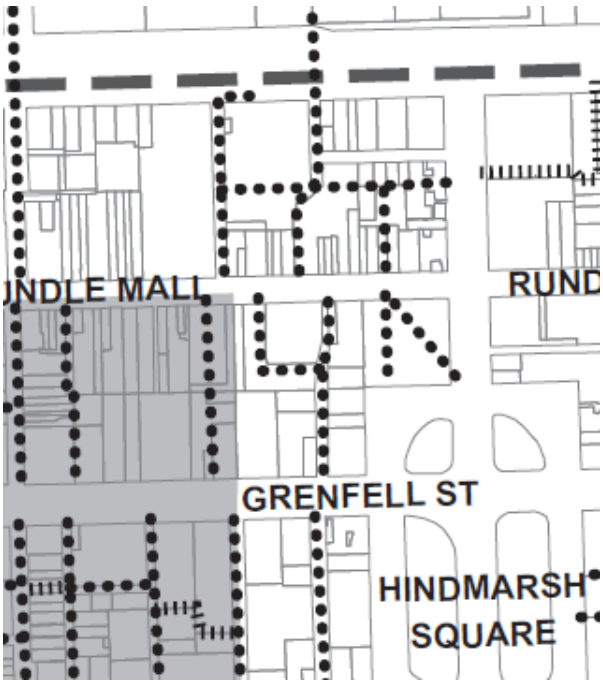
PDC 27 Development should provide pedestrian linkages for safe and convenient movement with arcades and lanes clearly designated and well-lit to encourage pedestrian access to public transport and areas of activity. Blank surfaces, shutters and solid infills lining such routes should be avoided.

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

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

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

Map-Adel/1 (Overlay 4) nominates Twin Street as an important pedestrian link that is to be developed and maintained to enhance safe and convenient access within the city, as illustrated on the following excerpt:



Notably, the pedestrian links to be maintained are generally north/south in nature resulting in excellent accessibility to North Terrace via Rundle Mall, from Twin Street. These pedestrian linkages are supported through the development of this high-quality student accommodation development in this strategically important location and encourages Council's further development of these thoroughfares. A great pedestrian focused population on Twin Street will ensure greater demand and frequency, improving the economies of scale for additional infrastructure investment from Council, providing a city-wide benefit.

5.7.2 Vehicular Access

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

Objective 70:	**Adequate off-street facilities for loading and unloading of courier, delivery and service vehicles and access for emergency vehicles.**
PDC 240	**Development should be designed so that vehicle access points for parking, servicing or deliveries, and pedestrian access to a site, are located to minimise traffic hazards and vehicle queuing on public roads. Access should be safe, convenient and suitable for the development on the site, and should be obtained from minor streets and lanes unless otherwise stated in the provisions for the relevant Zone or Policy Area and provided residential amenity is not unreasonably affected.**
PDC 241	**Facilities for the loading and unloading of courier, delivery and service vehicles and access for emergency vehicles should be provided on-site as appropriate to the size and nature of the development. Such facilities should be screened from public view and designed, where possible, so that vehicles may enter and leave in a forward direction.**

While it is acknowledged that trucks will be required to reverse into the site, contrary to the intent of PDC 241, given the low speed and low traffic volume environment, this is not considered to represent an unsafe manoeuvre. The delivery and waste management truck movements associated with the use have been considered in the InfraPlan report who surmise the movements are able to be undertaken in a safe and convenient manner given the unique site circumstances and Twin Street characteristics.

5.7.3 Car Parking

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

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

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

5.7.4 Bicycle Parking and Facilities

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

PDC 234 **An adequate supply of on-site secure bicycle parking should be provided to meet the demand generated by the development within the site area of the development. Bicycle parking should be provided in accordance with the requirements set out in Table Adel/6.**

PDC 235 **Onsite secure bicycle parking facilities for residents and employees (long stay) should be:**

- **(a) located in a prominent place;**
- **(b) located at ground floor level;**
- **(c) located undercover;**
- **(d) located where passive surveillance is possible, or covered by CCTV;**
- **(e) well lit and well signed;**
- **(f) close to well used entrances;**
- **(g) accessible by cycling along a safe, well lit route;**
- **(h) take the form of a secure cage with locking rails inside or individual bicycle lockers; and**
- **(i) in the case of a cage have an access key/pass common to the building access key/pass.**

Table Adel/6 does not contemplate a bike parking rate for student accommodation. InfraPlan have considered an appropriate bike parking rate for this form of development in referencing the recently approved Urbanest North Terrace. The GTA Consultant report supporting that proposal has also been referenced which suggested a rate of 1 per 38.6 beds as being appropriate.

This proposal incorporates a rate of one per 20.4 beds with the provision of 21 spaces within the bike work store at ground level, a further six spaces available on bike rails at street level and the consideration of two parks attributed to the retail use. Given the history of recently constructed student accommodation, the provision of bike parking is considered to be appropriate. Further, the design and location of the internal bicycle parking facility satisfies all of the clauses (a) to (i) recommended in PDC 235.

5.8 Services

Council Wide Objective 41 and Council Wide PDCs 132, 133 and 135 provide guidance with respect to the provision of services. Together, they recommend that:

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

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

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

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

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

The Infrastructure Report accompany the application documentation lists all of the mechanical, electrical, vertical transportation, hydraulic and fire protection services that will be provided as part of the proposed development and it is particularly relevant for the Commission to note that:

- the building will have adequate access to the existing electricity, water, sewerage, gas and communications infrastructure along Twin Street;
- the waste, transformer, plant, gas and power on the ground floor level of the building will not be visible from the public realm; and
- fire water storage tank, dual diesel fire pump set, and DCW break tank are to be located at Level 17 to facilitate the roof top garden opportunity.

5.9 Environmental Considerations

5.9.1 Heritage and Conservation

The site of the proposed development is located adjacent to a State Heritage Place, with consideration of the following Council-Wide Objectives and Principles of Development Control:

Objective 43: **Development that retains the heritage value and setting of a heritage place and its built form contribution to the locality.**

PDC 140 **Development on land adjacent to a heritage place in non-residential Zones or Policy Areas should incorporate design elements, including where it comprises an innovative contemporary design, that:**

- **(a)** **utilise materials, finishes, and other built form qualities that complement the adjacent heritage place; and**
- **(b)** **is located no closer to the primary street frontage than the adjacent heritage place.**

PDC 142 **Development that abuts the built form/fabric of a heritage place should be carefully integrated, generally being located behind or at the side of the heritage place and without necessarily replicating historic detailing, so as to retain the heritage value of the heritage place.**

The design team has been very conscious of providing a streetscape outcome that respects the context and setting of the State Heritage listed Gay's arcade located on the adjacent site to the north. To this end, the canter-levered Level 01 floor is particularly relevant, providing a synchronicity with the external banding of the arcade. The scale and proportion of this section of the building has also been recessed to ensure the arcade retains its prominence, with its location on the street frontage boundary.

A northern boundary setback distance of 1.8 metres also aids in separating the streetscape presentation of the two buildings, with each retaining their own identity. The proposals streetscape presentation does not mimic or replicate Gay's Arcade but does incorporate consistent design elements that respects its scale and a façade line that is recessed behind the Heritage building.

5.9.2 Crime Prevention Through Urban Design

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

This is further reinforced through the nature of the proposed accommodation for students where the feeling of a safe and secure environment adds to their experience of the accommodation facility.

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

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

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

(a) **promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:**

- **(i)** **orientating windows, doors and building entrances towards the street, open spaces, car parks, pedestrian routes and public transport stops;**
- **(ii)** **avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;**
- **(iii)** **arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;**
- **(iv)** **positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;**
- **(v)** **creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;**
- **(vi)** **locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;**
- **(vii)** **ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and**
- **(viii)** **ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.**

(b) **provide access control by facilitating communication, escape and path finding within development through legible design by:**

- **(i)** **incorporating clear directional devices;**
- **(ii)** **avoiding opportunities for concealment near well travelled routes;**
- **(iii)** **closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;**
- **(iv)** **use of devices such as stainless steel mirrors where a passage has a bend;**
- **(v)** **locating main entrances and exits at the front of a site and in view of a street;**
- **(vi)** **providing open space and pedestrian routes which are clearly defined and have clear and direct sightlines for the users; and**
- **(vii)** **locating elevators and stairwells where they can be viewed by a maximum number of people, near the edge of buildings where there is a glass wall at the entrance.**

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

- **(i)** **clear delineation of boundaries marking public, private and semi-private space, such as by paving, lighting, walls and planting;**
- **(ii)** **dividing large development sites into territorial zones to create a sense of ownership of common space by smaller groups of dwellings; and**
- **(iii)** **locating main entrances and exits at the front of a site and in view of a street.**

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

(i) avoiding blind sharp corners, pillars, tall solid fences and a sudden change in grade of pathways, stairs or corridors so that movement can be predicted;
(ii) using devices such as convex security mirrors or reflective surfaces where lines of sight are impeded;
(iii) ensuring barriers along pathways such as landscaping, fencing and walls are permeable;
(iv) planting shrubs that have a mature height less than one metre and trees with a canopy that begins at two metres;
(v) adequate and consistent lighting of open spaces, building entrances, parking and pedestrian areas to avoid the creation of shadowed areas; and
(vi) use of robust and durable design features to discourage vandalism.

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

- the ground floor frontage to Twin Street has the primary retail shopfront and lounge with extensive glazing to avoid potential areas of entrapment;
- the Student Accommodation reception desk is centrally located with clear lines of sight to Twin Street, the lift core, stair well entrance and rear infrastructure;
- CCTV coverage is provided to the public areas and communal spaces within the building;
- the Mezzanine level provides direct line of sight to Twin Street; and
- the internal circulation corridors on the student accommodation levels provide clear lines of sight and are of an appropriate width.

Further to the above design and operation techniques is the fundamental passive benefit derived from the accommodation of up to 510 residents, their comings and goings and use of the adjacent street network.

5.9.3 Waste Management

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

PDC 101 A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.

PDC 103 Development greater than 2000 square metres of total floor area should manage waste by:

(a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;
(b) on-site storage and management of waste;
(c) disposal of non-recyclable waste; and
(d) incorporating waste water and stormwater re-use including the treatment and re- use of grey water.

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

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

- at ground level through the provision of mobile waste bins and external waste bin storage at the rear of the site;
- waste is to be delivered to the ground level through a single chute system, with general and recyclable waste being separated by a mechanical mechanism when placed in the chute. Green and e-waste is to be manually disposed of at ground level;
- the ground level waste will be overseen by the facilities Manager. Weight sensors can be employed to alert Management of required bin rotations; and
- a private contractor will be employed to undertake waste removal three times a week.

5.9.4 Stormwater Management

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

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

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

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

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

Given the modest size of the allotment, stormwater received from the proposed development:

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

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

5.9.5 Wind Effects

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

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

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

Whilst the full effects of the proposed building on wind flows in this locality are outlined in detail in the Qualitative Wind Assessment report, it is important for the Commission to note that:

- given the height of the building, there will be some effect on the local wind environment;
- the impacts on pedestrian comfort and safety are not expected to be significant; and
- With consideration of the Lawson comfort perspective, the wind conditions around the development are expected to be classified as acceptable for pedestrians standing or waking and pass the distress/safety criterion.

With these findings, the proposed development is considered to satisfy Council Wide PDC's 119 and 125.

5.10 Building Services

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

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

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

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

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

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

5.11 Environmentally Sustainable Design

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

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

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

(a) appropriate orientation of the building by:

(i) maximising north/south facing facades;
(ii) designing and locating the building so the north facade receives good direct solar radiation;
(iii) minimising east/west facades to protect the building from summer sun and winter winds;
(iv) narrow floor plates to maximise the amount of floor area receiving good daylight; and/or
(v) minimising the ratio of wall surface to floor area.

(b) window orientation and shading;
(c) adequate thermal mass including night time purging to cool thermal mass;
(d) appropriate insulation by:

(i) insulating windows, walls, floors and roofs; and
(ii) sealing of external openings to minimise infiltration.

(e) maximising natural ventilation including the provision of openable windows;
(f) appropriate selection of materials, colours and finishes; and
(g) introduction of efficient energy use technologies such as geo-exchange and embedded, distributed energy generation systems such as cogeneration*, wind power, fuel cells and solar photovoltaic panels that supplement the energy needs of the building and in some cases, export surplus energy to the electricity grid.

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

- high performance building envelope: wall, floor and roof insulation R-values to meet/exceed best;
- practice guidelines;
- high performance glazing with solar control to mitigate solar heat gains in summer;

- use of architectural facade feature elements to shade glazing;
- energy efficient massing with minimal exposed ceilings and floors (Levels 1 to Level 35/Roof have the same boundaries);
- LED lighting throughout;
- motion sensors for efficient lighting control within common areas;
- water efficient fittings;
- secure bicycle storage;
- low volatile organic compound (VOC) paints; and
- provided amenities to provide high quality of living environment (gym and yoga studios).

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

6.0 CONCLUSION

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

In particular, the proposed development:

- establishes a land use that is expressly envisaged within the Zone and Central Business Policy Area;
- supports the existing tertiary education institutions in close proximity to the site;
- establishes a building that exhibits design excellence and will make a positive contribution to the pedestrian intimacy of Twin Street and the sky line of the broader CBD;
- reinforces and enhances the active street frontage to Twin Street;
- provides streetscape scale proportions sympathetic with the State Heritage listed Day's arcade located to the north;
- incorporates facilities and services as part of the integrated student accommodation facility that will enhance the experience for the occupants of the building;
- the proposal incorporates eight generously sized communal recreation areas evenly spaces throughout the building, with a total area of 773 square metres, providing a high level of amenity for resident students with the provision of space, natural sun light and breezes;
- is ideally located within close proximity to adjacent Rundle Mall and Hindmarsh Square, providing high amenity communal open space and convenience shopping opportunities for student residents;
- provides for a diversity in accommodation options available to students through the provision of different accommodation rooms that allow for affordable accommodation;
- incorporates construction methodology that allows for the flexible re-use of the building in the event that an alternate land use is warranted; and
- provides for the necessary services and operation functions without detriment to the locality.

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

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

Stewart Hocking MPIA
B/A in Planning

3 August 2018

infraPlan




Traffic Design Report

29 Twin Street, Adelaide

October, 2018

Project Name	**IP18.021 Twin Street Student Accommodation**
Client contact details	**Ben Colmer** Project Manager RCP Level 2, French Street ADELAIDE SA 5000 p: 08 8205 7000 m: 0423 873 878 bcolmer@rcp.net.au
Consultant contact details	**Erik Stopp** Senior Transport Engineer InfraPlan (Aust) Pty Ltd Level 3, 66 Wyatt Street ADELAIDE SA 5000 p: 08 8227 0372 erik@infraplan.com.au

Document Control					
Name:	**IP18.021 Twin Street - Traffic Design Report**				
Version	**Notes**	**Author**	**Date**	**Reviewer**	**Date**
1	Issue	JE	30.7.18	ES	30.7.18
2	CoA comment revision	ES	08.10.18		

Table of Contents

1. Introduction

InfraPlan has been engaged to prepare a Traffic Design Report for a proposed student accommodation development with ground floor café in Twin Street, Adelaide. This replaces an existing car park.

In the preparation of this report, the following documents have been reviewed:

- the Adelaide (City) Development Plan (the Development Plan) consolidated 7 June 2018
- Plans 140197 A2200 Rev K issued by Woods Bagot 30 July 2018

2. Existing Scenario

The development site sits within the Central Business Policy Area and Primary Pedestrian Area as defined in the Development Plan Maps Adel/50 and Adel/1 (Overlay 2A) respectively. Twin Street is identified as an Existing Pedestrian Link on Map Adel/1 Overlay 2A. The site is currently utilised as an at-grade carpark, likely used by staff of the Ibis Hotel or surrounding businesses. The site is fenced and access is controlled via a boom gate.

The Twin Street site is located in the heart of the city and within close walking distance to the Main campus of Adelaide University and UniSA City East campus. The new tram connection on North Terrace will link the site to the University campuses on the western side of Morphett Street. North Terrace, Grenfell Street, Pulteney Street and King William Street are all identified as High Concentration Public Transport Routes in the Development Plan (Map Adel/1 Overlay 4), the development site sits within these four roadways.

The development site is located between the civic and educational boulevard of north Terrace, the Rundle Mall shopping strip and the Central Business District. The site is surrounded by shopping and entertainment amenities.

2.1 Street Layout

Twin Street is no through road with a carriageway width of approximately 6.0m providing service access to businesses along Twin Street and fronting Rundle Mall. The street is accessed as left-in, left-out only from the southern end at Grenfell Street with a median barrier on Grenfell Street preventing right turn movements. Bollards and planter boxes prevent vehicle access to Rundle Mall at the northern end.

The road narrows at the northern end to a single lane. Footpaths of between 1.5 and 1.7m are present on both sides of the roadway. The southernmost section of Twin Street provides access to the porte cochere at the Ibis Hotel on the western side of the road. Vehicles need to enter and exit Twin Street in the forward direction and will likely use the lane between the subject site and the Ibis Hotel or other driveways and laneways on Twin Street to turn around.

There is a private right of way on the property that is shared with the Ibis Hotel.

2.2 Collision Data

There have been two reported crashes along Twin Street, both involving hitting a parked vehicle. There are three reported crashes at the junction of Twin Street and Grenfell Street although these are likely all related to traffic along Grenfell Street being reported as 'rear end'. The reported crash history does not indicate any significant road safety issues associated with Twin Street.

2.3 Parking and Loading

There are two sections of on-street parking on the western side of Twin Street with no parking permitted on the eastern side of the roadway. The southern section, alongside the Ibis Hotel porte cochere provides space for two vehicles and is signed *Loading Zone (10 minute) 8am - 6pm any day*. No limit applies between 6pm and 8am.

The northern section, between the right of way lane and the pedestrian entrance to Gay's Arcade provides space for up to four vehicles and is signed *Loading Zone (10 minute) 6am - 10am any day* and *No Parking 10am - 6pm any day*. No limit applies between 6pm and 6am.

Twin Street provides access to loading docks, service lanes and one private off-street parking facility.

2.4 Cyclists

There are no bicycle lanes or road markings on Twin Street and no visible bike parking facilities in the public spaces. Twin Street is not labelled as a cycling route at any level on the Adelaide (City) Bicycle Network (Development Plan Map Adel/1 Overlay 3).

Grenfell Street does not have bicycle lanes and cycling is not permitted in Rundle Mall and neither are part of the Adelaide (City) Bicycle Network. Twin Street is therefore only attractive to cyclists as a destination and not as a through route.

3. The Proposal

The site presents a number of unique opportunities that fit the site while no adding significant impacts to the surrounding road network. The location of the proposal can be seen in Figure 1 below.

A total of 168 dwellings are proposed with a total of 510 beds for student accommodation as broken down in the table below. This will include a café of approximately 50m^2.

Type	Units	Bedrooms
1 bedroom studios	60	60
Twin share apartments	42	84
5 bedroom apartments	30	150
6 bedroom apartments	36	216
Totals	**168**	**510**

Commercial	Area (m^2)
Café	46

The proposal does not intent to alter existing driveway crossovers along Twin Street nor impact on the right of way and porte cochere of the adjacent Ibis Hotel.

Figure 1: Location map – proposed mixed-use development

3.1 Vehicle Traffic

The development proposal includes vehicular access from Twin Street at the south-eastern corner of the property via an existing vehicular crossover. A right of way access lane is shared with the Ibis Hotel to the south of the site. This dead-end lane is approximately 4.0m wide and 28.5m long and caters for movements to service both the subject site and the hotel bordering the site to the south.

In regard to existing use of the right of way, operators of the hotel have advised:

Deliveries into the lane start from approximately 05:00 and will run through typically until 22:00. The bulk of these deliveries are between 10:00 – 15:00. On average, the lane would be accessed up to 15 times per day, with the largest vehicle being the rubbish collection truck.

This is deemed a relatively low use of the right of way with on average say 1 vehicle an hour and up to 2 or 3 vehicles in peak periods.

Vehicle traffic associated with the proposed development will be limited to service vehicles supplying the café and residential tower, waste collection vehicles accessing the right-of-way lane, delivery vehicles and limited visitor parking outside business hours. With waste collection only being required 3 times a week based on the Waste Management Plan prepared by infraPlan, it is anticipated that in total less than 5 movements in total utilising the laneway would be generated in a typical day.

Combined with existing use, a total of around 20 trips per day would be using the right of way being approximately 2-3 vehicles during a peak hour. Assuming an average service time of around 5 minutes, there would be low risk of conflict of vehicles using the right of way. This risk is further minimised as discussed in sections 3.3 and 3.4 with the provision of on-street loading and no parking zones that provide alternatives to the use of the right of way.

As the development does not include car parking, no analysis of parking demand, queuing or traffic generation from the site has been undertaken. Given the development will replace an existing car park, there are likely to be fewer trips associated with the development. The Adelaide City Council Development Plan does not require parking to be provided for developments within the Primary Pedestrian Zone.

3.2 Cyclists

Bike parking for café tenancy

Adelaide City Council requirements require bicycle parking for the café at a rate of 1 per 20 employees plus 1 for each 50 seats in the café. Based on provisions in the proposed development, this equates to 1 bike parking space for café employees and 1 for café customers which will be provided in a publicly accessible area.

Bike parking for residents

Adelaide City Council bicycle parking requirements state for all low, medium and high scale residential development:

- 1 for every dwelling/apartment with a total floor area less than 150 square metres.

- 2 for every dwelling/apartment with a total floor area greater than 150 square metres.
- Visitor bike parking – 1 for every 10 dwellings

By these requirements, the proposed development would require:

- 168 bike parks for residents (all apartments less than 150 square metres)
- 17 bike parks for visitors
- For a total of 185 bike parking spaces.

This requirement is considered excessive due to the location and nature of the development. The Twin Street site is located within close walking distance to the:

- city university campuses
- main public transport routes such as the Grenfell Street and Currie Street bus corridor linking to the o-Bahn and Flinders University and Glenelg Tram
- shopping, food and entertainment amenities.

Given the target audience of tertiary students, variety of transport options and amenity of the site location, we have investigated similar student accommodation in the city centre to assess provision and utilization of bicycle parking in similar developments:

- The Urbanest student accommodation on North Terrace, opposite the main campus of Adelaide University has a bicycle parking provision of 1 per 16.4 beds.
- Urbanest Bank Street is just south of North Terrace, opposite the Adelaide Railway Station and has an observed usage rate of 1 per 22.9 beds.

In a December 2015 submission to the Development Assessment Commission, seeking approval for the Urbanest North Terrace student accommodation, GTA Consultants provided analysis that showed providing bike parking at a rate of 1 per 38.6 beds would be sufficient to meet average demand in high rise student accommodation across Australia.

Secure, on site bike parking

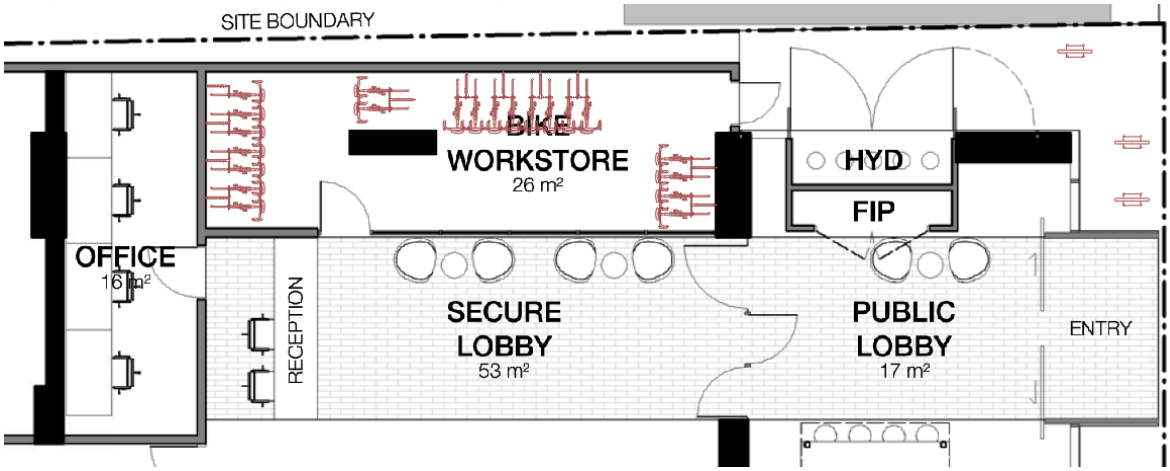


Figure 2: Bike parking - 28 secure spaces in the Bike work store, 4 undercover and two uncovered outdoor spaces on bike rails.

A secure, internal bike store is provided on the northern side of the ground floor with direct access from Twin Street. Figure 2 shows that up to 21 bicycle parking spaces can be provided within this secure storage space. The Bike work store features a glass wall providing passive surveillance from the

Reception and Lobby areas on the ground floor. An additional 6 spaces are to be provided on three bike rails at street level that have passive surveillance available. This brings the total to 27 bicycle spaces, subtracting 2 for café use which equates to a total of 25 available for residents of the building.

This rate of 1 per 20.4 beds exceeds the observed use rate of the Urbanest Bank Street but is marginally lower than the provided rate of the nearby Urbanest North Terrace. However, given the prime location and promenance of the site, it is considered that this rate is appropriate and will cater for expected demand at the site.

Additionally, there are a number off-street car parks in the near vicinity offer affordable secure bike storage.

Figure 3: Indicative vertical bike storage system by Securabike.

3.3 On-Street Parking

The Loading Zone and No Parking restrictions as well as the afterhours unrestricted parking are congruent to the proposed use of the site. There is no proposal from this development to make any changes to on-street parking conditions on Twin Street.

3.4 Service Vehicles

Access for service vehicles including waste collection vehicles is via the right of way laneway on the southern boundary of the site. Figure 4 below shows a vehicle Turnpath for a Medium Rigid Vehicle reversing into the right-of-way lane from Twin Street and a forward exit to Twin Street, southbound. This is overlayed on a survey undertaken of the roadway.

The MRV is clear from building facades and can make the turning movements wholly within the kerb bounds. The reverse in does slightly encroach on the on-street parking to the immediate north of the property access but it is very minor at 100mm and would maintain clearance from a typical vehicle parked. Furthermore, being a loading zone during from 6am-10am and a no parking zone outside of these times, these spaces are unlikely to be occupied and if they are, the reversing vehicle could

undertake an extra step in the movement. For this reason, the movement is considered to be appropriate.

Additionally, it is noted that service vehicles currently undertake this manoeuvre to service the Ibis Hotel.

Figure 4: Turn path analysis for a Medium Rigid Vehicle (waste collection vehicle or large delivery vehicle) for reverse-in, forward-out movements for the right-of-way laneway on the southern boundary of the site

The on-street spaces on Twin Street immediately in front of the site are marked *No Parking 10am – 6pm any day*, to facilitate quick delivery and service vehicle movements in Twin Street. Loading for the café and other deliveries to the site during these times can use these areas as well as the loading zone immediately south of the site. This provides alternate on-street servicing opportunities for the proposed should the right of way be in use at any time.

4. Design Compliance

Bike parking facilities have been designed in accordance with Australian Standard AS2890.3.

Turn path assessments have been conducted in accordance with Australian Standard AS 2890.1.

Assessment has been undertaken in accordance with the Adelaide (City) Development Plan, consolidated 7 June 2018 unless stated otherwise.

5. Summary

In summarising traffic design methodology and outcomes in this report:

- The site at 29 Twin Street is within both the Central Business Policy Area and Primary Pedestrian Area. Twin Street is identified as an Existing Pedestrian Link in the Development Plan.
- No on-site parking is provided, in accordance with the Development Plan which sets a maximum but no minimum requirement for developments in this area.
- A total of 27 spaces are available between the café and residential accommodation equating to a final rate of 1 space per 20.4 beds, equivalent to a number of other nearby student accommodation facilities.
- Bike store access is from Twin Street, down a short lane at the north eastern corner of the site, this lane is visible from within the lounge for passive surveillance. Internal access is also provided from the ground floor Lobby area.
- The bike work store is separated from the Reception and Lobby areas by a glass wall, providing excellent passive surveillance and security.
- Service vehicle access to the right of way lane at the southern boundary of the site is shown for an 8.8m MRV making a reverse entry and forward exit. Site loading and waste storage areas are at the western side of the site, a reverse entry allows for rear loading/unloading directly to this space from the lane.
- There is minimal risk of conflict with other use of the right of way over the property and alternate servicing locations are available on Twin Street should it be occupied.
- The development provides an activated, visually permeable and pedestrian accessible frontage to Twin Street, enhancing the pedestrian amenity and taking advantage of the walkable connections from this site.

Based on these outcomes, the proposal is supported from a traffic and transport perspective.

infraPlan




Waste Management Plan

29 Twin Street, Adelaide

October 2018

Project Name	**IP18.021 Twin Street Student Accommodation**
Client contact details	**Ben Colmer** Project Manager RCP Level 2, French Street ADELAIDE SA 5000 p: 08 8205 7000 bcolmer@rcp.net.au
Consultant contact details	**Erik Stopp** Senior Transport Engineer InfraPlan (Aust) Pty Ltd Level 3, 66 Wyatt Street Adelaide SA 5000 p: 08 8227 0372 erik@infraplan.com.au

Document Control					
Name:	**IP18.021 Twin Street - Waste Management Plan**				
Version	**Notes**	**Author**	**Date**	**Reviewer**	**Date**
1	Draft issue	JE	13.07.2018	ES	25.07.2018
2	Updated based on comments	ES	02.08.2018		
3	Updated turn movement	ES	08.10.2018		

Table of Contents

1. Development Details

InfraPlan has been engaged by RCP to prepare a waste management plan for its proposed student accommodation development with ground floor café in Twin Street, Adelaide.

1.1. Development Details

A total of 168 dwelling units are proposed in a 36-story building.

Development details considered for preparing this report are provided below:

Land Use: Residential student accommodation

Site Area: 435 m^2 (approx.)

No. of Dwellings: 168

Dwelling Density: >1,000 dwellings per ha

Type	Units	Bedrooms
1 bedroom studios	60	60
Twin share apartments	42	84
5 bedroom apartments	30	150
6 bedroom apartments	36	216
Totals	**168**	**510**

Commercial	Area (m^2)
Café	46

The proposed mixed-use development, with a dwelling density greater than 1,000 dwellings per hectare is considered as a *high density residential development*.

The development proposal includes vehicular access from Grenfell Street via Twin Street at the south-eastern corner of the property. Pedestrian access would be provided from Twin Street on the east.

The waste storage area is on the western side of building at the ground level, with a waste room to the west of the lift core on the ground level, at the termination of the waste collection chutes for general and recyclable waste streams. All green organic waste bins will be kept in the outdoor space on the western side of the site. The café workers will have access to bins in the outdoor storage space and bins will be shared between the two land uses. Waste collection vehicles will load at street level in the driveway space on the southern side of the development site.

Figure 1 Location map – proposed mixed-use development

2. Type of Waste System

For the purpose of developing a waste management plan InfraPlan have referred to the "*Better Practice Guide Waste Management for Residential and Mixed Use Developments*" published by Zero Waste SA (ZWSA) in 2014.

The proposed development will be a high-density development (10 or more dwellings). Using ZWSA guidelines a **Complex Waste Management System** is recommended for the proposed development.

To further promote tenant awareness of recyclable waste streams, the developer will access at-source waste sorting bins provided free of charge by the Adelaide City Council to facilitate the use of disposal chutes for pre-sorted waste. InfraPlan has been advised that the *Murphy* recyclable waste caddy, designed to be stored under a kitchen sink, and a bench-top green organics kitchen caddy with corn starch liner bags can be provided free of charge to each residential apartment.

3. Waste System Sizing

3.1 Bin sizes

The following waste bins, as per the Adelaide City Council standard arrangements, have been proposed for use at the subject development.

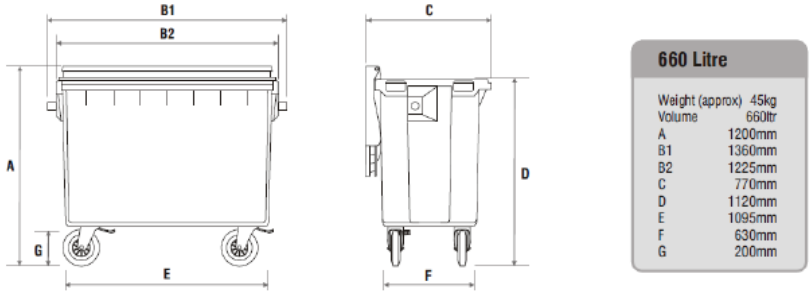
Capacity	Dimensions	
1,100 Litres	1,360 L x 1,090 W x 1,390 H	
660 Litres	1,360 L x 770 W x 1,200 H	
		 General Waste Co-mingled Recyclables Food/Organics

Table 1 Waste bin sizes

3.2 Projected Waste Generation and Storage provision

Ready to use *Waste Resource Generation Rates (WRGRs) by land use type* provided in Table C.2 of ZWSA guide were used to estimate waste generation from the proposed development.

The projected waste generation volumes from the proposed development are presented in Table 2 below.

Table 2 Waste generation: Residential

WASTE STREAM (weekly collection)	ZWSA Waste Generation Rates [L/bedroom/week]	No of Bedrooms	Projected Weekly Waste Generation
Non-recyclable waste to landfill	30	**510**	**15,300 L**
Co-mingled recycling	25	**510**	**12,750 L**
Organic [food] waste	10	**510**	**5,100 L**

It is recommended that waste collection take place three times a week for all three waste streams be provided for residential waste.

Table 3 Waste generation: Commercial – Café Tenancy

The Café tenancy has a floorspace of 46m^2 on the south-eastern corner of the ground floor, including a small area of outdoor seating on the eastern side.

WASTE STREAM (weekly collection)	ZWSA Waste Generation Rates [L/10m^2/day]	Projected Weekly Waste Generation for Café Tenancy = 46m^2
Non-recyclable waste to landfill	30	**966 L**
Co-mingled recycling	20	**644 L**
Organic [food] waste	40	**1,288 L**

Table 4 Waste storage provision – combined residential and commercial tenancy

WASTE STREAM (three times a week collection)	Total Waste Storage required for three times a week collection	Number and size of bins provided	Total waste storage capacity provided
Non-recyclable waste to landfill	**5,422 L**	**5 x 1100 L**	**5,500 L**
Co-mingled recyclable waste	**4,465 L**	**3 x 1,100 L 2x 660L**	**4,620 L**
Organic [food] waste	**2,129 L**	**4 x 660 L**	**2,640 L**

Given the proportionally small amount of waste generated by the café tenancy, it is proposed that both land uses share bins and thus have access to the common area. Residents will use a waste chute for both general and recyclable waste streams while green organics waste will need to be deposited by hand into he green organics bins at the western side of the property. This is a sub-optimal arrangement and is likely to result in most organic waste being disposed of in general waste bins. Alternative solutions including collection bins on each floor may be considered to increase the volume of organic waste being disposed of in the designated bins for collection.

The waste storage area for combined residential and commercial tenancies are shown in Figure 2. A Facilities Manager will be responsible for monitoring the waste storage capacity. The bin storage area has capacity to accommodate additional bins if necessary.

3.3 Hard Waste and e-waste

As per the ZWSA guide, a total 129.4 m^3 (168 apartments x 0.77 m^3/households/year) would be required to store annual hard waste and e-waste for the proposed development. It is understood that the City of Adelaide offers free, at-call hard waste collection service to residents. Considering that up to 12 at-call services (1 per month) can be availed by residents of the proposed development, a total of 9.4 m^3 is required to store hard waste generated by the proposed development.

A 5.4m^2 area (approx.) is proposed within the storage area at the western side of the site for storing hard and e-waste. The proposed storage area allows for stacking of hard/e-waste to a height of 1.8m. Thus, a total up to 9.4m^3 of space will be available to store hard and e-waste within the waste storage area. Waste storage areas, including hard and e-waste storage are shown in Figure 2.

On site storage and on-demand council collection would minimise and possibly eliminate unwanted furniture, bulk waste and e-waste items ending up on the kerbs. A Facilities Manager may be

required to assist residents to transport items from residences to the storage area in the basement and to present items at the collection point at street level.

While this space can be accommodated in the rear storage area, the nature of the development being student accommodation is likely to mean significantly less hard waste than the guidelines suggest.

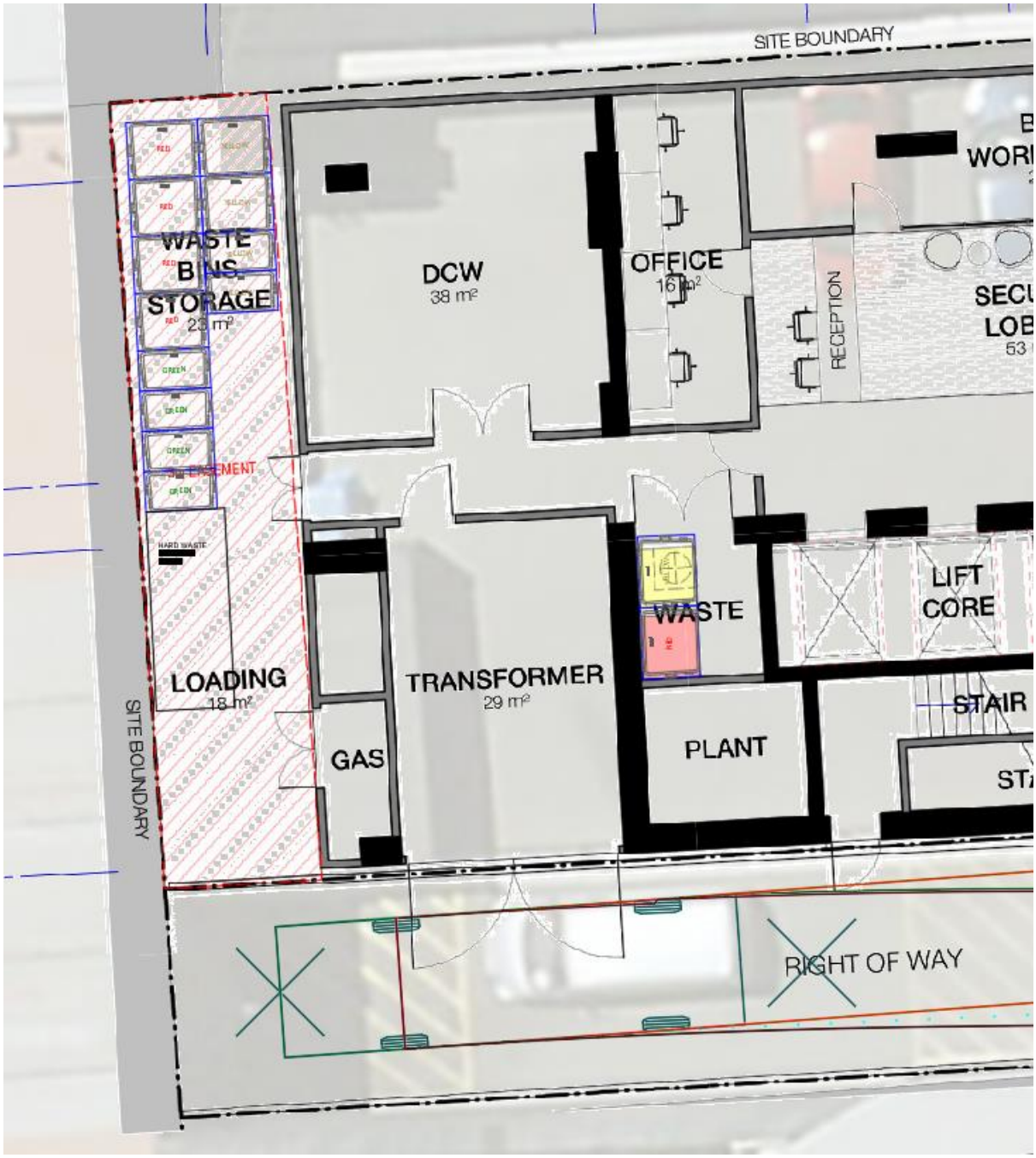


Figure 2 Ground floor plan showing bin storage and presentation area

4. Bin Storage Location

The residential bin storage area is located on western side of the site, with interior corridor access to the residential bin chute location. When bins under the chutes are full, the facilities manager will move bins between them. Both areas are lockable and will be provided with adequate ventilation.

The corridor between the storage area and chute room will have a concrete floor to facilitate easy manoeuvring of bins. A hose and sink are provided in the outdoor storage space for bin cleaning. Drainage in the outdoor space will be provided.

5. Bin Chute system

The proposed residential development will have an integrated waste chute system. A single chute will be required, with a control system and waste splitter located at the ground floor. Access to the waste chutes is proposed via wall hatches to the west of the lifts on each floor. Organic (green) waste is not included in the chute system.

Key principles of the diverter system are listed below:

- Resident selects type of waste being deposited
- Waste chute door unlocks, user opens hatch and waste is placed in the chute
- Waste is deposited in selected bin in the ground level bin storage area
- The Facilities Manager will be required to assist residents to take large items, hard and e-waste to the waste storage area on the ground floor.

The proposed system will require initial monitoring to determine the frequency for replacing filled bins with empty bins under the chute. Weight sensors can be employed to alert the Facilities Manager to the need to rotate bins. The current arrangement of bins and chutes in the basement would preclude use of automated rotation systems.

It is recommended that an internal collection system be employed for green waste to discourage disposal of green waste in the general waste stream.

6. Bin Presentation and collection

6.1 Bin Presentation Area

A private contractor will be engaged to collect waste generated from the proposed development for both residential and café tenancies.

A medium sized (8.8m) vehicle operated by a private contractor will be able to enter the shared access driveway on the southern side of the site in a reverse direction, collect waste and exit to Twin Street in a forward direction. Refer to AutoTrack turn paths included in Appendix A for vehicle access paths.

A Facilities Manager or the driver / attendant of the waste collection truck will be required to manoeuvre bins from the storage areas at the western end of the site to the end of the driveway for collection. A flat surface is to be provided for ease of movement, to prolong the life of the bins and reduce noise associated with bin movement.

6.2 Collection Times

It is recommended that waste collection should be done outside peak periods (7-9am, 3-6pm) to minimise impacts to Grenfell and Twin Street traffic.

A private waste collection contractor will be engaged to collect & dispose of all co-mingled recycling, non-recyclable and organic food waste generated on site.

7. Waste Collection Frequency and Method

7.1 Residential Waste

A private waste operator will be engaged to collect all waste streams: co-mingled recyclable, non-recyclable general waste and organic waste from the proposed development. This Waste Management Plan has been developed on the basis that all three waste streams from the residential tenancies are collected three times a week. On the day of collection, the private waste operator will wheel out filled bins for collection and wheel empty bins back in the bin storage area.

7.2 Café Tenancy

Waste generated by the café is proportionally small when compared to the residential waste generation and as such the two land uses will share the same bins.

7.3 Hard waste and e-waste

ACC offers up to 12 free services to collect hard and e-waste from large residential developments. Residents/tenants of the proposed development can avail this free service by storing waste in the hard/e-waste storage area in the basement. A Facilities Manager or waste room attendant will be able to arrange collection through Council as required.

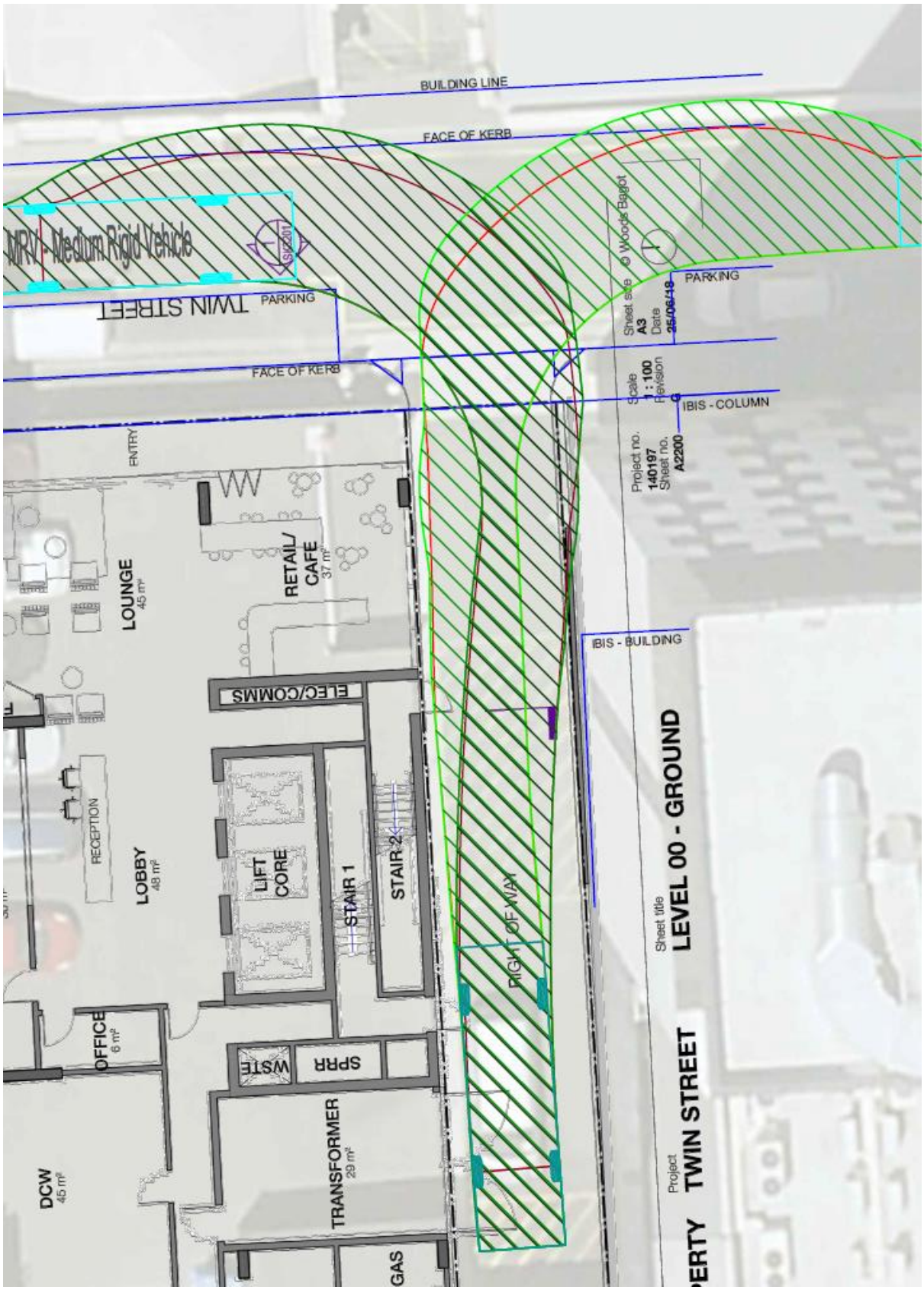
8. Conclusions

Based on the calculations and methodology presented in this report in relation to waste generation and collection at the proposed mixed-use, commercial and high density residential development at 29 Twin Street, Adelaide the following can be concluded:

- Waste generation for the proposed residential and retail development was estimated using Zero Waste SA (ZWSA) guidelines.
- Using ZWSA guide, a Complex Waste Management System is recommended for the proposed high density mixed-use development.
- A private waste collection operator will be engaged to collect waste generated from the proposed development.
- All waste is proposed to be collected three times weekly.
- Sufficient waste storage capacity for each of the three waste streams has been provisioned on-site to meet estimated waste generation demand.
- Sufficient hard waste and e-waste storage area is provisioned within the bin storage area.
- Residents and Facilities Management will be able to access up to 12 per year, free, at call hard waste and e-waste collections offered by ACC.
- The bin storage area will be located at the northern side of the development site with pedestrian access from the lobby via stairs or via the driveway / shared space.
- A shared bin cleaning facility is provided in the basement and drainage provided. Management will need to ensure that when bins are cleaned, excess water is removed from the floor to minimise the risk of injury due to standing water and slippery floors.
- A Facilities Manager or community attendant will be required to periodically monitor bin capacity under bin chutes and replace filled bins with empty bins. Weight sensors can be installed to provide alerts to the management.
- The attendant will also be responsible for upkeep of the bin storage area.
- Medium (8.8m) waste collection vehicles will be able to access the driveway / shared space at the southern side of the development by reversing from Twin Street and then utilising a forward out movement.
- It is recommended that bin collection times be strictly adhered to by the operator to minimise impacts to residents and surrounding businesses.

The proposed number of bins are deemed sufficient for the proposed development, applying the recommended collection frequency by private operators and council.

9. Appendix A


BUILDING LINE
FACE OF KERB
MRV - Medium Rigid Vehicle
TWIN STREET
PARKING
FACE OF KERB
PARKING
IBIS - COLUMN
IBIS - BUILDING
ENTRY
LOUNGE
45 m²
RETAIL/
CAFE
37 m²
ELEC/COMMS
RECEPTION
LOBBY
48 m²
LIFT
CORE
STAIR 1
STAIR 2
OFFICE
6 m²
WSTE
SPRR
TRANSFORMER
29 m²
DCW
45 m²
GAS
RIGHT OF WAY
Sheet title
LEVEL 00 - GROUND
Project
TWIN STREET
Project no.
140197
Sheet no.
A2200
Scale
1 : 100
Revision
G
Sheet size
A3
Date
25/06/18
© Woods Bagot

LUCID CONSULTING AUSTRALIA

STUDENT ACCOMODATION DEVELOPMENT

27-29 TWIN STREET, ADELAIDE

Document No: LCE15129-007

Sustainability Report

July 2018

1 INTRODUCTION

1.1 PROJECT OVERVIEW

The proposed student accommodation building at 27-29 Twin Street (Adelaide) is a Class 3 building under the National Construction Code which comprises:

- Ground Floor: Entry lobby, retail / café and back of house plant
- Mezzanine 01: Services plant
- Mezzanine 02: Common areas
- Level 1 to Level 16: Student accommodation rooms
- Level 17: Mid-level services plant and laundry
- Level 18 to Level 34: Student accommodation rooms
- Level 35/Roof: Gym, yoga studio and common areas
- A total of approximately 500 beds.

The following figure shows the site's location.

Figure 1.1.1: Site plan showing location of proposed building (Source: Google Maps)

1.2 OBJECTIVES

This report outlines the sustainability initiatives proposed for the development.

The intent of each initiative is to add value to the project by improving the building's environmental performance.

Collectively, these initiatives will:

- Reduce energy and water consumption.
- Reduce the ecological footprint of the building and its occupants.
- Improve thermal comfort and air quality within the building.
- Improve occupant well-being.

1.3 SUMMARY OF PROPOSED SUSTAINABILITY INITIATIVES

The following initiatives have been adopted and incorporated into the design of the building to satisfy the above objectives:

- High performance building envelope: wall, floor and roof insulation R-values to meet / exceed best practice guidelines.
- High performance glazing with solar control to mitigate solar heat gains in summer.
- Use of architectural facade feature elements to shade glazing.
- Energy efficient massing with minimal exposed ceilings and floors (Levels 1 to Level 35 / Roof have the same boundaries)
- LED lighting throughout.
- Motion sensors for efficient lighting control within common areas.
- Water efficient fittings.
- Secure bicycle storage.
- Low volatile organic compound (VOC) paints
- Provided amenities to provide high quality of living environment (gym and yoga studios)

2 SUSTAINABILITY INITIATIVES

2.1 EFFICIENT BUILDING THERMAL ENVELOPE

An efficient building envelope is a highly robust feature as its benefits will be constant throughout the life of the building and are largely independent of the behaviour of the occupants. The performance of wall, floor and ceiling/roof insulation will meet best practice guidelines.

High performance glazing

The project team's intent is to exceed the NCC minimum requirements to reduce cooling and heating loads, reduce operational costs and increase thermal comfort.

High performance glazing will be installed throughout and will either be low-e single glazing or low-e double glazing. The benefits of double glazing over single glazing will be quantified during the detailed design phase, which will assist in selecting the most suitable glazing for this development.

Energy efficient massing

The boundaries of the conditioned spaces between Level 1 to 16 and Level 18 to 34 are identical, which minimises the area of floors and ceilings exposed to outside air and therefore improves the thermal performance of the building.

All surfaces exposed to outside air such as the Level 1 slab on the western side of the building will be provided with insulation.

2.2 PROVISION OF SHADING

Architectural feature elements have been designed for the facades of this building as shown below. The elements will act as horizontal and vertical projections, which will provide significant shading to the glazing.

Figure 2.2.1: Architectural feature elements on the northern and eastern facade

This shading strategy and the use of high performance low-e glazing will significantly reduce solar gains and cooling loads in summer and provide high levels of thermal insulation, when compared with NCC deemed-to-satisfy glazing, to reduce heating loads in winter.

2.3 ENERGY EFFICIENT LIGHTING

High efficiency LED lighting is proposed throughout.

A master shutdown switch will be provided in each unit, which will enable the students to turn off all lighting upon departure.

Lighting in common area will be controlled automatically to ensure lighting only operates when required. Motion sensors, push button timers and time schedules will be used for lighting control.

2.4 WATER EFFICIENCY

Water efficient taps and fixtures will be selected for this development. The following WELS ratings are proposed:-

- Taps with a WELS rating of not less than 5 Stars (6.0 L/min)
- Shower heads with a WELS rating of not less than 3 Stars (7.0 L/min)
- Water closets with a WELS rating of not less than 4 Stars (3.5 L/flush, dual flush)

The following table demonstrates the water savings (approx. 50%) expected to be achieved per person and resulting from the use of the above low-flow fittings.

Equipment	Average unit		27-29 Twin Street		
	Flow Rate	Daily Consumption	WELS	Flow Rate	Daily Consumption
Taps	9.0 L/min	48 L	5 Star	6.0 L/min	32 L
WC's	8.0 L/flush	48 L	4 Star	3.5 L/flush	21 L
Showers	15.0 L/min	135 L	3 Star	7.0 L/min	63 L
Total	-	231 L	-	-	116 L

2.5 DAYLIGHT

Provision of daylight to each unit will exceed the NCC minimum requirement. Higher daylight levels will improve visual comfort and reduce energy usage for lighting.

2.6 BICYCLE STORAGE

Bicycle storage is proposed within ground level for the building occupants in a secure room as shown below. This encourages building occupants to utilise carbon-free means of transport.

Figure 2.6.1: Extract from floor plans showing the bicycle storage room on ground floor.

2.7 ENERGY EFFICIENT MECHANICAL PLANT

To further reduce operational costs and carbon emissions, the following initiatives are currently being investigated and will be developed during the detailed design phase:

- High Efficiency, variable refrigerant (VR), heat recovery type reverse cycle mechanical equipment

A high efficiency, VR, heat recovery type air conditioning system is being proposed, providing best-practice energy efficiency mechanical equipment, exceeding 2016 NCC minimum energy performance standards (MEPS). A life cycle analysis will be completed to compare water cooled VR systems and air-cooled VR systems.

Water cooled VR systems have three main benefits being:

- More energy efficient than air cooled VR plant
- Lower refrigerant charge for lower global warming potential (GWP)
- Longer lifetime (20+ years)

Figure 2.7.1: Air cooled VR system

Figure 2.7.2: Water cooled VR system

LUCID
CONSULTING AUSTRALIA

STUDENT ACCOMODATION DEVELOPMENT

27-29 TWIN STREET, ADELAIDE

Document No: LCE15129-008

Services Report

July 2018

1 INTRODUCTION

1.1 PROJECT OVERVIEW

The proposed student accommodation building at 27-29 Twin Street (Adelaide) is a Class 3 building under the National Construction Code which comprises:

- Ground Floor: Entry lobby, retail / café and back of house plant
- Mezzanine 01: Services plant
- Mezzanine 02: Common areas
- Level 1 to Level 16: Student accommodation rooms
- Level 17: Mid-level services plant and laundry
- Level 18 to Level 34: Student accommodation rooms
- Level 35/Roof: Gym, yoga studio and common areas
- A total of approximately 500 beds.

The following figure shows the site's location.

Figure 1.1.1: Site plan showing location of proposed building (Source: Google Maps)

1.2 OBJECTIVES

This report outlines the building services proposed for the development and demonstrates the spatial allocations provided to accommodate each service as part of design coordination undertaken during the pre-lodgement planning phase.

The services considered within this report include:

- Electrical and Communication Services
- Fire Services
- Hydraulic Services including:
  - Sewer
  - Water
  - Gas
- Mechanical Services
- Vertical Transportation Services

2 BUILDING SERVICES

2.1 ELECTRICAL AND COMMUNICATIONS SERVICES

Electrical Infrastructure

The site will be serviced by a new 750kVA transformer located on the development fronting onto the existing right of way (ROW) between the proposed development and the IBIS hotel.

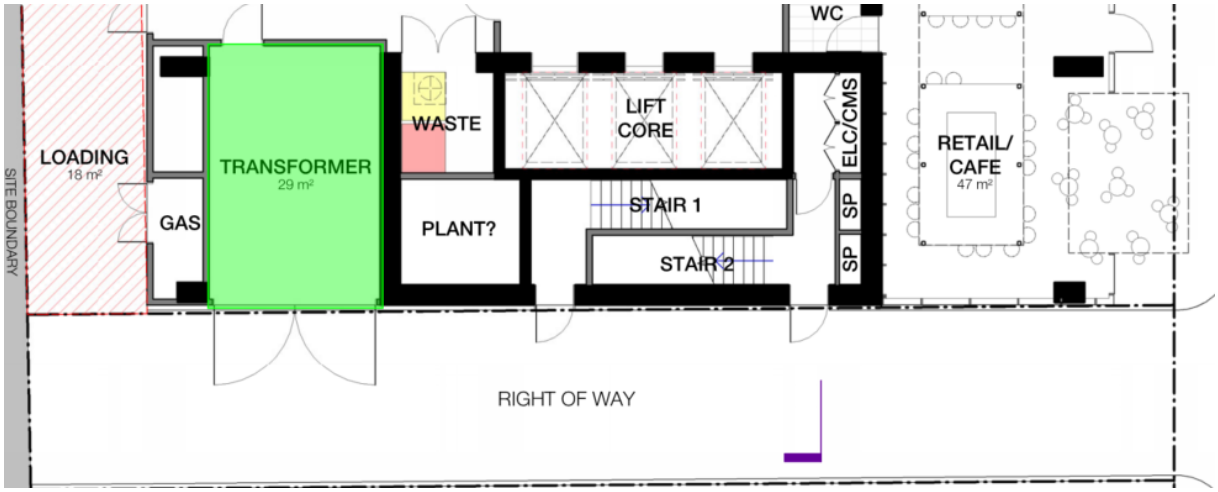


Figure 2.1.1: Proposed SAPN Transformer Arrangement

The Main Switchboard room will be located on Mezzanine 1, directed adjacent to the proposed transformer.

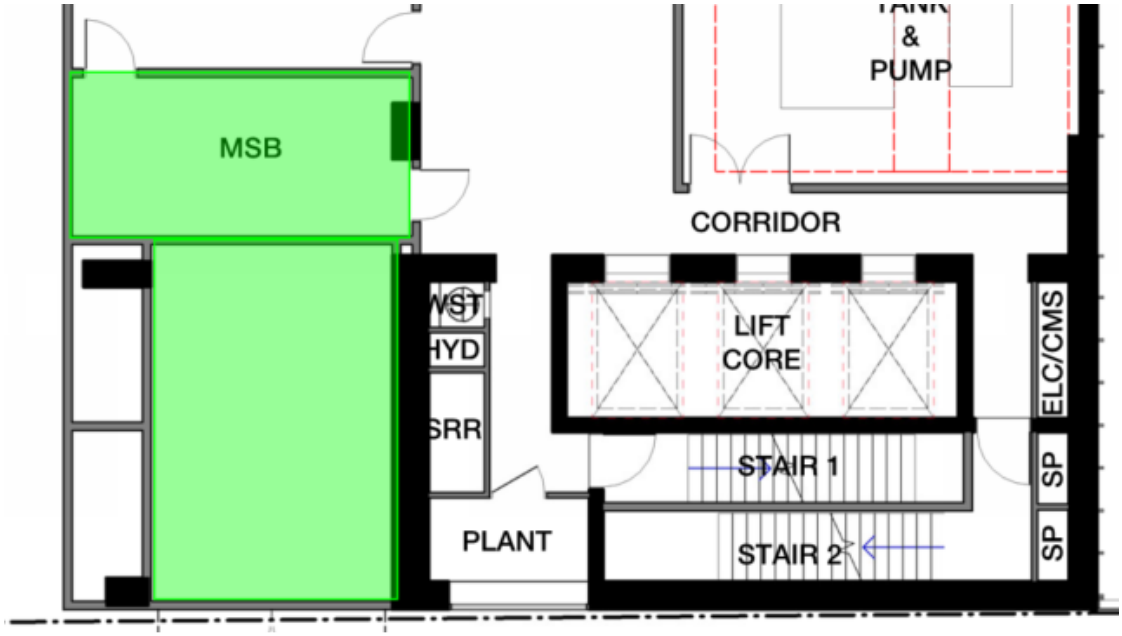


Figure 2.1.2: Proposed Main Switchboard Location

Communications Infrastructure

The building communications room is to be located within the Mezzanine 1 plant level as seen in Figure 2.1.3. This room will contain carrier services connections and main information technology equipment.

Within the main core is a dedicated electrical and communications riser for the reticulation of electrical and communications services throughout the building and for the installation of floor distribution boards (as required).

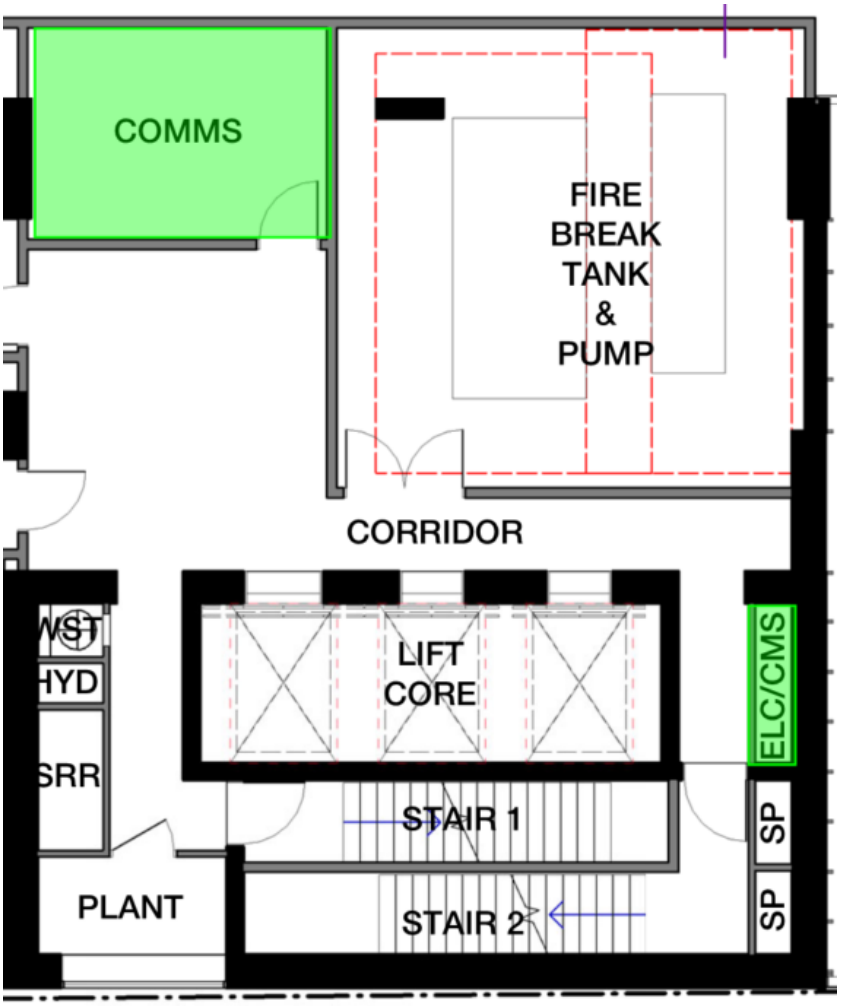


Figure 2.1.3 Communications Room and Electrical Riser location

2.2 FIRE SERVICES

It is proposed to serve the site with a DN150 fire connection from the existing DN150 SA Water main within Twin Street. It is noted that the existing SA Water main within Twin Street will need to be upgraded to DN200 as part of this project. A fire water storage tank and pumps will be located within the mid-level plant room on the 17th floor of the building.

The site will incorporate the following:

- An SAMFS booster located on Twin Street, recessed into an external wall facing north with 24/7 access for the SAMFS. The booster will include a 180° hinged door to ensure suitable access for flexible hose connections to Twin Street. The booster location has been coordinated with the SAMFS to ensure the location did not impact on egress from the building during a fire event.

- Fire detection control and indicating equipment (FDCIE) and master evacuation control panel (MECP) is located within the building lobby, adjacent the fire hydrant booster location with 24/7 access for the SAMFS.

- A fire services plant room located within the Level 17 mid-level plant will incorporate a combined hydrant/sprinkler storage tank, duty and standby fire pumps and fire brigade relay pump. Due to the large floor height of Level 17 (>5000mm), the pumpsets will be arranged in a stacked arrangement to minimise impact to the Level 17 foot print and maximise sizing of the Laundro-Lounge.

- A fire services break tank and transfer pump set will be located within Mezzanine 1 to assist in filling the fire storage tank.

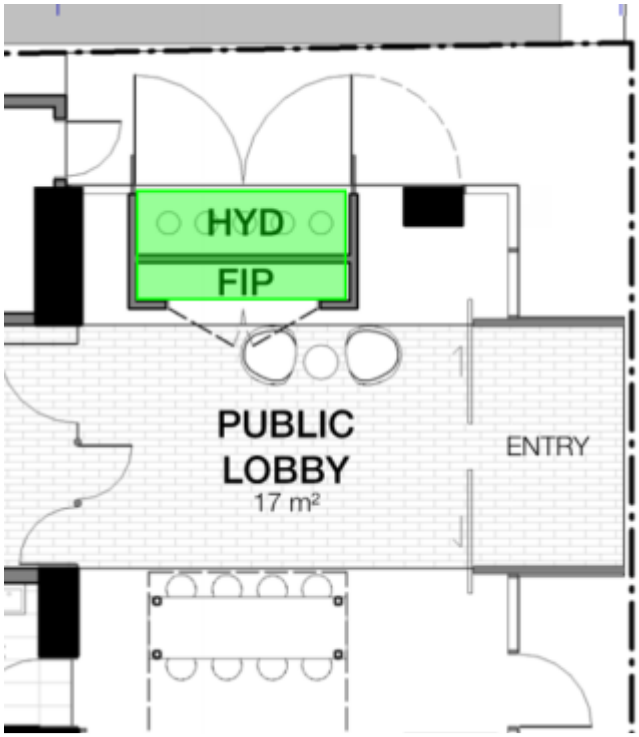


Figure 2.2.1: Fire Services Infrastructure at Ground Level

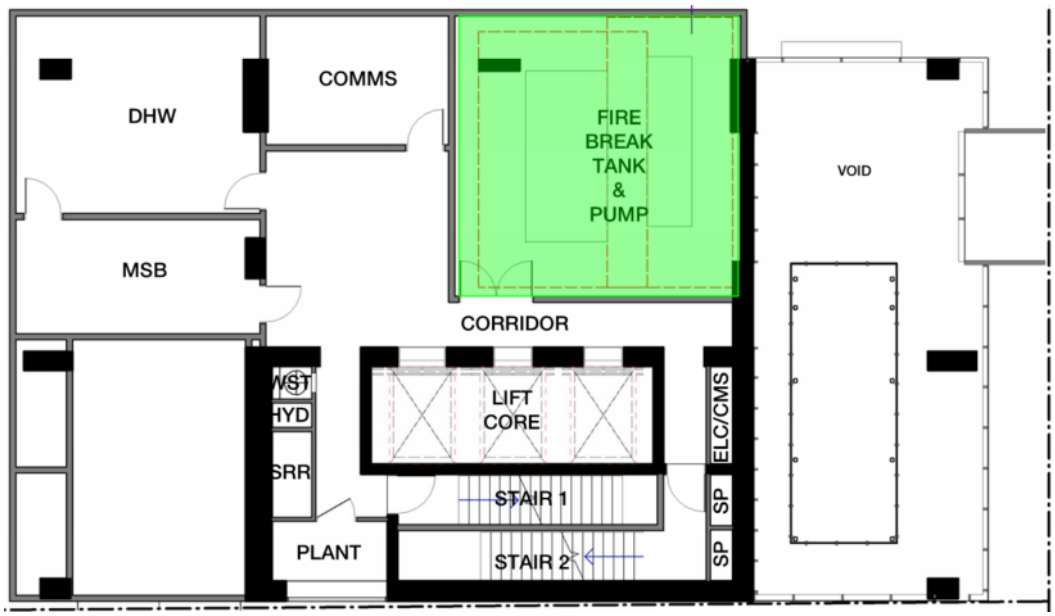


Figure 2.2.2: Fire Services Infrastructure within Mezzanine 1

Figure 2.2.3: Fire Services Infrastructure within Level 17 Plant Room

2.3 HYDRAULIC SERVICES

Sewer Infrastructure

It is proposed to service the development by upgrading the existing DN150 sewer connection located within Twin Street to a size of DN225 discharging into the DN300 SA Water Sewer main in North Terrace. Two (2) new DN150 connections are proposed to service the development.

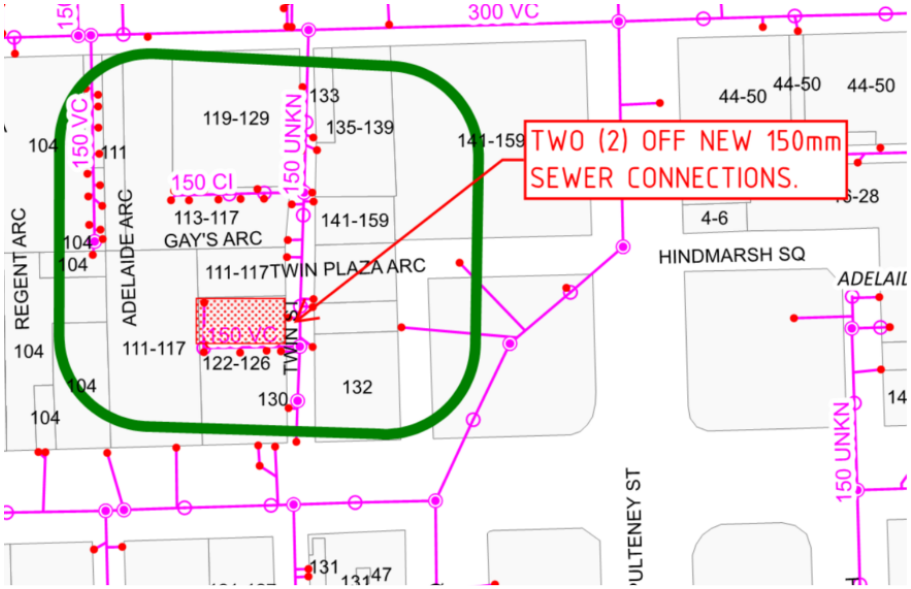


Figure 2.3.1: Proposed SA Water Sewer Connections

Domestic Cold and Hot Water Infrastructure

Two (2) off 50mm water meters, located within a below ground cast iron box are proposed to serve the site via the DN150 SA Water main located within Twin Street. It is noted that the existing DN150 SA Water main within Twin Street will need to be upgraded to DN200 as part of this project.

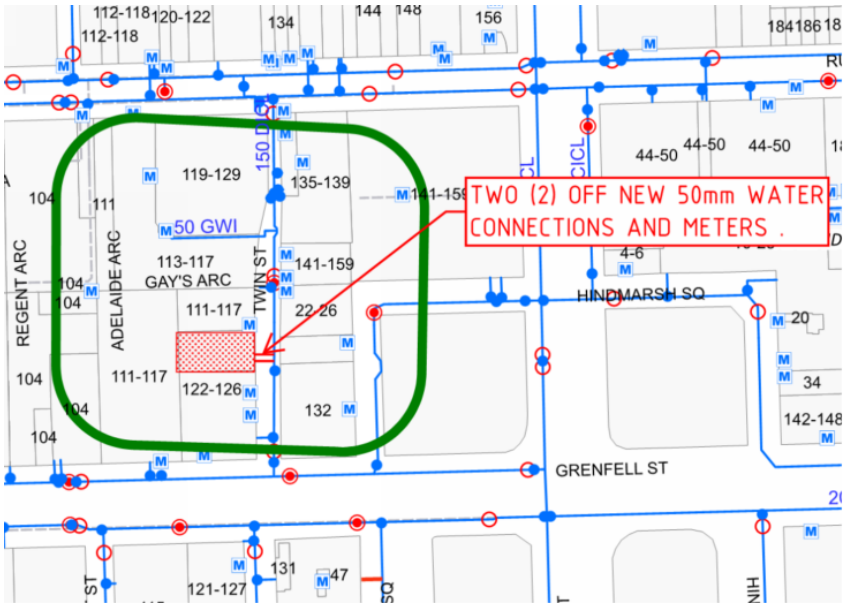


Figure 2.3.2: SA Water Mains Located in Twin Street

The two off 50mm incoming mains shall supply high and low pressure zones for domestic cold water and hot water plant.

The low pressure domestic cold water plant is located within Ground Level as seen in Figure 2.3.3.

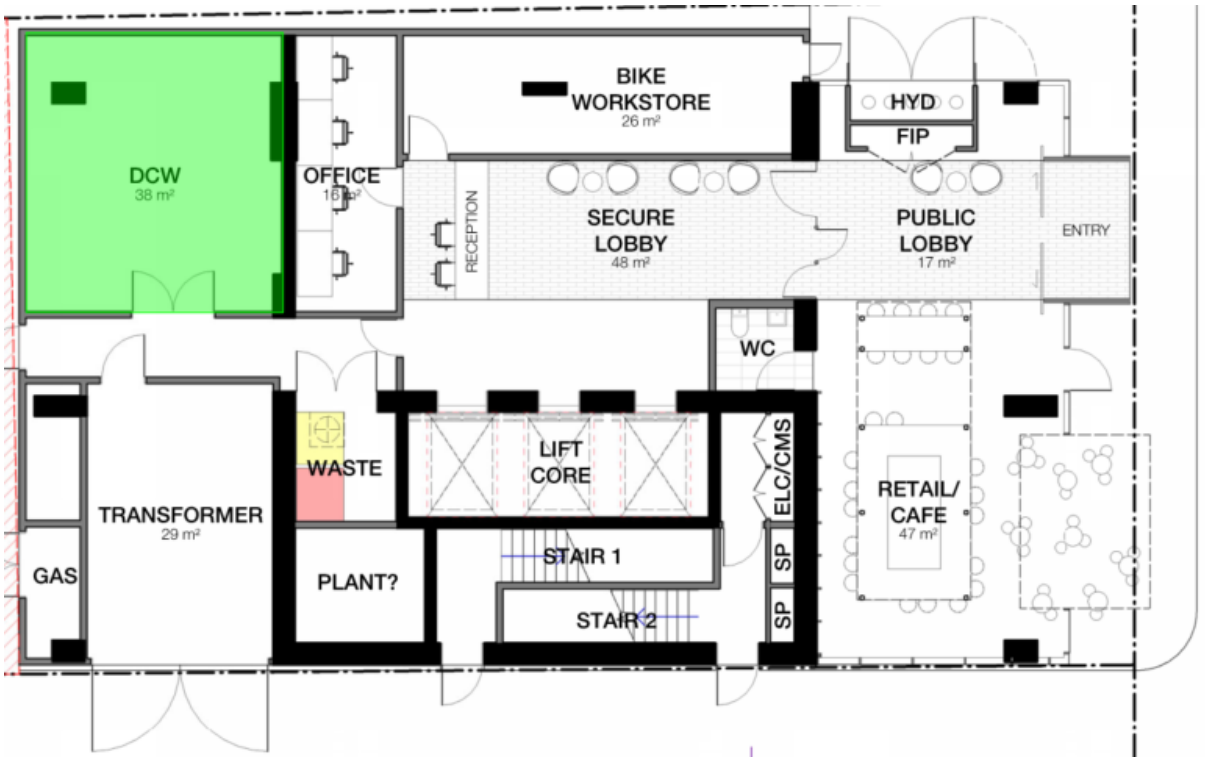


Figure 2.3.3: Ground Floor Low Pressure Domestic Cold Water Plant Room

The low pressure domestic hot water plant is located within Mezzanine 1 as seen in Figure 2.3.4.

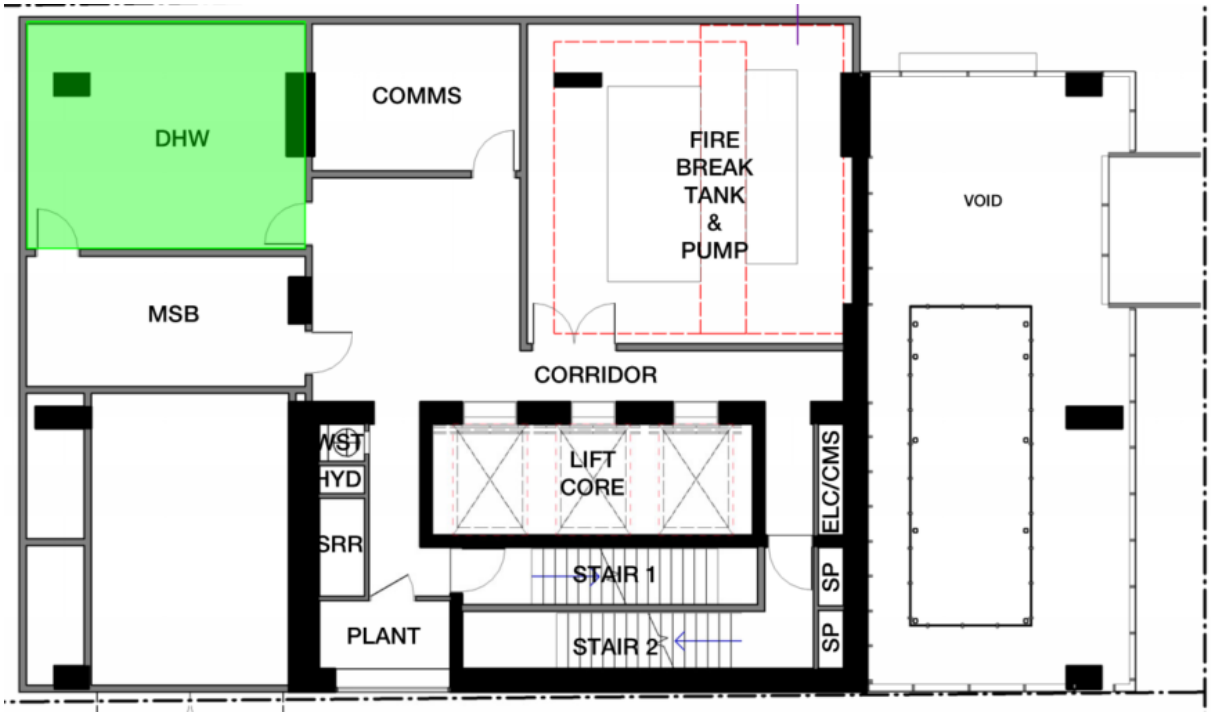


Figure 2.3.4: Mezzanine 1 Low Pressure Domestic Hot Water Plant Room

The high pressure domestic hot and cold water plant is located within the Level 17 mid-level plant room as seen in Figure 2.3.5. Similar to the Fire Services plant, the services within this plant room will be stacked with the use of a mezzanine deck to optimise the use of space within the large floor height of Level 17.

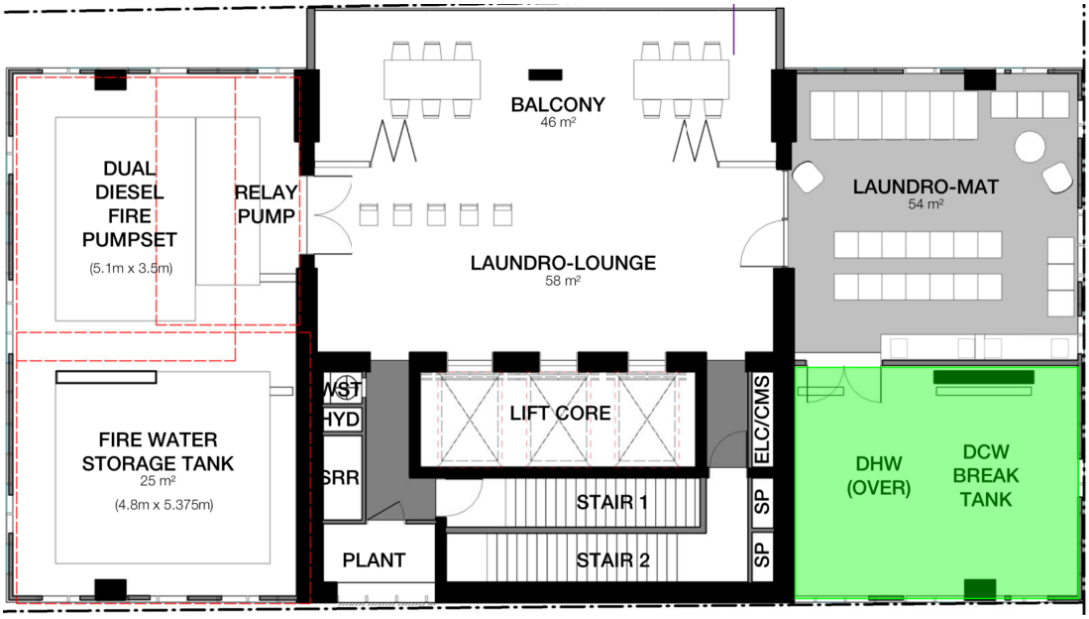


Figure 2.3.5: Level 17 High Pressure Domestic Hot and Cold Water Plant Room

Gas Infrastructure

It is proposed to service the development via a new natural gas connection off APA Group high pressure natural gas main in Twin Street as shown in Figure 2.3.6.

The development will incorporate one off (1) natural gas meter. The gas meter will be located within a ventilated gas meter enclosure opening into the western elevation of the building with access via the right of way (ROW) adjoining Twin Street. The loading dock will be permanently open for 24/7 access and ventilation will be provided via full height louvred doors. Building gas sub-meters shall be provided for each hot water plant pending final arrangement.

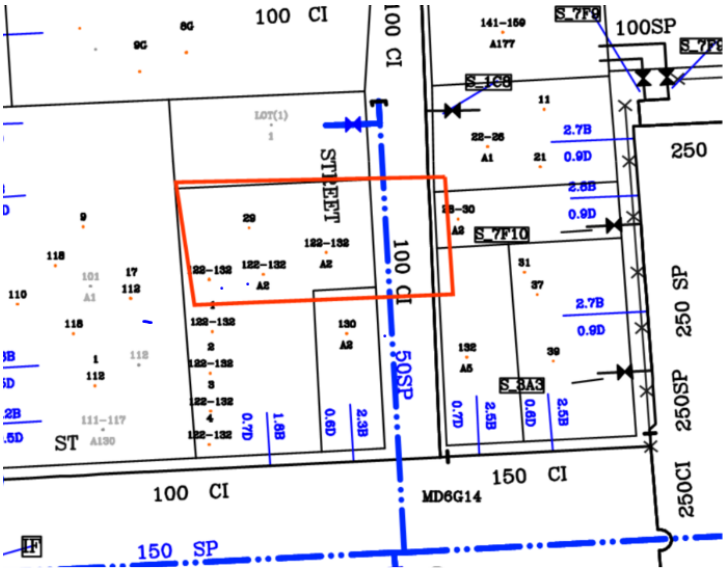


Figure 2.3.6: APA Gas Meter Connection

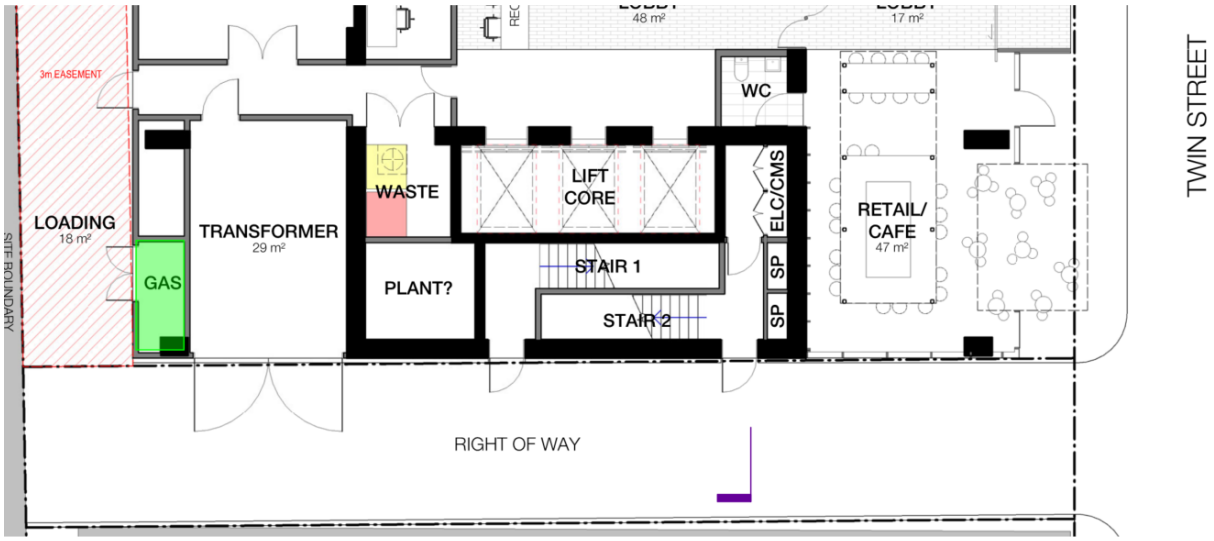


Figure 2.3.7: APA Gas Meter Enclosure

2.4 MECHANICAL SERVICES

Mechanical air conditioning plant is proposed to be served on a floor-by-floor basis. A plant room is provide on each floor for the installation of air conditioning condensing units (air-cooled or water-cooled) to provide air conditioning to bedrooms and common areas.

Two (2) off stair pressurisation risers are provided within the fire stairs and the main core includes a dedicated stair pressurisation relief riser to roof level for relief of the stair pressurisation system.

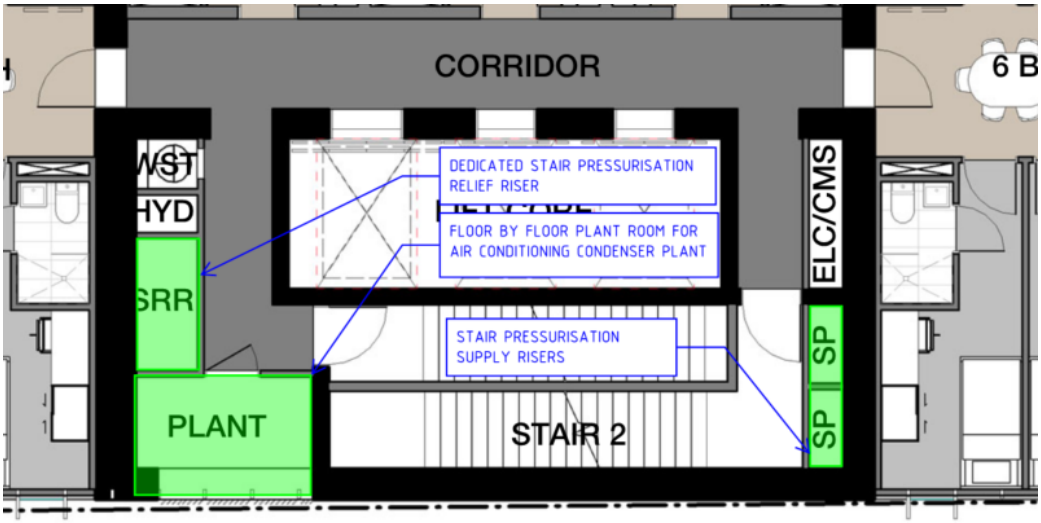


Figure 2.4.1: Mechanical Services Plant provisions

During detailed design the final arrangement of the mechanical services will be assessed from a lifecycle perspective to confirm whether the floor-by-floor air conditioning condensing unit plant is to be air-cooled or water-cooled. If a water-cooled solution is pursued this would incorporate a condenser water plant located on roof level. This will be incorporated into a screened enclosure above roof level.

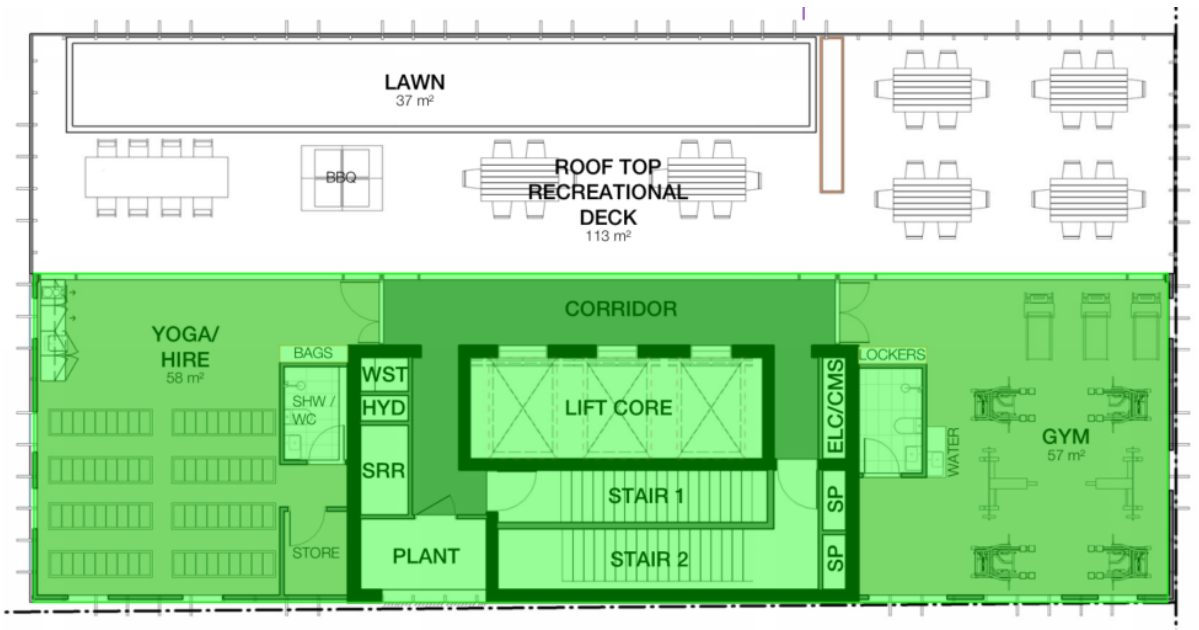


Figure 2.4.2: Extent of possible screened roof plant for water-cooled solution (above Level 35)

2.5 VERTICAL TRANSPORTATION SERVICES

Vertical Transportation services have been assessed for this development from a traffic perspective with an optimised solution of three (3) machine room-less lifts being provided at a speed of 2.5 m/s.

Lift shaft sizing including pits and overruns have been incorporated to accommodate lifts of this size and speed.

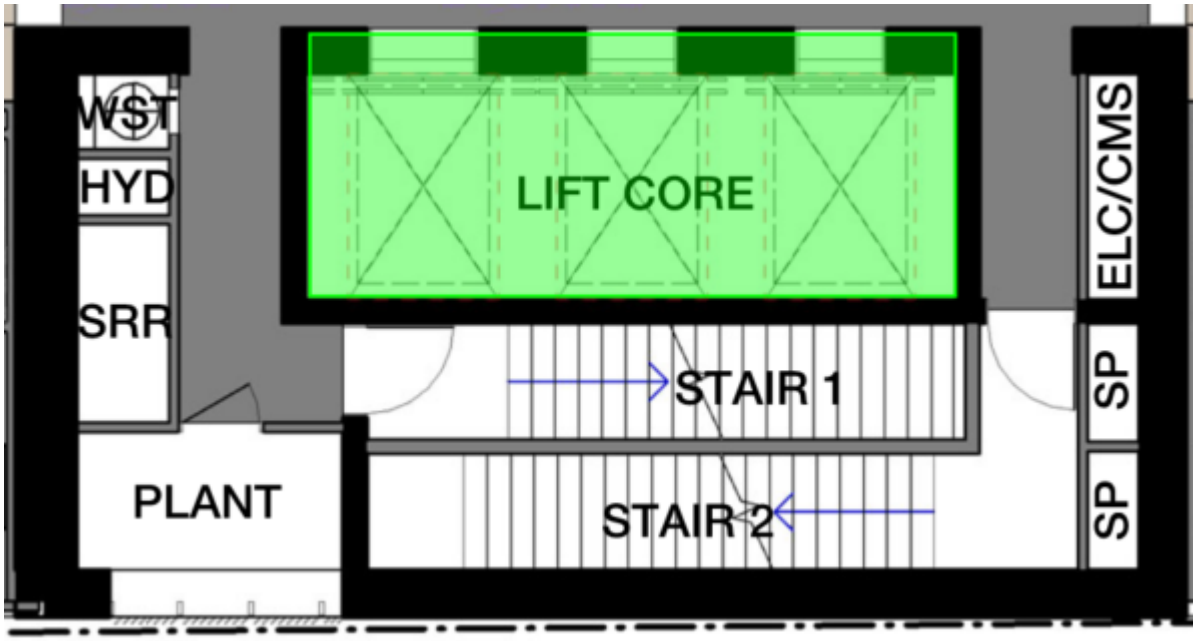
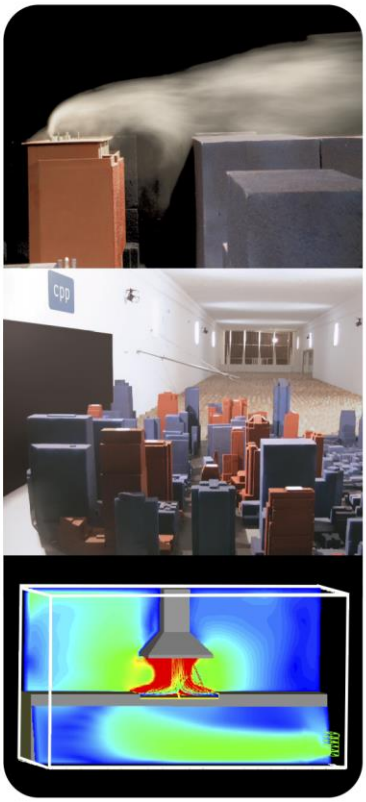


Figure 2.5.1: Lift shaft servicing the Twin Street Development

CERMAK
PETERKA
PETERSEN

WIND ENGINEERING AND AIR QUALITY CONSULTANTS

Draft Report



Qualitative Wind Assessment for:

Twin Street

Adelaide, SA 5000, Australia

Prepared for:

RCP

c/o Robert Bird Group Pty Ltd

Level 5, 500 Collins St

Melbourne, VIC 3000

Australia

August 2018

CPP Project: 12638

Prepared by:

Kenneth Fung, Project Engineer

Joe Paetzold, Engineering Manager

CPP

Unit 2, 500 Princes Highway
St. Peters, NSW 2044, Australia

info-syd@cppwind.com
www.cppwind.com

DOCUMENT VERIFICATION

Date	Revision	Prepared by	Checked by	Approved by
02/08/18	Draft report	KF	JP	JP

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

Cermak Peterka Petersen Pty. Ltd. has been engaged by RCP to provide a qualitative assessment of the impact of the proposed Twin Street development on the wind conditions in the surrounding areas.

The proposed development is located within the Adelaide CBD, Figure 1. The proposed development will comprise of a single rectangular residential tower that reaches a maximum height of approximately 124 m above ground level, Figure 2. As it is larger than most of the surrounding structures, the addition of the proposed development is expected to have some impact on the local wind conditions, and the extents are broadly discussed in this report.

The development features five communal floors spread across the height of the tower with balconies to the north arranged in 'Amenity Boxes', Figure 2, as well as a roof terrace.

Figure 1: Aerial view of the proposed development site (Google Earth, 2017).

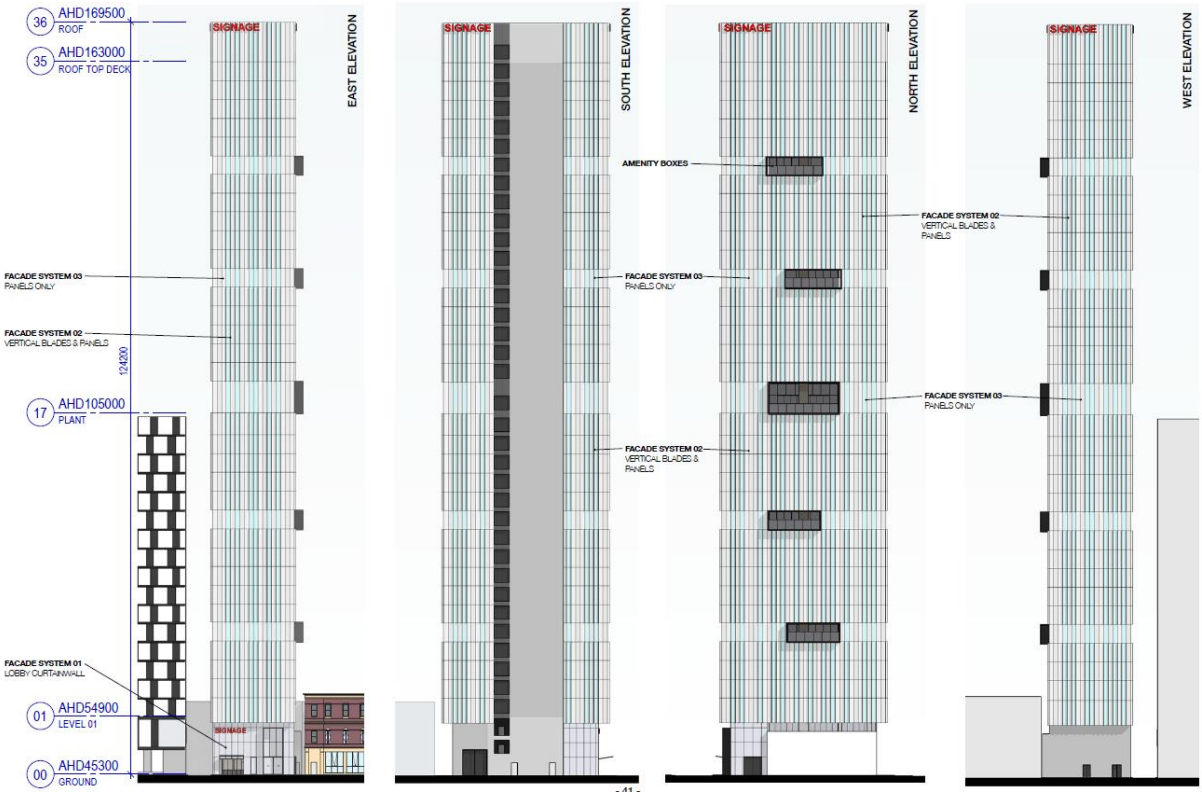


Figure 2: Elevations of the proposed development.

2 ADELAIDE WIND CLIMATE

The proposed development lies approximately 8 km to the north-east of the Adelaide Airport Bureau of Meteorology anemometer. To enable a qualitative assessment of the wind environment, the wind frequency and direction information measured by the Bureau of Meteorology at a standard height of 10 m at Adelaide Airport from 1995 to 2016 have been used in this analysis. The wind rose for Adelaide Airport is shown in Figure 3 and is considered to be representative of prevailing winds at the site. Strong prevailing winds are organised into three main groups which centre at about the north, south-west, and south-east, with winds from the latter generally experiencing slightly milder winds than the former two. This wind assessment is focused on these prevailing strong wind directions.

On-shore winds from the south-western quadrant would be expected to lose intensity at the site of the proposed development compared to the anemometer location at the airport due to the increased distance from the shore.

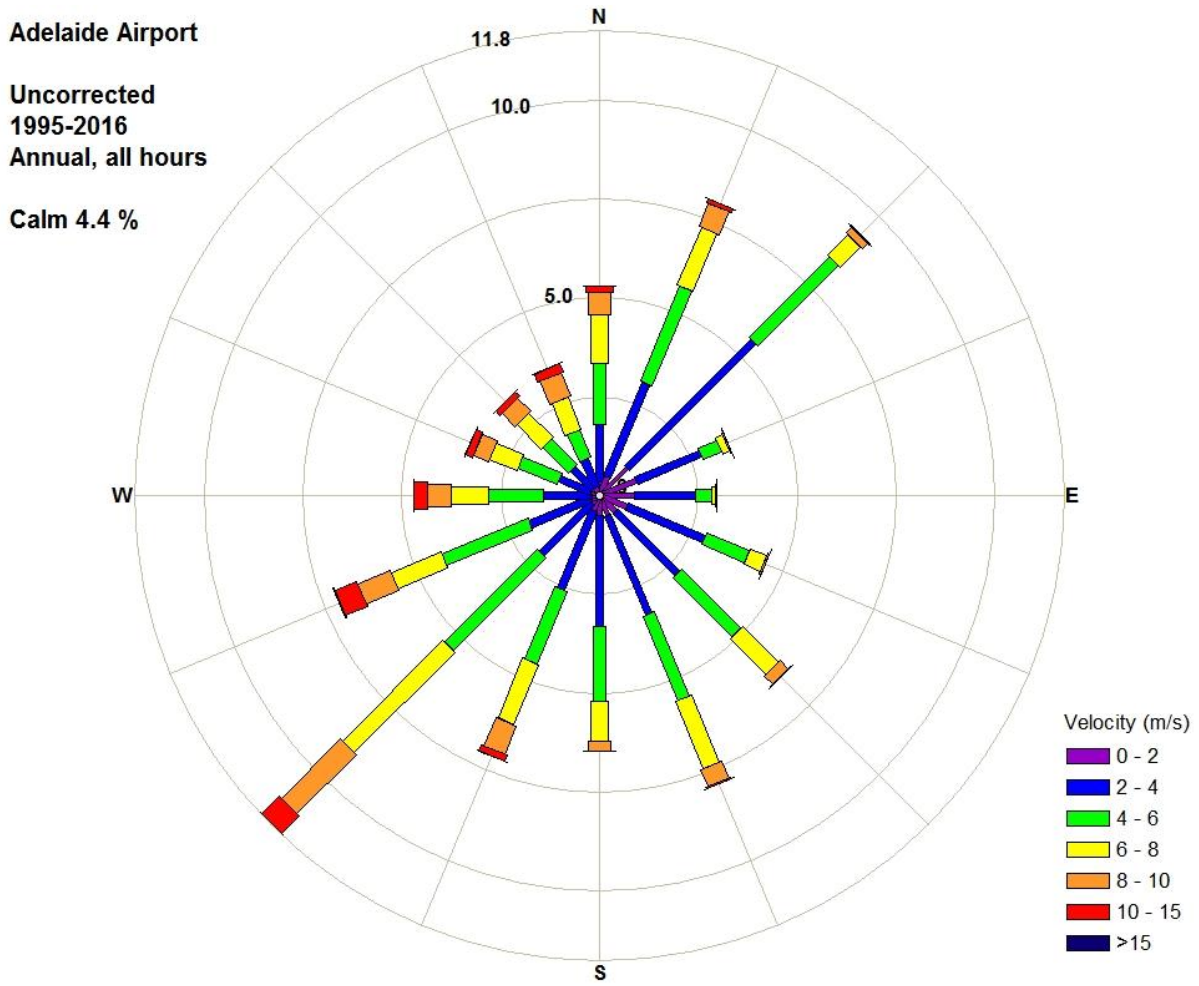


Figure 3: Wind rose for Adelaide Airport.

3 ENVIRONMENTAL WIND CRITERIA

It is generally accepted that wind speed and the rate of change of wind velocity are the primary parameters that should be used in the assessment of how wind affects pedestrians. Local wind effects can be assessed with respect to a number of environmental wind speed criteria established by various researchers. Despite the apparent differences in numerical values and assumptions made in their development, it has been found that when these are compared on a probabilistic basis, there is remarkably good agreement.

The Adelaide City Development Plan (2018) specifies that buildings should be designed to provide wind protection for pedestrians, and any development *"over 21 metres in building height built at or on the street frontage should minimise wind tunnel effect"*. No numeric criteria for the assessment of the wind conditions are specified in the Development Plan. This study is based upon the criteria of Lawson (1990), which are described in Table 1 for both pedestrian comfort and distress/safety. The benefits of these from a comfort perspective is that the 5% of the time event is appropriate for a precinct to develop a reputation from the general public. The limiting criteria are defined for both a mean and gust equivalent mean (GEM) wind speed. The criteria based on the mean wind speeds define when the steady component of the wind causes discomfort, whereas the GEM wind speeds define when the wind gusts cause discomfort.

Table 1: Pedestrian comfort criteria for various activities.

Comfort (max. wind speed exceeded 5% of the time)	
<2 m/s	Outdoor dining
2 - 4 m/s	Pedestrian sitting (considered to be of long duration)
4 - 6 m/s	Pedestrian standing (or sitting for a short time or exposure)
6 - 8 m/s	Pedestrian walking
8 - 10 m/s	Business walking (objective walking from A to B or for cycling)
> 10 m/s	Uncomfortable
Distress/Safety (max. wind speed exceeded 0.022% of the time, twice per annum)	
<15 m/s	General access area
15 - 20 m/s	Acceptable only where able-bodied people would be expected; no frail people or cyclists expected
>20 m/s	Unacceptable

The wind speed is either an hourly mean wind speed or a gust equivalent mean (GEM) wind speed. The GEM wind speed is equal to the 3 s gust wind speed divided by 1.85.

4 ENVIRONMENTAL WIND ASSESSMENT

The development site is surrounded in most directions by medium- to high-rise buildings, with a region of parkland to the north. Topography surrounding the site is relatively flat from a wind perspective and unlikely to significantly affect the wind climate at the site. Winds in such surrounds tend to experience more channelling than areas with sparsely populated structures. Several wind flow mechanisms such as downwash and channelling flow are described in Appendix 1, and the effectiveness of some common wind mitigation measures are described in Appendix 2.

The subject site is located on a block bounded by Twin Street to the east and Grenfell Street to the south. The proposed development consists of a single prismatic tower with a rectangular planform. A ground floor plan is shown in Figure 4.

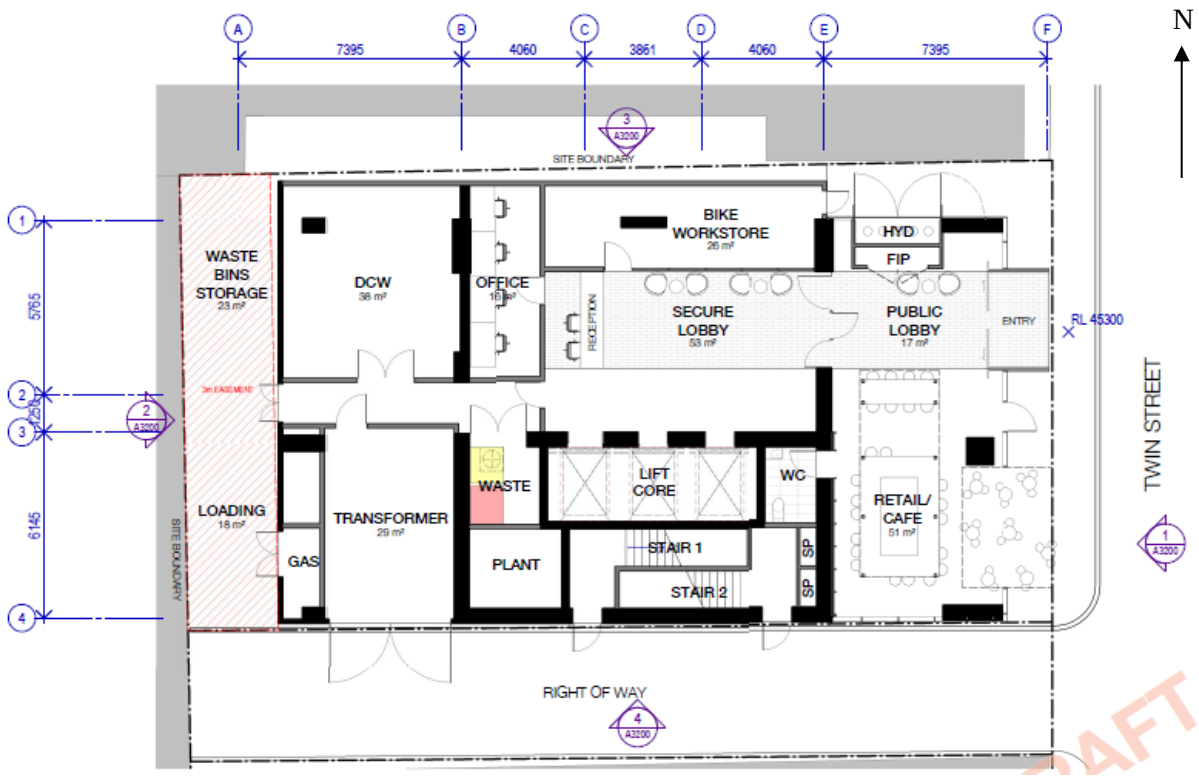


Figure 4: Ground floor of the proposed development.

4.1 Winds from the north

Winds from the north quadrant will approach over the low- to medium-rise buildings of the University of Adelaide and parts of the Adelaide CBD. The lower levels of the proposed development are relatively shielded from winds from the north by existing buildings situated to the north of the proposed development. Wind from the north would impinge on the wide north façade of the upper part of the proposed development generating downwash flow from that façade. Due to the close proximity to the neighbouring building to the north of the proposed development, most of this downwash will

likely deflect off the roof of the adjacent building. A small portion of the downwash would be expected to impact the narrow laneway bordering the north of the site and accelerate around the north-east corner of the proposed development before dispersing onto Twin Street. The main entrances to the proposed development are well protected by the walls to the side extending out from the façade level. The wind conditions along the laneway bordering the north of the site are expected to be acceptable given the expected infrequent amount of pedestrian activity along this corridor.

For winds from the north quadrant, wind conditions at most locations around the proposed development site are expected to remain similar to the existing wind conditions.

4.2 Winds from the south-west

Winds from the south-west quadrant will pass over the medium- to high-rise buildings of the Adelaide CBD. The lower levels of the proposed development are relatively shielded from winds from the south-west by several structures situated in the south-west quadrant of the proposed development. The alignment of the tower will encourage winds from the south-west to flow around the proposed development, with some downwash possible expected off the upper levels of the south façade of the proposed development. For winds with a larger southerly component, some downwash may be expected off the upper levels of the south façade of the proposed development, some of which will likely deflect off the roof of the adjacent building to the south of the development site. A portion of the downwash would be expected to impact the laneway bordering the south of the site and accelerate around the south-east corner of the proposed development before dispersing onto Twin Street. The wind conditions along the laneway bordering the south of the site are expected to be acceptable given the infrequent amount of pedestrian activity along this corridor. The partially outdoor seating area of the café would experience windy conditions for these winds, however the large operable opening would give an outdoor appearance to the majority of the indicated seating area, while a significant portion of this area is protected from the stronger winds. If calmer conditions are desired for the entire outdoor seating area, a local screen at the south-eastern corner of the building extending to the eastern site boundary would provide adequate protection of the space.

For winds from the south-west quadrant, wind conditions at most locations around the proposed development site are expected to remain similar to the existing wind conditions with some local increase in wind speeds near the south-eastern corner of the building.

4.3 Winds from the south-east

Winds from the south-east quadrant will pass over Hindmarsh Square as well as the low- to medium-rise buildings of the Adelaide CBD, and are relatively unimpeded upon reaching the proposed development site. As with winds from the south-west, the alignment of the tower will encourage winds

from the south-east to flow around the proposed development. Significant downwash is therefore not expected, as winds with a larger easterly component are relatively mild and infrequent in Adelaide.

For winds from the south-east quadrant, wind conditions at most locations around the proposed development site are expected to remain similar to the existing wind conditions.

4.4 Summary

Wind conditions at most locations around the proposed development site are expected to remain similar to the existing wind conditions. From a pedestrian comfort perspective, the wind environment around the proposed development site is likely to be classified as acceptable for pedestrian standing or walking under Lawson. These pedestrian comfort levels would be suitable for public accessways, and for stationary short-term exposure activities. The locations at the base of the tower along Twin Street intended for outdoor-style seating activities are largely protected from strong winds, and localised amelioration measures to extend the area of calm wind conditions was provided above. All locations would be expected to satisfy the safety/distress criterion.

4.5 Wind conditions within the development

At ground level, the additional set of doors separating the secure lobby from the publicly accessible area are considered beneficial from a wind perspective as they will assist in mitigating any potential stack effect flows through tower lift cores associated with thermal stratification effects.

The proposed development features 5 communal floors with north facing balconies spread across the height of the tower, Figure 2. While these balconies extend out from the building façade, the wind conditions in the outdoor parts of these communal levels are generally expected to be relatively calm, as they are arranged in ‘Amenity Boxes’ and feature high balustrades providing protection from winds to all sides. The largest balcony space is foreseen on Level 17, shown in Figure 5.

The roof top of the proposed development includes an outdoor recreational area in the northern part of the floor. Figure 6. While strong wind conditions would generally be expected at this height, the outdoor space is protected to the south by the enclosed part of the roof level, and by full height screens around the perimeter of the rooftop terrace, Figure 6 (B).

Figure 5: Level 17 floor plan (T) and render of 'Amenity Box' (B).

Figure 6: Rooftop floor plan (T) and 3d render (B) of the roof top recreational deck.

5 CONCLUSION

Cermak Peterka Petersen Pty. Ltd. has provided a qualitative assessment of the impact of the proposed Twin Street project on the local wind environment in and around the development site. Being larger than most surrounding structures, the proposed development will have some effect on the local wind environment, though any changes are not expected to be significant from the perspective of pedestrian comfort or safety. Wind conditions around the development are expected to be classified as acceptable for pedestrian standing or walking from a Lawson comfort perspective and pass the distress/safety criterion. Additional local amelioration would be recommended if calmer conditions are desired such as for outdoor seating on Twin Street.

To quantify the wind conditions around the site, a wind-tunnel test would be recommended during detailed design.

6 REFERENCES

Government of South Australia, (2018), "Development Plan Adelaide (City)".

Lawson, T.V. (1990), "The Determination of the Wind Environment of a Building Complex before Construction" Department of Aerospace Engineering, University of Bristol, Report Number TVL 9025.

Melbourne, W.H., 1978, Criteria for Environmental Wind Conditions, Journal of Wind Engineering and Industrial Aerodynamics, Vol.3, No.2-3, pp.241-249.

Standards Australia (2011), Australian/New Zealand Standard, Structural Design Actions, Part 2: Wind Actions (AS/NZS1170 Pt.2).

Appendix 1: Wind flow mechanisms

When the wind hits a large isolated building, the wind is accelerated down and around the windward corners, Figure 7; this flow mechanism is called downwash and causes the windiest conditions at ground level on the windward corners and sides of the building. In Figure 7, smoke is being released into the wind flow to allow the wind speed, turbulence, and direction to be visualised. The image on the left shows smoke being released across the windward face, and the image on the right shows smoke being released into the flow at about third height in the centre of the face.

Techniques to mitigate the effects of downwash winds on pedestrians include the provision of horizontal elements, the most effective being a podium to divert the flow away from pavements and building entrances. Awnings along street frontages perform a similar function, and the larger the horizontal element, the more effective it will be in diverting the flow.

Channelling occurs when the wind is accelerated between two buildings or along straight streets with buildings on either side.

Figure 8 shows the wind at mid and upper levels on a building being accelerated substantially around the corners of the building. When balconies are located on these corners, they are likely to be breezy, and will be used less by the owner due to the regularity of stronger winds. Owners quickly become familiar with when and how to use their balconies. If the corner balconies are deep enough, articulated, or have regular partition privacy fins, then local calmer conditions can exist.

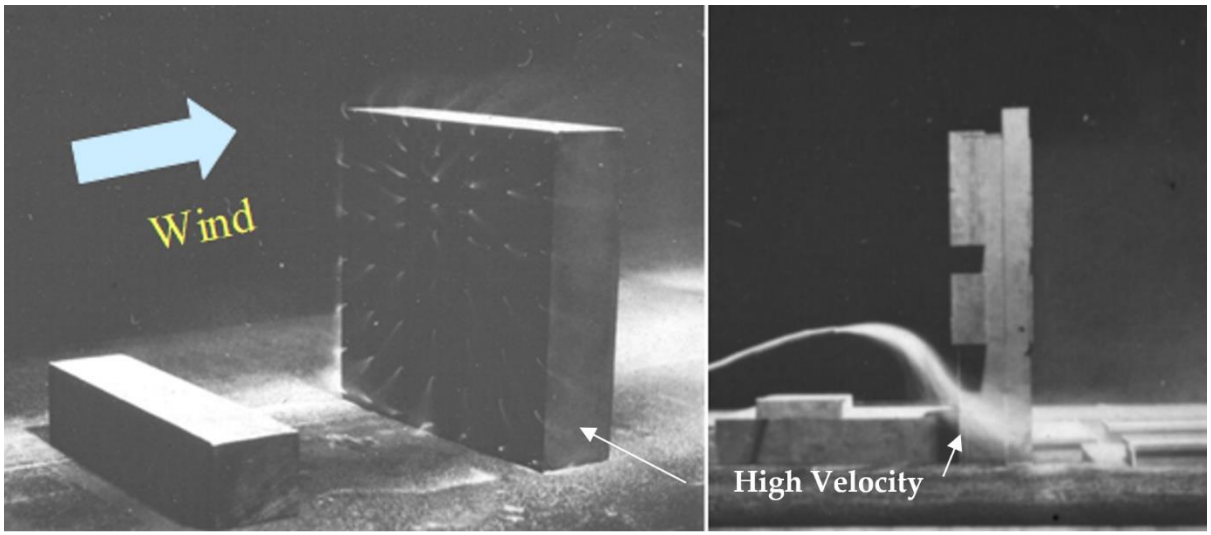


Figure 7: Flow visualisation around a tall building.

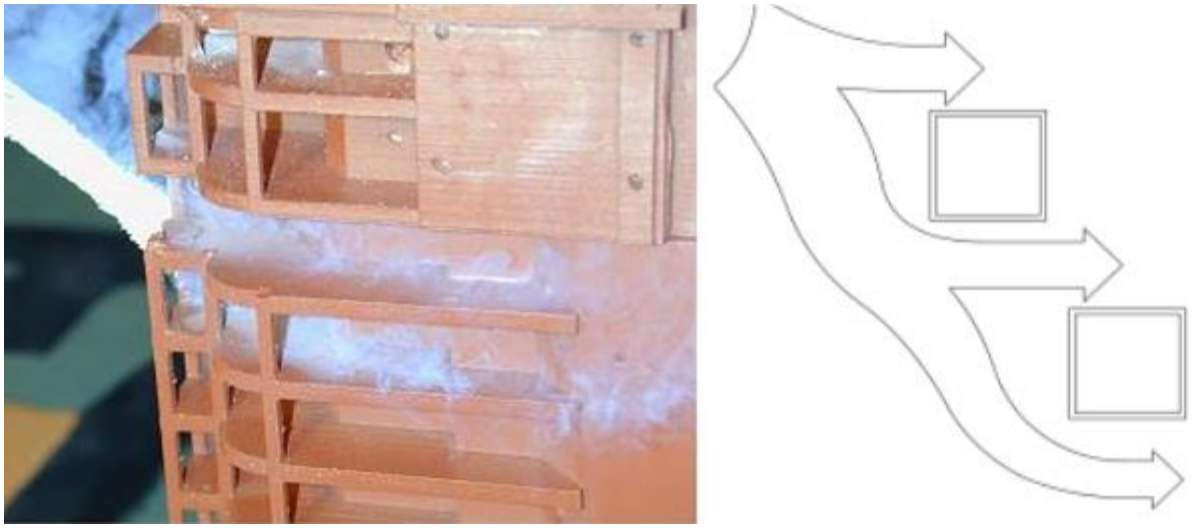


Figure 8: Visualisation through corner balconies (L) and channelling between buildings (R).

Appendix 2: Wind Impact Planning Guidelines

It is well known that the design of a building will influence the quality of the ambient wind environment at its base. Below are some suggested wind mitigation strategies that should be adopted into precinct planning guidelines and controls (see also Cochran, 2004).

Building form – Canopies

A large canopy may interrupt the flow as it moves down the windward face of the building. This will protect the entrances and sidewalk area by deflecting the downwash at the second storey level, Figure 9. However, this approach may have the effect of transferring the breezy conditions to the other side of the street. Large canopies are a common feature near the main entrances of large office buildings.

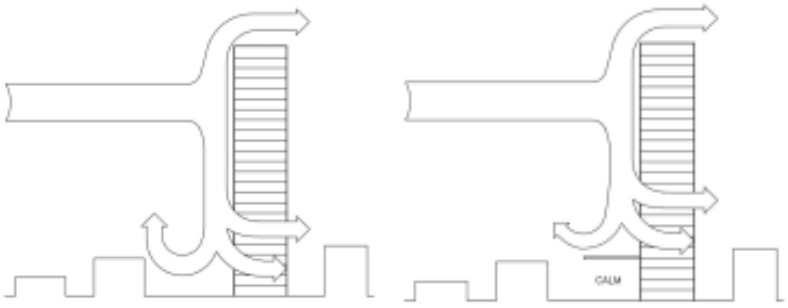


Figure 9: Canopy Windbreak Treatment. (L) Downwash to street level may generate windy conditions for pedestrians. This is particularly true for buildings much taller than the surrounding buildings. (R) A large canopy is a common solution to this pedestrian-wind problem at street level.

Building form – Podiums

The architect may elect to use an extensive podium for the same purpose if there is sufficient land and it complies with the design mandate, Figure 10. This is a common architectural feature for many major projects in recent years, but it may be counterproductive if the architect wishes to use the podium roof for long-term pedestrian activities, such as a pool or tennis court.

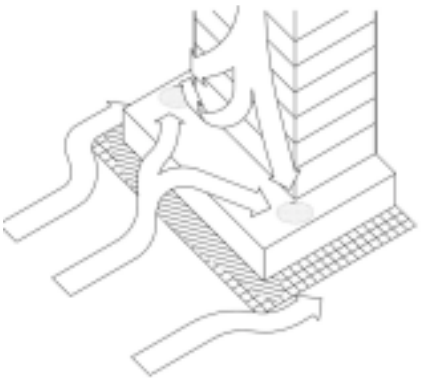


Figure 10: The tower-on-podium massing often results in reasonable conditions at ground level, but the podium may not be useable.

Building form – Arcades

Another massing issue, which may be a cause of strong ground-level winds, is an arcade or thoroughfare opening from one side of the building to the other. This effectively connects a positive pressure region on the windward side with a negative pressure region on the lee side; a strong flow through the opening often results, Figure 11. The uninvitingly windy nature of these open areas is a contributing reason behind the use of arcade airlock entrances (revolving or double sliding doors).

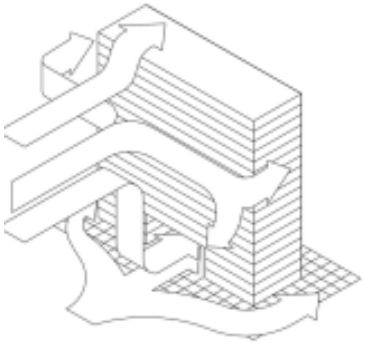


Figure 11: An arcade or open column plaza under a building frequently generates strong pedestrian wind condition.

Building form – Alcove

An entrance alcove behind the building line will generally produce a calmer entrance area at a mid-building location, Figure 12(L). In some cases, a canopy may not be necessary with this scenario, depending on the local geometry and directional wind characteristics. The same undercut design at a building corner is usually quite unsuccessful, Figure 12(R), due to the accelerated flow mechanism described in Figure 7 and the ambient directional wind statistics. If there is a strong directional wind preference, and the corner door is shielded from those common stronger winds, then the corner entrance may work. However, it is more common for a corner entrance to be adversely impacted by this local building geometry. The result can range from simply unpleasant conditions to a frequent inability to open the doors.

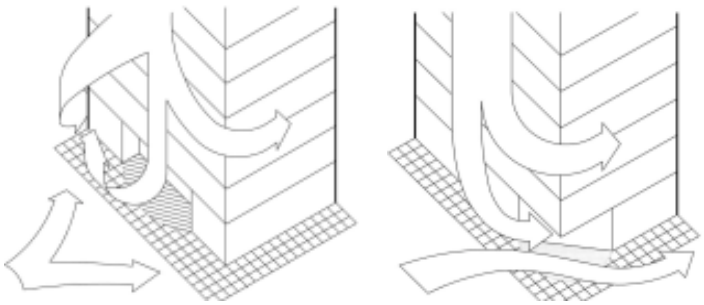


Figure 12: Alcove Windbreak Treatment. (L) A mid-building alcove entrance usually results in an inviting and calm location. (R) Accelerated corner flow from downwash often yields an unpleasant entrance area.

Building form – Façade profile and balconies

The way in which a building's vertical line is broken up may also have an impact. For example, if the floor plans have a decreasing area with increased height the flow down the stepped windward face may be greatly diminished. To a lesser extent the presence of many balconies can have a similar impact on ground level winds, although this is far less certain and more geometry dependent. Apartment designs with many elevated balconies and terrace areas near building ends or corners often attract a windy environment to those locations. Mid-building balconies, on the broad face, are usually a lot calmer, especially if they are recessed. Corner balconies are generally a lot windier and so the owner is likely to be selective about when the balcony is used or endeavours to find a protected portion of the balcony that allows more frequent use, even when the wind is blowing.

Use of canopies, trellises, and high canopy foliage

Downwash Mitigation – As noted earlier, downwash off a tower may be deflected away from ground-level pedestrian areas by large canopies or podium blocks. The downwash then effectively impacts the canopy or podium roof rather than the public areas at the base of the tower, Figure 10. Provided that the podium roof area is not intended for long-term recreational use (e.g. swimming pool or tennis court), this massing method is typically quite successful. However, some large recreational areas may need the wind to be deflected away without blocking the sun (e.g. a pool deck), and so a large canopy is not an option. Downwash deflected over expansive decks like these may often be improved by installing elevated trellis structures or a dense network of trees to create a high, bushy canopy over the long-term recreational areas. Various architecturally acceptable ideas may be explored in the wind tunnel prior to any major financial commitment on the project site.

Horizontally accelerated flows between two tall towers, Figure 8(R), may cause an unpleasant, windy, ground-level pedestrian environment, which could also be locally aggravated by ground topography. Horizontally accelerated flows that create a windy environment are best dealt with by using vertical porous screens or substantial landscaping. Large hedges, bushes or other porous media serve to retard the flow and absorb the energy produced by the wind. A solidity ratio (i.e. proportion of solid area to total area) of about 60-70% has been shown to be most effective in reducing the flow's momentum. These physical changes to the pedestrian areas are most easily evaluated by a model study in a boundary-layer wind tunnel.

References

Cochran L., (2004) Design Features to Change and/or Ameliorate Pedestrian Wind Conditions, Proceedings of the ASCE Structures Congress, Nashville, Tennessee, May 2004.

3 September 2018

Karl Woehle
Department of Planning, Transport & Infrastructure
GPO Box 1815
ADELAIDE SA 5001

Dear Karl,

DEVELOPMENT NUMBER: **020/A067/18**
APPLICANT: **29 Twin Street Pty Ltd C/-Masterplan**
NATURE OF DEVELOPMENT: **Construction of a 36 storey mixed-use building comprising student accommodation and ground level café**
SUBJECT LAND: **27-29 TWIN STREET, ADELAIDE, SOUTH AUSTRALIA, 5000**

The application has been assessed and the building at a proposed height of RL 169.5m AHD the application **will** penetrate the Adelaide Airport Obstacle Limitation surfaces (OLS) which is protected airspace for aircraft operations.

The application will require approval in accordance with the Airports Act 1996 and the Airports (Protection of Airspace) Regulations 1996 and therefore will be forwarded to the Department of Infrastructure and Regional Development for their approval.

The developments will penetrate the OLS by approximately 34.5 metres.
An Airspace Impact Study prepared by an Airspace Consultant is required to be submitted to the airport to commence the airspace approval application.

If the development is approved by the Department of Infrastructure and Regional Development any associated lighting would also need to conform to the airport lighting restrictions and shielded from aircraft flight paths.

Crane operations associated with construction, if approved, will also be subject to a separate application.

Should you require any additional information or wish to discuss this matter further please contact the undersigned on 8308 9245.

Yours sincerely,

Brett Eaton
Airside Operations Manager

Adelaide Airport

Adelaide Airport Limited
1 James Schofield Drive
Adelaide Airport
South Australia 5950

T +61 8 8308 9211
F +61 8 8308 9311
adelaideairport.com.au
ABN 78 075 176 653

OFFICE FOR
DESIGN +
ARCHITECTURE SA

File No:
2014/11234/01

Ref No:
13065977

31 August 2018

Mr Karl Woehle
Planning Officer - CBD & Inner Metro Team
Strategic Development Assessment
Planning and Development
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
Adelaide SA 5000

Karl.Woehle@sa.gov.au

For the attention of the State Commission Assessment Panel

29 Twin Street, Adelaide

Further to the referral 020/A067/18 received 9 August 2018 pertaining to the development application at the above address and in my capacity as a statutory referral in the State Commission Assessment Panel, I am pleased to provide the following comments for your consideration.

The proposal was presented to the Design Review panel on one occasion. A pre-lodgement agreement was not reached in advance of lodgement.

In principle, I support the project team's aspiration to deliver a high density student residential facility in this location. The proposal has the potential to become a landmark development due to its scale and visibility, and therefore must be supported by high quality design, particularly in relation to architectural expression, cityscape contribution and the delivery of high quality amenity for residents both in individual units and shared spaces.

The subject land is located on the western side of Twin Street, between Rundle Mall and Grenfell Street. The site has an approximately 15 metre frontage to Twin Street and a 28.5 metre frontage to the Right of Way to the south. The Right of Way provides service access to the subject site, the adjoining Ibis Hotel and the Adelaide Arcade. Twin Street is a narrow service lane, providing rear access for properties on Rundle Mall, Grenfell Street and Hindmarsh Square. Twin Street is also linked to Hindmarsh Square through the Twin Plaza pedestrian thoroughfare. The site adjoins Gay's Arcade to the north and Adelaide Arcade to the west. Both arcades are State heritage places. Across Twin Street, a two storey former warehouse at 27-29 Hindmarsh Square (28-30 Twin Street) and the Hindmarsh Buildings at the north east corner of Grenfell and Twin Streets are Local heritage places.

The proposed building extends approximately 124 metres in height, comprising 38 levels, including the roof deck for communal facilities. I support the proposed height in principle, as the site is located within the 'No Prescribed Height Limit' area as described by the Development Plan. However my support for a development of this scale on a constrained mid-block site is contingent on the successful delivery of high quality residential amenity, which in my opinion is yet to be successfully

Level 1
26-28 Leigh Street
Adelaide SA 5000

GPO Box 1533
Adelaide SA 5001

DX 171

T- +61(0)8 8402 1884
E- odasa@sa.gov.au

File No:
2014/11234/01

Ref No:
13065977

demonstrated. I am also of the view that high quality architectural expression commensurate with a development of significant prominence is yet to be convincingly demonstrated.

The proposed built form includes two distinctive elements. The approximately 10 metre tall lower portion with the glazed facade set back along the Twin Street frontage, while the tower above is singular in built form, more solid in expression, and is proposed to the Twin Street boundary. The recessed built form at the bottom includes a vertically connected volume over three levels presenting to Twin Street and intends to act as an alternative to a podium that positively responds to the existing built form scale of Twin Street, which I strongly support. This built form is also set back from the western boundary to provide clearance over the existing SA Water easement. A minor setback is also provided at the north east corner to accommodate building services infrastructure.

The tower above includes approximately 1.8 metre setbacks from the north and the west boundaries and cantilevers over the SA Water easement along the western boundary. I support the slender built form, which in my opinion has a potential for an elegantly proportioned addition to the cityscape. While I am concerned by the proximity of the northern and western walls to the side and rear boundaries, I acknowledge the potential for the adjoining Gay's Arcade and Adelaide Arcade sites to be redeveloped is considerably constrained by their State heritage status.

Active use spaces, such as a retail/cafe tenancy, public and secure lobbies are proposed on the Twin Street frontage at the ground floor, which I support. I also strongly support the location of services infrastructure on mid-levels to maximise active use spaces on the ground floor. I support the location of the services and the back of house functions to the rear of the site, and the early engagement of a service engineer to ensure adequate spaces are provided to support the successful functioning of the development.

I support the provision of communal spaces over two floors vertically connected via a 10 metre tall void. While I remain concerned by the provision of the services mezzanine level between the two active floors, I acknowledge the provision of the projecting double height entry portal highlights the height and the volume of the front of the house space. In my opinion, an opportunity exists to reinforce the physical and visual connection between levels through the provision of an open stair. An opportunity also exists to broaden the uses of these floors to better reflect the development's identity as a learning facility and a 'vertical village' for students.

I support the front setback of the lower built form to extend the public realm and accommodate increased pedestrian traffic. I also strongly support the inclusion of a lift-up door to create an opportunity for genuine engagement with the public realm. However the proposal is unclear in regards to the intended threshold treatment between the eastern facade and the footpath, including the outdoor seating/dining area. I encourage the design team to continue discussions with the City of Adelaide to develop an appropriate street threshold treatment and achieve a mutually beneficial outcome for Twin Street, informed by the envisaged future character of this north-south link. I recommend development of a well-considered urban interface response that references the ground floor uses and contributes positively to the public realm.

I support the proposed proportion and expression of the lower built form, which in my opinion convincingly responds to the adjoining heritage buildings. The facade

Level 1
26-28 Leigh Street
Adelaide SA 5000

GPO Box 1533
Adelaide SA 5001

DX 171

T- +61(0)8 8402 1884
E- odasa@sa.gov.au

File No:
2014/11234/01

Ref No:
13065977

treatment for the tower above is described as a combination of reflective glass panels, white corrugated panels and silver anodised panels. The facades also include vertical metal fins on all elevations, creating subtle horizontal bands where fins terminate on selected floors. Given its significant scale and the adjacency to the State heritage places, the building is likely to remain as a highly visible addition to the city skyline. As such, I am of the opinion that development of an appropriate architectural expression, supported by high quality materials, is critical to the overall success of the development. While I support the general approach to treat the building in the round, detailed information on the selected material and finishes is required in order to undertake a meaningful review and provide informed comments. I request the provision of further information regarding the materiality, including a sample board of the selected materials and finishes that clearly indicates the design intent. Further, I am yet to be convinced by the proposed treatment to the stair core on the southern elevation. I recommend holistic development of the facade design and detailing, informed by the environmental and site specific conditions.

Five projecting framed openings are proposed on the northern elevation to accommodate shared amenity spaces. While I support the intent for the architectural expression to reflect the internal activities, I am not convinced by the proposed 'amenity boxes' in their current form. I support the increase of the communal area sizes and numbers and the change to the materiality, however I remain of the opinion that the provision of the projected forms on a single elevation is at odds with the overall building expression, which is singular and vertically articulated. I recommend exploration of a coherent expression reflective of the project's identity as a vertical community.

The proposed communal spaces include the retail/cafe space on the ground floor, student hub, informal lounge and north facing balcony on the second mezzanine level, and the indoor and outdoor recreational areas on the rooftop. Shared amenity spaces on levels five, 11, 23 and 29, and the 'laundro-bar' on the mid plant level (level 17) are proposed with associated balconies, framed within the projecting boxes. I support the provision of shared student spaces and infrastructure throughout the building to fulfil the potential for buildings of this scale and nature to be communities in themselves. I recommend continuing development of the communal facility strategy to provide a strong sense of belonging and ensure high quality amenity and usability of shared spaces for the 510 students envisaged.

The residential floors offer a mix of student accommodation options, including six-bedroom/six-bathroom clusters, five-bedroom/five-bathroom clusters, twin share rooms, studio rooms, and accessible studios. I support the variety of residential options proposed and inclusion of eight accessible studios. I also strongly support the provision of access to natural light and ventilation for all habitable rooms. I acknowledge the size and planning of the rooms are based on the established business models for student accommodation, however I am concerned by the size and functional layout of some of the units. I am particularly concerned by the arrangement of twin share rooms, where no private space is provided. I am also concerned by the restricted layout of the kitchen/dining spaces within the six-bedroom/six-bathroom clusters, where the shared spaces do not appear sufficient to support six students. I recommend review of the unit configurations to ensure a high quality residential amenity as envisaged.

The submitted materials include the Sustainability Report, which identifies proposed sustainability measures such as high performance building envelope, high

Level 1
26-28 Leigh Street
Adelaide SA 5000

GPO Box 1533
Adelaide SA 5001

DX 171

T- +61(0)8 8402 1884
E- odasa@sa.gov.au

OFFICE FOR DESIGN + ARCHITECTURE SA

File No:
2014/11234/01

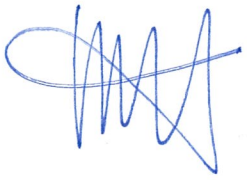
Ref No:
13065977

performance glazing and energy efficient massing. However I am yet to be convinced that the proposal has fully explored the opportunities to incorporate the principles of Ecologically Sustainable Development (ESD), particularly given the significant scale of the development. The proposal includes highly glazed walls on the north, east and west elevations. While the facades include vertical fins, I am yet to be convinced that the current application of vertical fins contributes to successful management of solar load as envisaged. I recommend further development of the facade design and detailing to genuinely respond to each orientation and site specific conditions.

The key issues relating to this proposal are summarised below. In my view, these matters warrant further review and resolution prior to consideration by the State Commission Assessment Panel in order to achieve the most successful design outcome.

- Development of a well-considered urban interface response along the Twin Street frontage.
- A high quality of external materials for the building, outdoor spaces and street interface, supported by the provision of a materials samples board.
- Development of the facade design and detailing, including the insitu concrete wall on the south elevation, informed by the environmental and site specific conditions.
- Further refinement of the architectural expression, with the view to achieving a coherent expression overall.
- Continuing development of the communal facility strategy to ensure high quality amenity and usability of shared spaces for the 510 students.
- Review of the configurations of twin share rooms and six-bedroom/six-bathroom clusters to ensure a high quality residential amenity.
- Incorporation of ESD principles, including effective solar load management.

Yours sincerely



Kirsteen Mackay
South Australian Government Architect

Level 1
26-28 Leigh Street
Adelaide SA 5000

GPO Box 1533
Adelaide SA 5001

DX 171

T- +61(0)8 8402 1884
E- odasa@sa.gov.au

Government of South Australia

Government of South Australia
Department for Environment and Water

Heritage South Australia
Economic and Sustainable Development Group
Level 8
81-91 Waymouth Street
Adelaide SA 5000
GPO Box 1047
Adelaide SA 5001
Australia
DX138
Ph: +61 8 8124 4960
Fax: +61 8 8124 4980
www.environment.sa.gov.au

Ref: SH/10795D
Date: 17 September 2018

Secretary - Ms Alison Gill
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Attention: Karl Woehle

Dear Mr Woehle

DESCRIPTION: ADELAIDE ARCADE AND GAYS ARCADE - MULTI-STOREY STUDENT ACCOMMODATION AT 29 TWIN STREET, ADELAIDE

Application number:	020/A067/18
Referral received:	9/08/2018
State heritage place:	Adelaide Arcade and Gays Arcade, 111-117 Rundle Mall and 1-212D Gays Arcade ADELAIDE

The above application has been referred to the Minister for Environment and Water in accordance with Section 37 of the *Development Act 1993* as development that directly affects a State heritage place or, in the opinion of the relevant authority, materially affects the context within which a State heritage place is situated.

Direct impact on the State heritage place

The proposed development is located on an adjacent site to the State heritage place and does not therefore directly affect the physical fabric and material heritage significance of the State heritage place.

Consequential impact on the State heritage place

The three metre setback of the lower levels at the western end of the subject site avoids a direct built interface with Adelaide Arcade. The alignment of the northern boundary, in conjunction with the existing Gay's Arcade boundary offsets and the proposed offsets of the new building, avoids any direct built interface with Gay's Arcade.

Although the northern and western faces of the tower section have boundary setbacks of less than 1.5 metres at their closest, which technically could constrain future development on the site of the State heritage place, the heritage listing protecting the historic buildings and the proximity of their built form to these boundaries limits the likelihood of any real future implication in this regard. It is noted however that the setback of the balcony at the second mezzanine level from the first floor windows in Gay's Arcade's southern wall is only about 2.1 metres, which may give rise to building rules issues to deal with the fire source feature condition at the Building Rules stage.

Material impact on the Twin Street context of the State heritage place

With reference to the Twin Street context of the State heritage place, the proposed design is considered to respond positively and satisfactorily to the visual presence and scale of Gay's Arcade.

The primary articulation of the building's form into a three-level glazed curtain wall base topped by a tall segmented shaft establishes a pronounced break aligning with the second floor string

course of Gay's Arcade. Without directly acknowledging the three-storey scale of Gay's Arcade, this alignment is nevertheless considered a satisfactory response as an interpretation of a historic townscape condition with its typically varied silhouette of between one and three stories. The success of this response relies on the string course being a strongly expressed element of Gay's Arcade's architectural design, on the purposeful alignment of the tower cladding's lower edge with the string course, and on the physical setback of the curtain wall behind the cladding alignment to three-dimensionally reinforce the transition between base and shaft.

The design is in effect a reversal of a generic podium condition, in which a solid base is typically topped by a lighter setback tower form. Here, the use of a recessed and visually lightweight podium condition succeeds because of the strong differentiation between podium and tower (in both visual material character and in planar alignment), and the presentation to the street of the singular volume of its three-level void.

The 3:2 horizontal aspect ratio of the glazed base sits comfortably with the proportions of the Gay's Arcade façade while remaining deferential to its larger scale.

Supplementing the setback of the glazed curtain wall, the setting back of the north-eastern corner of the lobby to accommodate services further assists the relationship with the State heritage place by helping to reveal the decorative detail returned onto the southern wall of Gay's Arcade and the three-dimensional form of the historic building.

The contextual response of the podium base is facilitated by its secondary articulation. The verticality of the prominent entrance portal against the horizontal proportion of the café opening provides a balanced composition to the glazed base while injecting visual interest and human scale into its relationship with Gay's Arcade.

Material impact on the wider context of the State heritage place

Moving away from the immediate context of Twin Street, the proposed building will assert a strong background presence within the viewscapes of Grenfell Street, Rundle Mall and Hindmarsh Square. Its height means it will stand as a prominent landmark well beyond this more localised context, but for the purposes of assessing heritage impact I have limited my consideration to the settings of specific heritage places, rather than its impact on the urban form of the broader cityscape.

Although a number of other State heritage places fall within this more immediate context—such as the former Mail Exchange on Grenfell Street, and in Rundle Mall the Regent Theatre façade and Commonwealth Bank building)—it is only necessary to consider the visual impact on the Adelaide Arcade as this will apply equally and with diminishing relevance to these other more distant places.

With a setback of approximately 35 metres from Grenfell Street and 80 metres from Rundle Mall, it is anticipated that the tower's separation distance from the Adelaide Arcade frontages will be sufficient to maintain a reasonable streetscape presence for the historic building's silhouette, notwithstanding the dramatic impact the tower will have on the skyline.

The consistent design language of the four facades is appropriate for a prominent building seen 'in the round', and the tower's slender proportions (in conjunction with a high quality of facade design, materials and finishes) are conducive to achieving an elegant and refined visual character as a backdrop to the Adelaide Arcade frontages.

I support the design concept in principle, subject to design development to further investigate the following aspects of the façade design.

a) The better visual integration of the northern elevation's five amenity pods into the horizontal banding of the tower shaft.

I consider that the strongly contrasting expression of the black projecting amenity pods against the subtle banding effect of the interrupted vertical fins diminishes the cohesive presentation of the building seen in the round and tends to undermine the otherwise refined visual character of the facade design and the integrity of the slender tower's architectural expression. An approach that reduced the contrast and allowed the pods more to emerge from and reinforce the banding would in my view benefit the overall design approach.

b) The potential impact of environmental performance factors on the façade design concept.

The design concept proposes the use of vertical sun shading fins, floor-to-ceiling glazing and bands of unshaded glazing as a consistent façade configuration to each elevation. In order to provide certainty that the intrinsic architectural expression of the building can be maintained, it is recommended that design development of the façade concept should include further investigation of how the current configuration applied consistently to each elevation will satisfy the differing environmental performance criteria of each orientation.

c) The materiality and architectural expression of the southern elevation's central core.

The proposed in situ concrete core will be highly visible in views across a wide arc from the south, and its material quality as a backdrop to the Adelaide Arcade will be readily apparent from Grenfell Street. Additionally, the core is represented graphically at this stage as a single unbroken plane without construction joints or architectural articulation. I recommend that further investigation should be undertaken in design development both into the material selection and finish of the core and into its architectural expression as a cohesive element of the southern elevation, in order to provide certainty that the overall quality of design and materials expected of this landmark building is achieved.

Confirmation is also sought at the design development stage of the base material and finish for the façade element described as '*white corrugated panel*'. This information is not apparent from the current documentation.

In summary, the proposed development is considered to be acceptable in relation to the above State heritage place, subject to the following recommendation.

Recommendation

A. Pursuant to Section 33(3) of the *Development Act 1993*, the following matter/s should be reserved for further assessment prior to the granting of Development Approval, to the satisfaction of the relevant planning authority.

Reserved matter 1: Design development of the tower facades, in particular

- **a) the better visual integration of the northern elevation's five amenity pods into the horizontal banding of the tower shaft;**
- **b) the potential impact of environmental performance factors on the façade design concept; and**
- **c) the materiality and architectural expression of the southern elevation's central core.**

Reason for reserved matter: To achieve a more integrated expression of the pods as a coherent element of the overall façade design concept. To provide certainty that the intrinsic architectural expression of the building and its overall quality of design and materials can be realised.

B. The following condition/s should be incorporated into any consent or approval.

Condition 1: A dilapidation survey recording the condition of the State heritage place shall be prepared prior to the commencement of site works, to the satisfaction of the relevant planning authority. As well as recording fabric in good condition, the survey shall also record the location, type and dimensional extent of any existing physical

damage to the place that might be affected by the proposed excavation, site works and construction works.

Reason for condition: To provide a record prior to the commencement of the proposed works, as a reference for the assessment of any subsequent damage.

Condition 2: The contractor shall prepare and submit a Construction Vibration Management Plan (CVMP) that establishes:

a) appropriate vibration limits in the proximity of the heritage place as informed by DIN 4150-3;

b) appropriate construction techniques to limit vibration to the established limits, and exclusion zones for equipment and construction practices that are likely to exceed these;

c) appropriate monitoring techniques to ensure vibration limits are not exceeded; and

d) risk management procedures for any works that are likely to exceed established limits to ensure the protection and preservation of fabric of heritage significance;

e) a regime of regular inspection of the heritage fabric to ensure no damage is arising from the works; and

f) procedures to be followed if any structural distress or damage is identified in the heritage fabric.

A copy of the CVMP shall be provided to the satisfaction of the relevant planning authority in consultation with Heritage South Australia (Department for Environment and Water) prior to commencement of works on site.

Reason for condition: To ensure ground vibrations associated with site works and construction do not cause damage or distress to building fabric of heritage significance.

Condition 3: Samples of external materials, colours and finishes shall be provided for further assessment to the satisfaction of the relevant planning authority prior to the granting of development approval for Stage 4 (Architectural fit-out and external facades).

Reason for condition: Information provided with the application is provisional and requires confirmation by means of actual samples to enable an assessment of the building's finished appearance and visual quality. In particular, the base material and surface finish of the 'white corrugated panel' is currently not specified.

General notes

1. Should Council not adopt the above recommendation in full, it will be necessary to obtain the concurrence of the State Commission Assessment Panel before a decision is conveyed to the applicant.
2. Any changes to the proposal for which planning consent is sought or granted may give rise to heritage impacts requiring further consultation with the Department for Environment and Water, or an additional referral to the Minister for Environment and Water. Such changes would include for example (a) an application to vary the planning consent, or (b) Building Rules documentation that incorporates differences from the proposal as documented in the planning application.
3. To ensure a satisfactory heritage outcome, Council is requested to consult the Department for Environment and Water in finalising any conditions or reserved matters above.
4. In accordance with Regulation 43 of the *Development Regulations 2008*, please send the Department for Environment and Water a copy of the Decision Notification.

5. Council is requested to inform the applicant of the following requirements of the *Heritage Places Act 1993.*
   (a) If an archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the SA Heritage Council shall be notified.
   (b) Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.

   For further information, contact the Department for Environment and Water.
6. Council is requested to inform the applicant of the following requirements of the *Aboriginal Heritage Act 1988.*
   (a) If Aboriginal sites, objects or remains are discovered during excavation works, the Aboriginal Heritage Branch of the Aboriginal Affairs and Reconciliation Division of the Department of the Premier and Cabinet (as delegate of the Minister) should be notified under Section 20 of the *Aboriginal Heritage Act 1988*.

For any enquiries in relation to this application, I can be contacted on telephone 8124 4935 or e-mail peter.wells@sa.gov.au.

Yours sincerely

Peter Wells
Principal Conservation Architect
DEPARTMENT FOR ENVIRONMENT AND WATER
as delegate of the
MINISTER FOR ENVIRONMENT AND WATER

Woehle, Karl (DPTI)

From: Shirai-Doull, Aya (DPTI)
Sent: Thursday, 11 October 2018 8:43 AM
To: Woehle, Karl (DPTI)
Subject: RE: 29 Twin Street - Agency Referrals Response

Karl,

This email is in response to the additional drawings and the associated letter forwarded on 8 October 2018 to address some of the concerns outlined in the Government Architect's referral letter dated 31 August 2018.

Urban interface response along Twin Street
I acknowledge the additional comments provided regarding this matter.
I continue to recommend development of the street interface treatment, including the selection of pavers, design of the private/public (footpath) threshold and the indoor/outdoor thresholds, informed by the urban design principles and the Adelaide City Council's Rundle Mall masterplan.

External materials
I acknowledge the applicant's intention to provide high quality materials and finishes to achieve an outcome that *'looks and feels more like a hotel'*.

Through the applicant's correspondence with Heritage SA (email from Greg Vincent to Peter Wells, dated 6 September 2018), I have become aware that the white corrugated cladding for the main building facades is likely to '*be aluminum and this will be installed as part of a 'slab to slab' method of construction'.*
In light of this information, I request provision of additional material demonstrating the proposed approach to facade detailing and the resultant overall architectural expression, in addition to a material samples board, with the view to assisting the SCAP in evaluating the true design intent for the architectural expression.

Facade design and detailing, including the southern insitu concrete wall
I acknowledge the additional information provided regarding the expression of the insitu concrete wall.
In principle, I support the intent to maintain the core wall exposed with the horizontal 'pour joints'. I request additional information provided regarding the construction management strategy to ensure the delivery of a high quality concrete finish envisaged.

Refinement of architectural expression
We acknowledge the additional comments provided.

Communal facility strategy
I have no additional comment.

Twin Share room configuration
I acknowledge the provision of an alternative internal layout with a central privacy screen.
I remain concerned about the compromised privacy in the twin share rooms, however I recognise the layout is based on internationally established student accommodation models.

Facade solar management
I acknowledge the additional information provided to confirm the extent of glazing on each facade.
I also acknowledge that the vertical fins are not the primary tool for managing heat load, and that solar load management is achieved primarily through the use of high performance facade systems/materials.

Kind regards,

Aya Shirai-Doull on behalf of Kirsteen Mackay (South Australian Government Architect)

Aya Shirai-Doull
Senior Design Advisor
Office for Design + Architecture SA
Department of Planning, Transport and Infrastructure
T 08 8402 1853 (internal 21853) • **E** aya.shirai-doull@sa.gov.au
Level 1, 26-28 Leigh Street, Adelaide SA 5000 • GPO Box 1533 Adelaide SA 5001 • DX 171 • www.dpti.sa.gov.au

collaboration . honesty . excellence . enjoyment . respect

We acknowledge and respect Aboriginal peoples as South Australia's first peoples and nations, we recognise Aboriginal peoples as traditional owners and occupants of land and waters in South Australia and that their spiritual, social, cultural and economic practices come from their traditional lands and waters; and they maintain their cultural and heritage beliefs, languages and laws which are of ongoing importance; We pay our respects to their ancestors and to their Elders.

CITY OF ADELAIDE

25 Pirie Street, Adelaide
GPO Box 2252 Adelaide
South Australia 5001

T (08) 8203 7203
F (08) 8203 7575
W cityofadelaide.com.au

ABN 20 903 762 572

Enquiries: **Matthew Field 8203 7023**
Reference: **S10/43/2018**

26 September 2018
045

State Commission Assessment Panel
GPO Box 1815
Adelaide SA 5001

Attention: State Commission Assessment Panel

Dear Sir/Madam

Application: S10/43/2018
Applicant: 29 TWIN STREET P/L
Address: 27-29 Twin Street, ADELAIDE SA 5000
Description: Construct a 38 Storey student accommodation building accommodating a total of 510 students on vacant land.

Council has the following comment(s) to make on the above application:

TECHNICAL COMMENTS

URBAN ELEMENTS

There are no urban elements related objections to this development, subject to the following matter/s being addressed:

- The proposed development works will impact on the urban elements within the proximity of the development site. In front of the development site, there is an existing CoA Parking Sign that will require relocation, and coordination with our parking area to meet Council's requirements.
- All modifications requiring temporary removal / relocation / provision of temporary urban elements assets shall meet Council's requirements shall be carried out to meet Council's requirements and all costs borne directly by the developer.
- Final location of equipment will be determined by CoA giving consideration to existing site constraints etc.
- All assets to be handed over to CoA to own and maintain shall be constructed to Council's requirements and applicable legislative standards and requirements. All

equipment gifted shall be Councils standards and applicable requirements.

- All works to be undertaken to be fit for purpose in the public realm.

LIGHTING / ELECTRICAL / CCTV

There are no lighting related objections to this development, subject to the following matter/s being addressed:

- The proposed development works may will not impact on the public lighting within the proximity of the development site. The existing street lighting in Twin Street is owned and maintained by SA Power Networks and consists of wall mounted lighting and overhead cabling that spans between them. There is a SAPN street light installed to the front of the building.
- All works to be undertaken to be fit for purpose in the public realm.
- All modifications requiring temporary removal / relocation / provision of temporary lighting / reinstatement of existing Council and/or SA Power Network's public lighting (including associated infrastructure such as cabling etc.) shall meet Council's requirements. The works shall be carried out to meet Council's requirements and all costs borne directly by the developer.
- 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.) shall meet Council's requirements. The works shall be carried out to meet Council's requirements and all costs borne directly by the developer.
- Obtrusive Lighting – Lighting design and installation to be fully compliant with Australian Standard - AS 4282 – 1997 Control of the obtrusive effects of outdoor lighting. Sign off by consultant required to confirm compliance. In addition, provide relevant lighting calculation grid detailing property boundary lines for Councils review and records.
- If new canopies are to be constructed as part of these works, then lighting to meet CoA's under veranda requirements shall be installed.
- Existing underground services shall be identified and marked in the locality prior to undertaking any excavation works.
- All damage to CoA's infrastructure, including damage to public lighting and u/g 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.

- If building mounted lit signage is to be installed onto the building, further review and approvals will be required by City of Adelaide.
- CCTV camera owned and maintained by City of Adelaide, for any modifications to this asset contact City of Adelaide for further advice on process. SAPOL monitor this camera and will also be required to be consulted with for their approval.
- All assets to be handed over to CoA to own and maintain shall be constructed to Council's requirements and applicable legislative standards and requirements. All equipment gifted shall be Councils standards and applicable requirements.

TRAFFIC / TRANSPORT

There are no traffic/transport related objections to this development, subject to the following matter/s being addressed:

- No information has been provided in relation to the current demands on and any current restrictions in the right of way for loading associated with the Hotel and it is therefore difficult to comment whether use of this space for regular waste collection will be feasible.
- It is unclear how the space between the Gays Arcade building and this building is proposed to be treated and concern is raised from a CPTED perspective.
- The perspective shows an upright kerb in the footpath and paving extending into the public walkway. Any proposed changes to public realm require a separate application to Council, further referral would be required to our Design Team. Consistency in the materiality of footpaths is generally preferred and the whole of Twin Street currently has bitumen footpaths. Installation of an upright kerb in the walkway is not supported and would significantly impact on the accessibility of Twin Street.
- There does not appear to be sufficient bicycle parking provided. Comparison to a site adjacent the railway station is not a reasonable comparison and is only a single source of data. Given known variabilities across sites, a single example and survey does not provide sufficient grounds for a rate of demand applied to all sites.
- Concern is raised in relation to the delineation of the porte

cochere exit from Ibis and building set back area – it is not clear whether this could be perceived as a continuation of road

- It is unclear whether the canopy out to footpath as shown on mezzanine is a permanent structure – the perspectives appear to show something mechanical?
- The building materials chosen should be assessed in terms of potential for creating sun glare issues.
- Wayfinding for people with vision impairment should be considered in relation to interactions with the outdoor dining area. Outdoor dining would need to be restricted to within property boundary and would not be supported on the public walkway at this location due to width/functionality constraints.
- The swept paths for loading access do not appear to include sufficient clearance to buildings and impact on the on-street parking/loading areas, which are a premium in this location.

WASTE

Council Administration is satisfied with the collection process due to the constraints of access. However, the following observations are made for further consideration:

- The management of bin rotation under the chute system needs to be addressed. It appears there will be only one bin of each stream under the chute. With the size of the development the volumes will be sizable and exceed more than one bin each per day and therefore require regular rotation.
- Volume sensors and automated rotation of bins under the chute should be investigated to prevent overflowing issues.
- Wash down areas for bins and appropriate drainage are recommended to maintain sanitary conditions.

PLANNING RELATED COMMENTS

Council Administration has not undertaken a thorough planning assessment of the proposal but makes the following comments in relation to the proposed development:

RESIDENTIAL AMENITY

While additional communal areas have been incorporated into the development, the residents of the 6 bed / 6 bath apartment layouts will rely heavily on the communal areas for relaxation outside of their apartments. Approximately half of the apartments adopt this model. This will likely result in a substantial proportion of residents that will be heavily reliant on these spaces. Should the communal / amenity areas be

	used or fully occupied, the residents will have limited opportunities for relaxation / leisure outside of their rooms. The 5 bed / 5 Bath apartments layout used from levels 18 – 34 provide greater amenity, through the provision of a shared dining and lounge area, within the apartment and provide greater choice for residents. This model is considered to provide a higher degree of amenity for residents and should be adopted on all levels of the development.
ACTIVE STREET FRONTAGES	The provision of an active use at ground floor to Twin Street is commended.
ENCROACHMENTS	The development proposes the following encroachments: Awning projecting 1 metre beyond the boundary and extending for a length of 4 metres. The encroachment appears to meet the Encroachment Policy however the elevations are at a scale that make it difficult to confirm. A detailed section of the lower levels is required to confirm this.

SUGGESTED CONDITIONS

It is requested that the following conditions be included should SCAP resolve to grant consent to the development:

1. **The finished floor level of the ground floor level at the entry points to the development shall match the existing footpath unless otherwise agreed to by the Council in writing.**

   Reason: The Corporation of the City of Adelaide WILL NOT adjust footpath levels to suit finished building levels. The existing footpath levels are to be retained and entrance levels of the development must meet the existing back of footpath.

2. **Lighting shall be installed to the awning at street level on Twin Street in accordance with Council's guideline entitled "Under Verandah/Awning Lighting Guidelines" at all times to the reasonable satisfaction of the Council and prior to the occupation or use of the Development. Such lighting shall be operational during the hours of darkness at all times to the reasonable satisfaction of Council.**

   Reason: To ensure the development does not create public areas with insufficient lighting.

3. **The connection of any storm water discharge from the Land to any part of the Council's underground drainage system shall be undertaken in accordance with the Council Policy entitled 'Adelaide City Council Storm Water Requirements' which is attached to this consent to the reasonable satisfaction of the Council.**

   Reason: To ensure that adequate provision is made for the collection and dispersal of

stormwater.

4. **The applicant or the person having the benefit of this consent shall ensure that all storm water run-off from the awning is collected and then discharged to the storm water discharge system. All down pipes affixed to the Development which are required to discharge the awning storm water run-off shall be installed within the property boundaries of the Land to the reasonable satisfaction of the Council.**

   Reason: To ensure that stormwater runoff does not have an adverse impact upon the public realm.

SUGGESTED ADVICES

It is requested that the following advices be included should SCAP resolve to grant consent to the development:

1. Development Approval will not be granted until Building Rules Consent and an Encroachment Consent have been obtained. A separate application must be submitted for such consents. No building work or change of classification is permitted until the Development Approval has been obtained.
2. An Encroachment Permit will be separately issued for the proposed encroachment into the public realm when Development Approval is granted. In particular, your attention is drawn to the following:
   - An annual fee may be charged in line with the Encroachment Policy.
   - Permit renewals are issued on an annual basis for those encroachments that attract a fee.
   - Unauthorised encroachments will be required to be removed.
3. Any activity in the public realm, whether it be on the road or footpath, requires a City Works Permit. 48 hour's notice is required before commencement of any activity.

   The City Works Guidelines detailing the requirements for various activities, a complete list of fees and charges and an application form can all be found on Council's website at www.cityofadelaide.com.au

   When applying for a City Works Permit you will be required to supply the following information with the completed application form:

   - A Traffic Management Plan (a map which details the location of the works, street, property line, hoarding/mesh, lighting, pedestrian signs, spotters, distances etc.);
   - Description of equipment to be used;
   - A copy of your Public Liability Insurance Certificate (minimum cover of $20 Million required);
   - Copies of consultation with any affected stakeholders including businesses or residents.

   Please note: Upfront payment is required for all city works applications.

   Applications can be received by Council via the following:

Email: cityworks@cityofadelaide.com.au

Fax: 8203 7674

In Person: 25 Pirie Street, Adelaide

4. Section 779 of the Local Government Act provides that where damage to Council footpath / kerbing / road pavement / verge occurs as a result of the development, the owner / applicant shall be responsible for the cost of Council repairing the damage.

Yours faithfully

Rebecca Rutschack
MANAGER - PLANNING ASSESSMENT

MASTERPLAN
TOWN + COUNTRY PLANNERS

9 October 2018

Department of Planning, Transport and Infrastructure
GPO Box 1815
ADELAIDE SA 5000

Attention: Karl Woehle

Dear Karl,

Re: Development Application 020/A067/18
for Multi-Level Student Accommodation
at 29 Twin Street, Adelaide

We are in receipt of the Adelaide City Council Technical comments received in response to the application lodged for assessment.

Thank you for the opportunity to respond to the queries and comments raised in respect to the design of the proposed development.

We note in the first instance that:

- there are no Urban Elements related objections that would not ordinarily be addressed as conditions of consent or notes attached to any consent issued;
- there are no Lighting Electrical or CCTV related objections that would not ordinarily be addressed as conditions of consent or notes attached to any consent issued;
- there are no Traffic/Transport related objections that would not ordinarily be addressed as conditions of consent or notes attached to any consent issued, with any specific points of clarification provided below;
- Council is satisfied with the proposed waste management collection process given the constraints of the site; and
- Council commends the active use at ground floor to Twin Street.

The points of clarification sought by Council have been addressed below:

- **The current demands on the Right of Way for loading of the Hotel and how this might impact on the use for waste collection associated with the Student Accommodation.**

Details have been provided by IBIS confirming the following service delivery movements within the 'Right of Way' as follows:

- deliveries into the lane start from approximately 05:00 and will run through typically until 22:00;
- the bulk of these deliveries are between 10:00 – 15:00; and
- on average, the lane would be accessed up to 15 times per day, with the largest vehicle being the rubbish collection truck.

INFRAPLAN have confirmed that the Right of Way does not service the Porte Cochere and may be expected to accommodate up to 50 movements per day. They conclude therefore that:

> *"Including waste movements, it is likely that servicing and deliveries be on the order of 5 movements or less per day. In conjunction with the up to 15 movements expected per day for the Ibis Hotel, it is likely that there will be minimal risk of two vehicles needing access at one time."*

- **The Space between Gays Arcade and the Building.**

We respectfully advise, that the area will be lit (24/7) with security lighting to avoid loitering and the increase in street activation in this location will be sufficient passive surveillance of this area.

- **Upright Kerb in Walkway.**

The upright kerb is only shown in the 3D renders and does not represent the final design details of any kerbing associated with public realm updates required as a result of the proposed development. The final public realm design will be undertaken in consultation with ACC and include where necessary appropriate footpath access ramps.

- **In-sufficient Bicycle parking.**

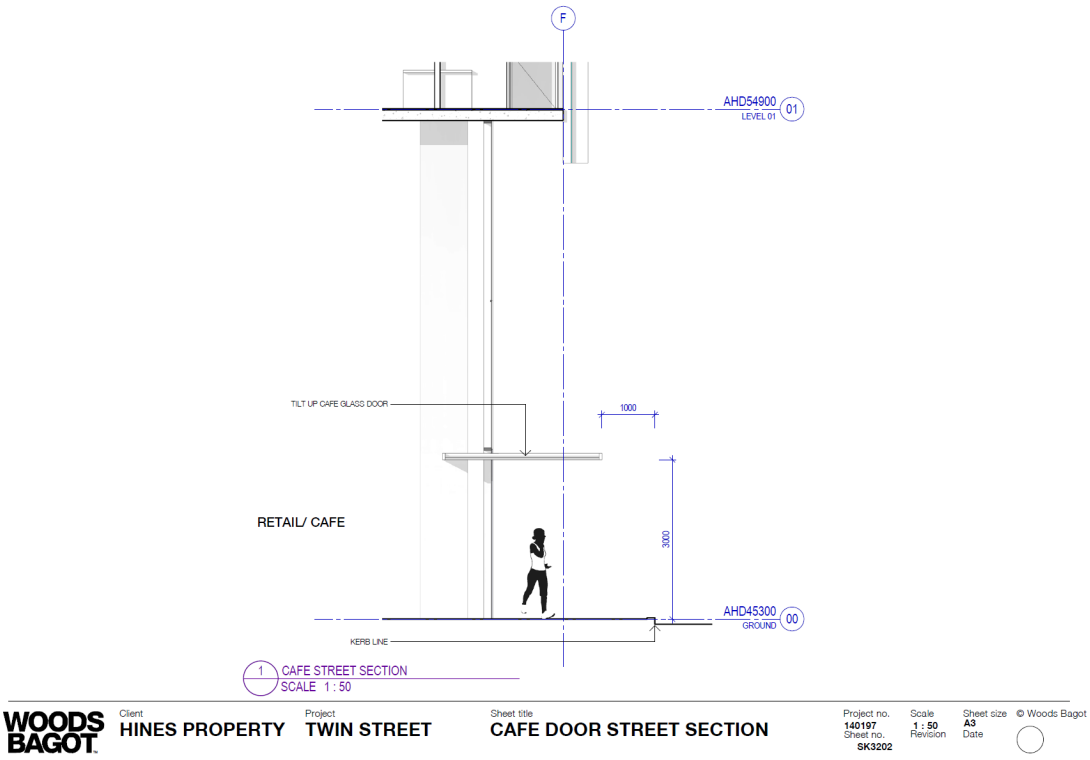
Previous accepted analysis of bicycle parking rates accepted by SCAP (nee DAC) acknowledged an acceptable rate of 1 space per 38.6 beds. The proposed development well exceeds the provision of bicycle parking based on the above rate providing approximately 1 space per 20 beds. In the absence of any specific development plan provisions specifically pertinent to student accommodation we respectfully submit that sufficient bicycle storage has been provided within the building.

- **Delineation of the Porte-cochere and the setback of the building and question whether this could be perceived as a continuation of the road.**

We respectfully advise that the existing and proposed built form of building and structural columns will not lead to this perception.

- **Unclear of the clearances associated with the canopy over the footpath.**

Please find **attached** details of the proposed tilt up glass door prepared by Woods Bagot (that forms the only small canopy encroachment over the footpath. We note that it satisfies the Encroachment operating guidelines for the City of Adelaide with a minimum vertical clearance above the back of foot path level of 3.0 metres and minimum horizontal clearance from the kerb face of 1.0 metre.



- **Swept paths for clearances to buildings and impact on on-street parking/loading areas.**

INFRAPLAN have reviewed the truck manoeuvring and have provided the following response in their updated Traffic Report (**attached**):

> *"The MRV is clear from building facades and can make the turning movements wholly within the kerb bounds. The reverse in does slightly encroach on the on-street parking to the immediate north of the property access but it is very minor at 100mm and would maintain clearance from a typical vehicle parked. Furthermore, being a loading zone during from 6am-10am and a no parking zone outside of these times, these spaces are unlikely to be occupied and if they are, the reversing vehicle could undertake an extra step in the movement. For this reason, the movement is considered to be appropriate."*

- **Additionally, it is noted that service vehicles currently undertake this manoeuvre to service the ibis Hotel. Amenity associated with 6 bed – 6 bath cluster room layouts and reliance on communal areas within the building.**

We refer to our previous response to the ODASA comments in respect to this matter where the mix of accommodation options within the building is important to provide a range of price points for students.

Accordingly, we submit that the points of clarification sought by Adelaide City Council have been sufficiently addressed.

Please do not hesitate to contact the undersigned on 8193 5600 should you require any further information.

Yours sincerely

Greg Vincent
MasterPlan SA Pty Ltd

enc: As listed.

cc: Hines Property (via email: jdhines@hinesproperty.com.au).
RCP (via email: BColmer@rcp.net.au).

MASTERPLAN
TOWN + COUNTRY PLANNERS

14 September 2018

Department of Planning, Transport and Infrastructure
GPO Box 1815
ADELAIDE SA 5000

Attention: Karl Woehle

Dear Karl,

Re: Development Application for Multi-Level Student Accommodation
29 Twin Street, Adelaide

We are in receipt of the ODASA statutory referral comments received in response to the application lodged for assessment.

Thank you for the opportunity to respond to the queries and comments raised in respect to the design of the proposed development.

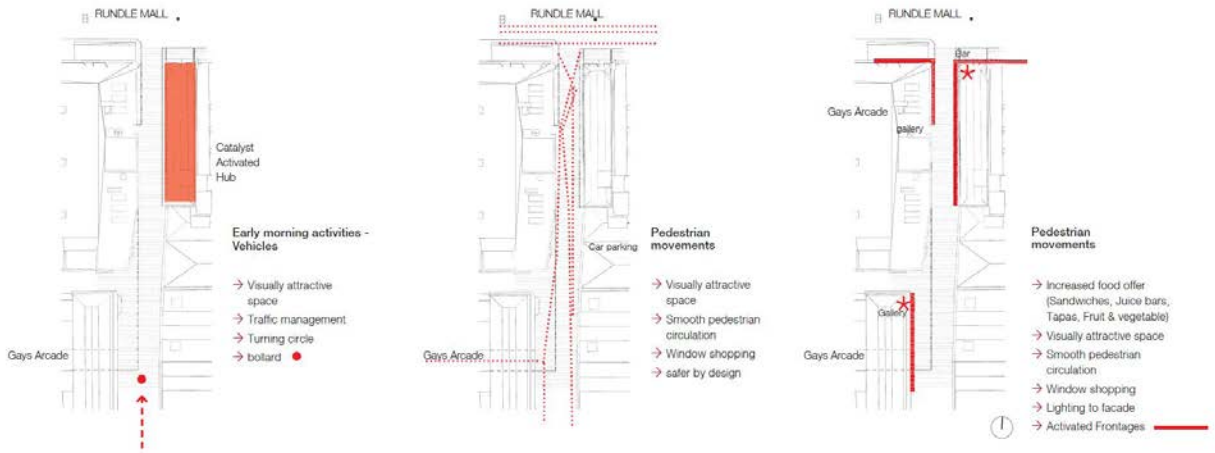
We note the areas of outstanding concern expressed by the Government Architect in which they seek further consideration in the design include:

- a well-considered urban interface response along the Twin Street frontage;
- high quality external material for the building and external spaces;
- development of the façade design and details particularly to address the southern elevation to ensure that the stair core is fully integrated in the façade treatment of the building viewed in the round;
- refinement of the architectural expression relating to the framed openings to the community shared amenity spaces "is at odds with the overall building expression";
- continued development of the communal facility strategy;
- review the configuration of the twin share rooms (where no private space is provided) and six bedroom/six bathroom clusters to increase the available space in the kitchen dining for six students; and
- the GA is yet to be convinced by the proposed vertical fins to control the solar load to the East North and Western elevations.

The project team has considered the pertinent comments and offers the following points of clarification supported by additional illustrations associated with the optional internal furniture layout for the twin share rooms, clarification of the design intent and integration of the core in the southern elevation and the glazing calculations to each of the elevations.

Development of a well-considered urban interface response along Twin Street

The design team has been cognisant of the Adelaide City Council's Rundle Mall master plan which includes specific reference to Twin Street as a catalyst project. We note however that the catalyst project relates to the northern part of Twin Street (from north of Gays Arcade to Rundle Mall). The key element of the catalyst project is the activation of the street frontages and facilitation of pedestrian movement.



The design of the proposed development at ground floor, while not within the northern portion of the identified catalyst precinct will deliver an active street frontage reinforcing the identified opportunities for twin street as a shared pedestrian movement corridor. The ground floor frontage creates the active café environment while the secure line for students is setback behind the foyer/café. The three-level void adjacent the street frontage establishes an activation at the street alignment and from within where the Student Hub overlooks and integrates with the public environment below within the building.

Woods Bagot have provided the additional comments in respect to this matter:

- through careful management of building services, back of house, easements and other considerations. The twin street proposal has crafted a significant amount of activity to a high-quality standard on Twin Street; and
- any access to amenity designed for students needs to be accessed and managed via the implementation of a clear secure line. Safety of the students' needs to be maintained as a priority, any access directly from the street to student provided amenity (not the café) creates an unmanageable solution in the eyes of many student accommodation operators.

High Quality external materials for the building and external spaces

We note ODASA's comments and confirm the approach to delivering high quality external a materials and finishes as expressed in the Statement by Woods Bagot below:

- the brief from Hines Property was to provide a high quality outcome that 'looks and feels more like a hotel' and breaks the mould of traditional student accommodation standard design.

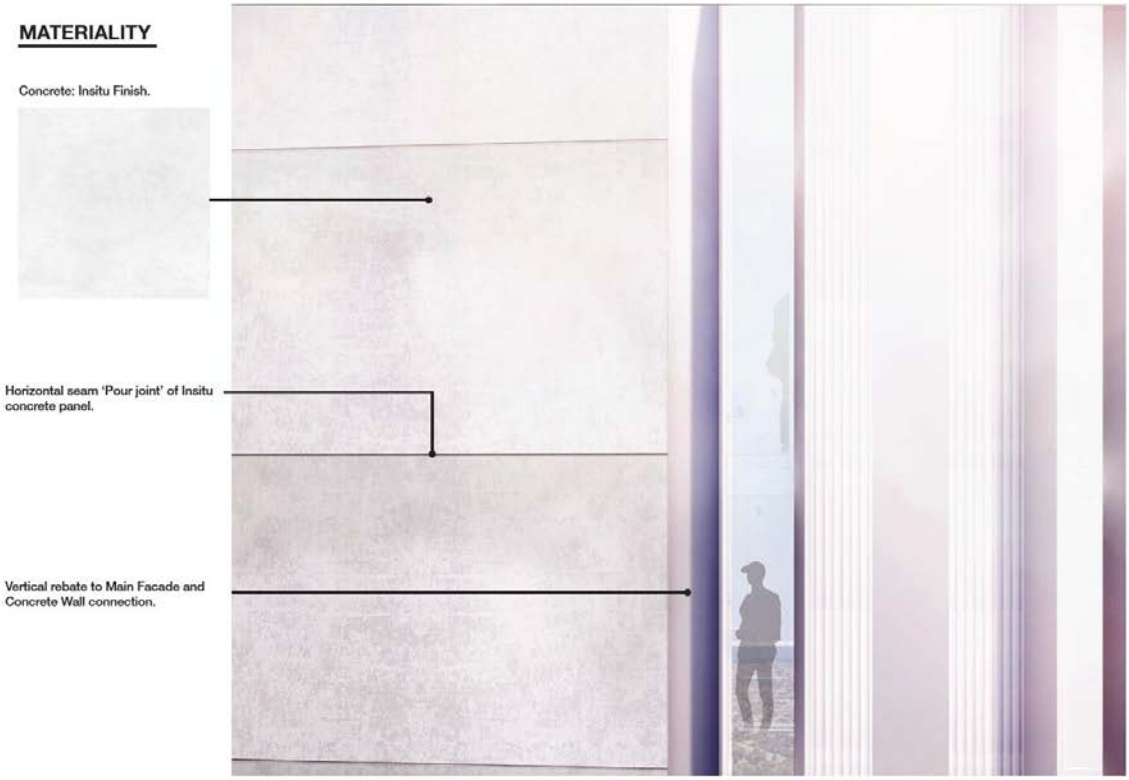
We welcome a condition of consent requiring the final details of the materials and finishes to be submitted to SCAP following the design development stage of the proposed building.

Development of the façade design and details particularly to address the southern elevation to ensure that the stair core is fully integrated in the façade treatment of the building viewed in the round.

It is inherent in the functionality of the building on a small site that form will need to reflect the function and in this instance the location of the core adjacent the southern boundary of the site is best positioned to maximise access to northern light, and centrally located on the façade to maximise the floor space efficiency of the building allowing the façade treatment to turn the corner of all four elevations of the building. In the main, the lift core is screened by the adjacent IBIS Styles Hotel and is visible only above the adjacent building when viewed from southerly vantage points adding the vertical building elements expressed on the facade of the building. The vertical louvres to the floor by floor plant on the western side of the lift and stair core also reinforce the vertical nature of the façade materiality.

Woods Bagot have provided additional detail in the construction of the core creating vertical rebates either side of the core to further reinforce the verticality in the facades, while also providing relief through the expressed horizontal seam 'pour joints'.

01 **Design Update**
South Elevation Views



Please refer to the greater details provided by Woods Bagots in the **attached** Diagrams and updated elevations and through their description of the details below:

- the proposal sits on a tight inner block with limited access and space;
- the design maximises the views to the north, east and west to ensure every apartment/room achieves a minimum of direct sunlight hours;
- this has resulted in the core being located on the façade to the south which also enables us to integrate building services more efficiently;
- we propose that the insitu concrete southern wall of the core remain exposed with the horizontal 'pour joints' of the concrete providing level by level articulation. The core is expressed internally in the same manner creating an honest 3-dimensional representation of the entire core within the building;
- a negative joint where the core wall and the main façade meet further expresses the core as its own vertical element adding further to overall building articulation; and
- We note that the view of half of the building is obstructed by the adjacent IBIS hotel and that there existing many examples around the city where this condition exists.

Refinement of the Architectural expression with the view to achieving a coherent overall expression.

The buildings architectural response to incorporating student amenity at multiple levels through the building, presents horizontal bands in the façade at each of the student amenity levels where the vertical fins stop at these levels. The framed amenity pods respond to the function of the space on each of these levels creating an outdoor terrace at each of the student amenity levels linked with indoor student amenity space to defined the different functionality of the spaces within the building and greater articulation of the northern elevation.

The strategic incorporation and omission of the vertical fins at the student amenity levels as evident in the image below creates an impression of the student amenity pods on the eastern and western elevations responding to the projection of an integrated and coherent expression of the façade over the whole of the building.

This is further reinforced with the horizontal seam "pour Joints" in core in the southern façade.

Woods Bagot's architectural comments associated with their design intent for the coherent architectural expressions are detailed below:

- the framed openings are consistent with what we had shown during the ODASA design review process;
- based on the ODASA design review feedback we doubled the amount of amenity and have developed a strategy for how each space could be used subject to student accommodation operator input;
- a key goal for the project is to minimise the number of floor types to assist in enhancing the buildability and operations;
- the building architecturally is to appear as a simple extrusion with a series of amenity spaces that take advantage of the northerly aspect and the unique site constraints;
- the location of the amenity spaces also help create views of Rundle Mall and the parts of our city which are the focus of our many cultural programs; and
- the fins integrated into the façade respond to the location of the amenity boxes further 3-dimensionalising the overall architectural expression.

Continued development of the Communal facility strategy.

We note ODASA's acknowledgement of the communal facilities strategy to provide communal spaces for students at various levels conveniently located vertically throughout the building. Overall, seven distinct communal facility spaces are provided for the benefit of the students, at Levels M2, 5, 11, 17, 23, 29 and the roof terrace. Accordingly, there is one communal amenity space accessible vertically every six floors providing for a variety of spaces available to facilitate passive and active indoor and outdoor spaces within the secure environment of the building.

These spaces are also reinforced with the publicly accessible café at the ground floor and by the available public open space and services afforded within the City given the proposed buildings location conveniently located to the Public Open Space of Hindmarsh Square and the services and facilities afforded by Rundle Mall on its door step.

Woods Bagot developed and documented a clear strategy articulated for each space which was illustrated in the DA submission with floor plans and 3D images of each space.

The amenity strategy and final designation of the specific activities in each of the communal spaces will be subject to the successful student accommodation operator.

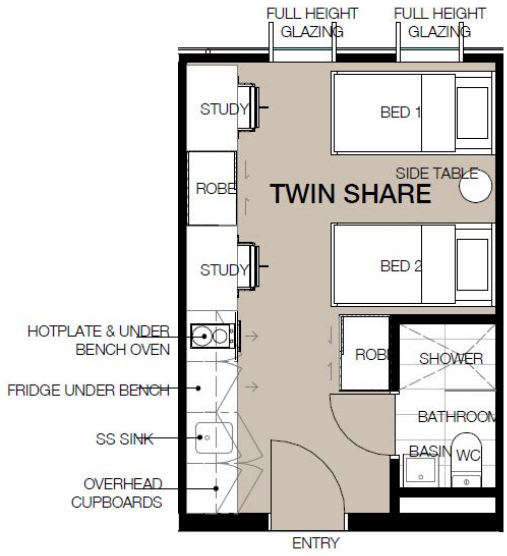
Review the configuration of the twin share rooms (Where no private space is provided) and six bedrooms/six bathroom clusters to increase the available space in the kitchen dining for six students. (WB to advise on requirements.)

The proponent has provided a mix of accommodation options within the building designed to cater for diverse needs of student on varying budgets. The six bedroom/six bathroom accommodation cluster provides the most affordable product and accommodates the privacy for students sleeping and studying needs while providing them with communal cooking and meals facilities.

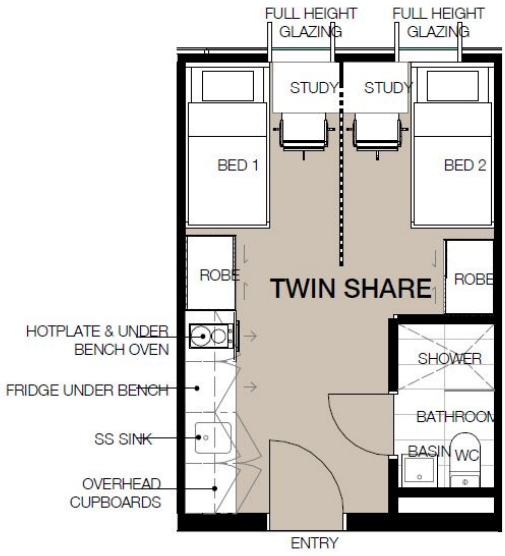
The communal amenity strategy adopted vertically across the building provides for the students' passive recreations and social needs encouraging interaction beyond their accommodation cluster environment and accordingly no additional living space is proposed within these clusters.

The twin share internal layout of furniture has been reviewed following ODASA comments and an optional layout has been identified allowing for the introduction of a privacy screen should the final operator consider this advantageous (see below).

We submit that internal layout of furniture within the twin share room is not a fundamental planning consideration and the room size and configuration can accommodate a flexible approach to meet the needs of the operator and occupants.



Integrated Study



Privacy Screen

We note Woods Bagot's design response below:

- the drawings demonstrate how the furniture can be laid out and is subject to student accommodation operator input;
- please refer to the attached drawings indicating a potential alternative layout for the twin share room which may achieve more perceived privacy;
- the six bed six bath has been designed with a specific response to the growing student accommodation market and the experienced student accommodation advice we have received;
- the modular planning design enables the building to adapt to other configurations in the event that relevant student accommodation market research is undertaken; and
- this will only be amended based on experienced student accommodation operator advice.

Incorporation of ESD principles, including effective solar management - The GA is yet to be convinced by the proposed vertical fins to control the solar load to the East North and Western elevations.

It is important to consider that the façade provides for a layering of treatment to achieve the necessary solar management and as identified below in the comments by Woods Bagot, the vertical fins only provide one of these layers to assist with solar management. The response by Woods Bagot below reinforces the layering of solar management on the façade in line with the glazing calculations for each façade of the building.

01 Design Update
Glazing Calculations

Glazing Calculations %

EAST FACADE	solid	= 1033 m²	= 67 %
	glazed =	515 m²	= 33 %
WEST FACADE	solid	= 938 m²	= 61 %
	glazed =	610 m²	= 39 %
NORTH FACADE	solid	= 1955 m²	= 67 %
	glazed =	984 m²	= 33 %
SOUTH FACADE	solid	= 2599 m²	= 83 %
	glazed =	526 m²	= 17 %
TOTAL			
	solid	= 6525 m²	= 71 %
	glazed =	2635 m²	= 29 %

- The fins integrated into the façade provide benefit in shading the façade, providing important texture and acting as a filter to each opening.
- In addition, the fins primarily assist in 3-dimensionalising the impact of the amenity boxes which add to the whole expression of the building.
- The integrated fins are not the primary solution to managing heat load on the building.
- Heat load is managed through a highly thermally efficient facade. Reading the comments, it appears the GA is under the impression that the building is primarily glass. The glass elements of the building only represent 29 percent of the overall building making the remaining 71 percent of the building highly affective thermally.
- This has been achieved through careful planning and selection of window locations within the highly repeatable floor plates.
- The overall façade (and roof) will perform to the requirements set out in Part J of the Building Code of Australia.

Accordingly, we submit that the design, as reinforced through the application documents and supported by the attached additional information following further consideration of the matters raised by ODASA provides sufficient details for SCAP to determine the application.

Please do not hesitate to contact the undersigned on 8193 5600 should you require any further information.

Yours sincerely

Greg Vincent
MasterPlan SA Pty Ltd

enc: As listed.

cc: Hines Group (via email: jdhines@hinesproperty.com.au).
RCP (via email: BColmer@rcp.net.au).

MASTERPLAN
TOWN + COUNTRY PLANNERS

25 September 2018

Department of Planning, Transport and Infrastructure
GPO Box 1815
ADELAIDE SA 5000

Attention: Karl Woehle

Dear Karl,

Re: Development Application 020/A067/18
for Multi-Level Student Accommodation
at 29 Twin Street, Adelaide

We are in receipt of the Heritage SA statutory referral comments received in response to the application lodged for assessment.

Thank you for the opportunity to respond to the queries and comments raised in respect to the design of the proposed development.

We note in the first instance the Department supports the design concept in principle and comments that:

- The three metre setback at the lower levels adjacent the western boundary and the offset of the northern boundary avoid direct built interface with Adelaide and Gays Arcades;
- With reference to the twin street context, the proposed design is considered to positively and satisfactorily to the visual presence and scale of Gays Arcade;
- "The verticality of the prominent entrance portal against the horizontal proportion of the café opening provides a balanced composition to the glazed base while injecting visual interest and human scale into its relationship with Gay's Arcade.";
- "The tower's separation distance from the Adelaide Arcade frontages will be sufficient to maintain a reasonable streetscape presence for the historic building's silhouette".

The areas of outstanding concern expressed by the Government Architect in which they seek further consideration in the design include:

- The better visual integration of the northern elevation's five amenity pods into the horizontal banding of the tower shaft.

- The potential impact of environmental performance factors on the façade design concept.
- The materiality and architectural expression of the southern elevation's central core.

With respect, and having regard to the commentary within the Heritage SA referral comments, the project team is unsure how the above comments directly relate or impact on the heritage context or directly impact on the adjacent heritage buildings noting that Heritage SA have stated:

> *"With a setback of approximately 35 metres from Grenfell Street and 80 metres from Rundle Mall, it is anticipated that the tower's separation distance from the Adelaide Arcade frontages will be sufficient to maintain a reasonable streetscape presence for the historic building's silhouette, notwithstanding the dramatic impact the tower will have on the skyline."*
>
> *"The consistent design language of the four facades is appropriate for a prominent building seen 'in the round', and the tower's slender proportions (in conjunction with a high quality of facade design, materials and finishes) are conducive to achieving an elegant and refined visual character as a backdrop to the Adelaide Arcade frontages."*

The afore-mentioned concerns expressed by Heritage SA and included as a recommended Reserved matter are specific design related matters that have been previously identified by ODASA and responded to in our correspondence dated 14 September.

We note that the SCAP need only have "Regard" to the comments of the Heritage SA on this matter under Schedule 8 Clause 5(1) of the Development Regulation, 2008 and that these matters have been previously addressed with minor design revisions which do not now warrant the inclusion of a reserved matter.

In specific response to the comments regarding the contrasting black frame of the amenity pods; this is a specific architectural approach employed by the designers, to clearly contrast with the balance of the facade and identify the use and function of these spaces as different from the residential accommodation rooms.

The client acknowledges the proximity of the State Heritage listed properties to the potential construction site and accordingly accepts the need for a construction vibration plan in accordance with proposed condition 2.

The client welcomes the opportunity through design development stage to clarify the base material and finish for the façade element described as '*white corrugated panel*' and accordingly are supportive of proposed condition 3.

Accordingly, we submit that the design, as reinforced through the application documents and supported by the attached additional information following further consideration of the matters raised by ODASA provides sufficient details for SCAP to determine the application.

Please do not hesitate to contact the undersigned on 8193 5600 should you require any further information.

Yours sincerely

Greg Vincent
MasterPlan SA Pty Ltd

enc: As listed.

cc: Hines Group (via email: jdhines@hinesproperty.com.au).
RCP (via email: BColmer@rcp.net.au).

Central Business Policy Area 13

Introduction

The Objectives and Principles of Development Control that follow apply to the Policy Area as shown on Maps Adel/49, 50, 55 and 56. They are additional to those expressed for the Zone and, in cases of apparent conflict, take precedence over the Zone provisions. In the assessment of development, the greatest weight is to be applied to satisfying the Desired Character for the Policy Area.

DESIRED CHARACTER

The Central Business Policy Area is the pre-eminent economic, governance and cultural hub for the State. This role will be supported by educational, hospitality and entertainment activities and increased opportunities for residential, student and tourist accommodation.

Buildings will exhibit innovative design approaches and produce stylish and evocative architecture, including tall and imposing buildings that provide a hard edge to the street and are of the highest design quality. A wide variety of design outcomes of enduring appeal are expected. Complementary and harmonious buildings in individual streets will create localised character and legible differences between streets, founded on the existing activity focus, building and settlement patterns, and street widths.

OBJECTIVES

Objective 1: A concentration of employment, governance, entertainment and residential land uses that form the heart of the City and central place for the State.

Objective 2: Development of a high standard of design and external appearance that integrates with the public realm.

Objective 3: Development that contributes to the Desired Character of the Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

1 Development should contribute to the area's role and function as the State's premier business district, having the highest concentration of office, retail, mixed business, cultural, public administration, hospitality, educational and tourist activities.

2 Buildings should be of a height that ensures airport operational safety is not adversely affected.

3 To enable an activated street level, residential development or similar should be located above ground floor level.

CAPITAL CITY ZONE

Introduction

The Desired Character, Objectives and Principles of Development Control that follow apply in the whole of the Capital City Zone shown on Maps Adel/17 to 20, 23 to 26 and 29 to 31. They are additional to those expressed for the whole of the Council area and in cases of apparent conflict, take precedence over the more general provisions. In the assessment of development, the greatest weight is to be applied to satisfying the Desired Character for the Zone.

DESIRED CHARACTER

This Zone is the economic and cultural focus of the State and includes a range of employment, community, educational, tourism and entertainment facilities. It is anticipated that an increased population within the Zone will complement the range of opportunities and experiences provided in the City and increase its vibrancy.

The Zone will be active during the day, evening and late night. Licensed entertainment premises, nightclubs and bars are encouraged throughout the Zone, particularly where they are located above or below ground floor level to maintain street level activation during the day and evening.

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

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

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

New development will achieve high design quality by being:

(a) **Contextual** – so that it responds to its surroundings, recognises and carefully considers the adjacent built form, and positively contributes to the character of the immediate area.

(b) **Durable** – by being fit for purpose, adaptable and long lasting, and carefully considers the existing development around it.

(c) **Inclusive** – by integrating landscape design to optimize pedestrian and cyclist usability, privacy, and equitable access, and also promote the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimize security and safety both internally and into the public realm, for occupants and visitors alike.

(d) **Sustainable** – by integrating sustainable systems into new buildings and the surrounding landscape design to improve environmental performance and minimise energy consumption.

(e) **Amenable** – by providing natural light and ventilation to habitable spaces.

Contemporary juxtapositions will provide new settings for heritage places. Innovative design is expected in areas of identified street character with an emphasis on contemporary architecture that responds to site context and broader streetscape, while supporting optimal site development. The addition of height, bulk and massing of new form should be given due consideration in the wider context of the proposed development.

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

Adelaide's pattern of streets and squares

The distinctive grid pattern of Adelaide will be reinforced through the creation of a series of attractive boulevards as shown on Concept Plan Figures CC/1 and 2. These boulevards will provide a clear sense of arrival into the City and be characterised by buildings that are aligned to the street pattern, particularly at ground level.

Views to important civic landmarks, the Park Lands and the Adelaide Hills will be retained as an important part of the City's charm and character.

The City's boulevards, terraces and Squares will be developed as follows:

(a) North Terrace will be reinforced as an important pedestrian promenade and cultural boulevard that provides an important northern edge to the City square mile.

(b) King William Street will be enhanced as the City's principal north-south boulevard and will be reinforced as the City's commercial spine.

(c) Grote Street-Wakefield Street will be enhanced as the City's principal east-west boulevard and will be developed to provide a strong frame that presents a sense of enclosure to the street.

(d) East Terrace will be characterised by buildings that maximise views through to the Park Lands and provide a distinct City edge.

(e) West Terrace will be reinforced as the western 'gateway' to the City centre and will form an imposing frontage to the western City edge. Buildings will be constructed to the front and side boundaries, and designed to maximise views through to the Park Lands. Corner sites at the junctions of West Terrace and the major east-west streets will be developed as strongly defined visual gateways to the City. This will provide an imposing frontage to the western edge of the City, which comprises a mixture of commercial, showroom and residential development.

(f) Pulteney and Morphett streets are key north-south boulevards. A sense of activation and enclosure of these streets will be enhanced through mixed use development with a strong built form edge. Pulteney Street will include residential, office and institutional uses, and retail activities. These boulevards will become important tree-lined commercial corridors.

(g) Currie, Grenfell, Franklin and Flinders streets, as wider east-west boulevards provide important entry points to the City. Currie and Grenfell streets will become a key focus for pedestrians, cycling and public transport. These streets also provide long views to the hills as their closing vistas and these view corridors should remain uncluttered.

(h) Victoria, Hindmarsh and Light Squares will have a continuous edge of medium to high-scale development that frames the Squares and increases ground level activity.

The Zone also includes a number of Main Street areas, encompassing Rundle Mall, Rundle Street, Hindley Street and Gouger Street, which are envisaged to have a wide range of retail, commercial and community uses that generate high levels of activity. These areas will have an intimately scaled built form with narrow and frequent building frontages. These areas are shown on Concept Plan Figures CC/1 and 2.

Development fronting North Terrace, King William Street, Wakefield Street, Grote Street, the Squares, and in the Main Street Policy Area, will reflect their importance though highly contextual design that reflects and responds to their setting and role.

Minor streets and laneways will have a sense of enclosure (a tall street wall compared to street width) and an intimate, welcoming and comfortable pedestrian environment with buildings sited and composed in a way that responds to the buildings' context. There will be a strong emphasis on ground level activation through frequent window openings, land uses that spill out onto the footpath, and control of wind impacts.

Development in minor streets and laneways with a high value character will respond to important character elements and provide a comfortable pedestrian environment, particularly in the following streets: Gray, Leigh, Union, Chesser, Coromandel, Tucker, Cardwell, Kenton, Market, Ruthven, Cannon, Tatham, Benthem streets, Murrays Lane and Wright Court.

A comprehensive, safe and convenient movement network throughout the City will develop, focusing on the provision of linkages on both public and private land between important destinations and public

transport. A high quality system of bicycle or shared pedestrian and bicycle routes will be established within the Zone.

OBJECTIVES

General

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

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

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

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

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

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

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

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

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

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

Affordable housing
Aged persons accommodation
Community centre
Consulting room
Convention centre
Dwelling
Educational establishment
Emergency services facility
Hospital
Hotel
Indoor recreation centre
Licensed entertainment premises
Library
Motel
Office
Pre-school
Personal service establishment
Place of worship
Serviced apartment
Restaurant
Residential flat building
Student accommodation
Shop or group of shops
Tourist accommodation

2 Land uses that are typically closed during the day should be designed to maximise daytime and evening activation at street level and be compatible with surrounding land uses, in particular residential development.

3 Low impact industries should be located outside the Central Business Policy Area and have minimal off-site impacts with respect to noise, air, water and waste emissions, traffic generation and movement.

4 Development listed as non-complying is generally inappropriate.

Form and Character

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

Design and Appearance

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

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

(a) the use of high quality materials and finishes. This may be achieved through the use of materials such as masonry, natural stone, prefinished materials that minimise staining, discolouring or deterioration, and avoiding painted surfaces particularly above ground level;

(b) providing a high degree of visual interest though articulation, avoiding any large blank facades, and incorporating design features within blank walls on side boundaries which have the potential to be built out;

(c) ensuring lower levels are well integrated with, and contribute to a vibrant public realm; and

(d) ensuring any ground and first floor level car parking elements are sleeved by residential or non-residential land uses (such as shops, offices and consulting rooms) to ensure an activated street frontage.

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

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

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

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

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

(a) relates to the scale and context of adjoining built form;

(b) provides a human scale at street level;

(c) creates a well-defined and continuity of frontage;

(d) gives emphasis and definition to street corners to clearly define the street grid;

(e) contributes to the interest, vitality and security of the pedestrian environment;

(f) maintains a sense of openness to the sky for pedestrians and brings daylight to the street; and

(g) achieves pedestrian comfort by minimising micro climatic impacts (particularly shade/shelter, wind tunnelling and downward drafts);

other than (h) or (i):

(h) in the Central Business Policy Area;

(i) where a lesser (or zero) upper level setback and/or podium height is warranted to correspond with and complement the form of adjacent development, in which case alternative design solutions should be included to achieve a cohesive streetscape, provided parts (b) to (g) are still achieved.

13 Buildings north of Rundle Mall, Rundle Street, Hindley Street and Gouger Street should have a built form that incorporates slender tower elements, spaces between buildings or other design techniques that enable sunlight access to the southern footpath.

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

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

16 Development that exceeds the maximum building height shown in Concept Plan Figures CC/1 and 2, and meets the relevant quantitative provisions should demonstrate a significantly higher standard of design outcome in relation to qualitative policy provisions including site configuration that acknowledges and responds to the desired future character of an area but that also responds to adjacent conditions (including any special qualities of a locality), pedestrian and cyclist amenity, activation, sustainability, and public realm and streetscape contribution.

The Squares (Victoria, Hindmarsh and Light)

17 Outdoor eating and drinking facilities associated with cafés and restaurants are appropriate ground floor uses and should contribute to the vitality of the Squares and create a focus for leisure.

18 Buildings fronting the Squares should:

(a) provide a comfortable pedestrian and recreation environment by enabling direct sunlight to a minimum of 75 percent of the landscaped part of each Square at the September equinox; and

(b) reinforce the enclosure of the Squares with a continuous built-form with no upper level set-backs.

The Terraces (North, East and West)

19 Development along the terraces should contribute to a continuous built form to frame the City edge and activate the Park Lands.

20 Development along North Terrace should reinforce the predominant scale and 'City wall' character of the Terrace frontage.

Building Height

21 Development should not exceed the maximum building height shown in Concept Plan Figures CC/1 and 2 unless;

(a) it is demonstrated that the development reinforces the anticipated city form in Concept Plan Figures CC/1 and 2, and

(b) only if:

(i) at least two of the following features are provided:

(1) the development provides an orderly transition up to an existing taller building or prescribed maximum building height in an adjoining Zone or Policy Area;

(2) the development incorporates the retention, conservation and reuse of a building which is a listed heritage place;

(3) high quality universally accessible open space that is directly connected to, and well integrated with, public realm areas of the street;

(4) universally accessible, safe and secure pedestrian linkages that connect through the development site as part of the cities pedestrian network on Map Adel/1 (Overlay 2A);

(5) on site car parking does not exceed a rate of 0.5 spaces per dwelling, car parking areas are adaptable to future uses or all car parking is provided underground;

(6) residential, office or any other actively occupied use is located on all of the street facing side of the building, with any above ground car parking located behind;

(7) a range of dwelling types that includes at least 10% of 3+ bedroom apartments;

(8) more than 15 per cent of dwellings as affordable housing.

(ii) plus all of the following sustainable design measures are provided:

(1) a rooftop garden covering a majority of the available roof area supported by services that ensure ongoing maintenance;

(2) a greenroof, or greenwalls / façades supported by services that ensure ongoing maintenance;

(3) innovative external shading devices on all of the western side of a street facing façade; and

(4) higher amenity through provision of private open space in excess of minimum requirements, access to natural light and ventilation to all habitable spaces and common circulation areas.

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

(a) a lower building height is necessary to achieve compliance with the Commonwealth Airports (Protection of Airspace) Regulations;

(b) the site is adjacent to the City Living Zone or the Adelaide Historic (Conservation) Zone and a lesser building height is required to manage the interface with low-rise residential development;

(c) the site is adjacent to a heritage place, or includes a heritage place;

(d) the development includes the construction of a building in the same, or substantially the same, position as a building which was demolished, as a result of significant damage caused by an event, within the previous 3 years where the new building has the same, or substantially the same, layout and external appearance as the previous building.

Interface

23 Development should manage the interface with the City Living Zone or the Adelaide Historic (Conservation) Zone in relation to building height, overshadowing, massing, building proportions and traffic impacts and should avoid land uses, or intensity of land uses, that adversely affect residential amenity.

24 Development on all sites on the southern side of Gouger Street - Angas Street and adjacent to a northern boundary of the City Living Zone or the Adelaide Historic (Conservation) Zone should not exceed 22 metres in building height unless the Council Wide overshadowing Principles of Development Control are met.

25 Parts of a development that exceed the prescribed maximum building height shown on Concept Plan Figures CC/1 and 2 that are directly adjacent to the City Living, Main Street (Adelaide) and Adelaide Historic (Conservation) Zone boundaries should be designed to minimise visual impacts on sensitive uses in the adjoining zones and to maintain the established or desired future character of the area. This may be achieved through a number of techniques such as additional setback, avoiding tall sheer walls, centrally locating taller elements, providing variation of light and shadow through articulation to provide a sense of depth and create visual interest, and the like.

Movement

26 Pedestrian movement should be based on a network of pedestrian malls, arcades and lanes, linking the surrounding Zones and giving a variety of north-south and east-west links.

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

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

29 Car parking should be provided in accordance with Table Adel/7.

30 Multi-level car parks should locate vehicle access points away from the primary street frontage wherever possible and should not be located:

(a) within any of the following areas:

(i) the Core Pedestrian Area identified in Map Adel/1 (Overlays 2, 2A and 3)

(ii) on frontages to North Terrace, East Terrace, Rundle Street, Hindley Street, Currie Street, Waymouth Street (east of Light Square), Victoria Square or King William Street;

(b) where they conflict with existing or projected pedestrian movement and/or activity;

(c) where they would cause undue disruption to traffic flow; and

(d) where it involves creating new crossovers in North Terrace, Rundle Street, Hindley Street, Currie Street and Waymouth Street (east of Light Square), Grenfell Street and Pirie Street (west of Pulteney Street), Victoria Square, Light Square, Hindmarsh Square, Gawler Place and King William Street or access across primary City access and secondary City access roads identified in Map Adel/1 (Overlay 1).

31 Multi-level, non-ancillary car parks are inappropriate within the Core Pedestrian Area as shown on Map Adel/1 (Overlays 2, 2A and 3).

32 Vehicle parking spaces and multi-level vehicle parking structures within buildings should:

(a) enhance active street frontages by providing land uses such as commercial, retail or other non-car park uses along ground floor street frontages;

(b) complement the surrounding built form in terms of height, massing and scale; and

(c) incorporate façade treatments along major street frontages that are sufficiently enclosed and detailed to complement neighbouring buildings consistent with the Desired Character of the locality.

Advertising

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

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

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

36 In Chesser Street, French Street and Coromandel Place advertisements should be small and preferably square and should not be located more than 3.7 metres above natural ground level or an abutting footpath or street. However, advertisements in these streets may be considered above 3.7 metres at locations near the intersections with major streets.

37 Advertisements on the Currie Street frontages between Topham Mall and Gilbert Place and its north-south prolongation should be of a size, shape and location complementary to the desired townscape character, with particular regard to the following:

(a) On the southern side of Currie Street, advertisements should be fixed with their underside at a common height, except where the architectural detailing of building façades precludes it. At this 'canopy' level advertisements should be of a uniform size and fixed without the support of guy wires. Where architectural detailing permits, advertisements may mark the major entrances to buildings along the southern side of Currie Street with vertical projecting advertisements 1.5 metres high by 1.2 metres wide at, or marginally above, the existing canopy level. Painted wall or window signs should be restrained.

(b) On the northern side of Currie Street, advertisements should be of a uniform fixing height and consistent dimensions to match those prevailing in the area.

PROCEDURAL MATTERS

Complying Development

38 Complying developments are prescribed in Schedule 4 of the *Development Regulations 2008*.

In addition, the following forms of development are assigned as **complying**:

(a) Other than in relation to a State heritage place, Local heritage place (City Significance), or Local heritage place, work undertaken within a building which does not involve a change of use or affect the external appearance of the building;

(b) Temporary depot for Council for a period of no more than 3 months where it can be demonstrated that appropriate provision has been made for:

(i) dust control;

(ii) screening, including landscaping;

(iii) containment of litter and water; and

(iv) securing of the site.

(c) Change in the use of land from a non-residential use to an office, shop or consulting room (excluding any retail showroom, adult entertainment premises, adult products and services premises or licensed premises).

Non-complying Development

39 The following kinds of development are **non-complying**:

A change in use of land to any of the following:

Amusement machine centre

Advertisements involving any of the following:

(a) third party advertising except on Hindley Street, Rundle Mall or on allotments at the intersection of Rundle Street and Pulteney Street, or temporary advertisements on construction sites;

(b) advertisements located at roof level where the sky or another building forms the background when viewed from ground level;

(c) advertisements in the area bounded by West Terrace, Grote Street, Franklin Street and Gray Street;

(d) animation of advertisements along and adjacent to the North Terrace, King William Street and Victoria Square frontages.

Total demolition of a State Heritage Place (as identified in Table Adel/1).

Vehicle parking except:

(a) where it is ancillary to an approved or existing use;

(b) it is a multi-level car park located outside the Core Pedestrian Area as indicated on Map Adel/1 (Overlay 2, 2A and 3); or

(c) it is within an existing building located outside the Core Pedestrian Area as indicated on Map Adel/1 (Overlay 2, 2A and 3).

Public Notification

40 Categories of public notification are prescribed in Schedule 9 of the *Development Regulations 2008*.

In addition, the following forms of development, or any combination of (except where the development is non-complying), are assigned:

(a) **Category 1**, public notification not required:

All forms of development other than where it is assigned Category 2.

(b) **Category 2**, public notification required. Third parties do not have any appeal rights.

Any development where the site of the development is adjacent land to land in the City Living Zone or Adelaide Historic (Conservation) Zone and it exceeds 22 metres in building height.

Note: For Category 3 development, public notification is required. Third parties may make written representations, appear before the relevant authority on the matter, and may appeal against a development consent. This includes any development not classified as either Category 1 or Category 2.

Council Wide

Student Accommodation

OBJECTIVE

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

PRINCIPLES OF DEVELOPMENT CONTROL

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

(a) residents have access to common or shared facilities that enable a more efficient use of space (such as cooking, laundry, common rooms or communal open space);

(b) every living room has a window that provides an external outlook and maximises access to natural light;

(c) the development is designed to enable easy adaptation or reconfiguration to accommodate an alternative use;

(d) the development is designed to maximise opportunities to access natural ventilation and natural light;`

(e) private open space is provided in the form of balconies and/or substituted with communal open space (including rooftop gardens, common rooms or the like) that is accessible to all occupants of the building; and

(f) the internal layout and facilities provide sufficient space and amenity for the requirements of student life and promote social interaction.

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

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

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

Crime Prevention Through Urban Design

OBJECTIVES

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

(a) ensures that land uses are integrated and designed to facilitate natural surveillance;

(b) promotes building and site security; and

(c) promotes visibility through the incorporation of clear lines of sight and appropriate lighting.

PRINCIPLES OF DEVELOPMENT CONTROL

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

(a) promote natural surveillance of the public realm, including open space, car parks, pedestrian routes, service lanes, public transport stops and residential areas, through the design and location of physical features, electrical and mechanical devices, activities and people to maximise visibility by:

(i) orientating windows, doors and building entrances towards the street**,** open spaces, car parks, pedestrian routes and public transport stops;

(ii) avoiding high walls, blank facades, carports and landscaping that obscures direct views to public areas;

(iii) arranging living areas, windows, pedestrian paths and balconies to overlook recreation areas, entrances and car parks;

(iv) positioning recreational and public space areas so they are bound by roads on at least two road frontages or overlooked by development;

(v) creating a complementary mix of day and night-time activities, such as residential, commercial, recreational and community uses, that extend the duration and level of intensity of public activity;

(vi) locating public toilets, telephones and other public facilities with direct access and good visibility from well-trafficked public spaces;

(vii) ensuring that rear service areas and access lanes are either secured or exposed to surveillance; and

(viii) ensuring the surveillance of isolated locations through the use of audio monitors, emergency telephones or alarms, video cameras or staff eg by surveillance of lift and toilet areas within car parks.

(b) provide access control by facilitating communication, escape and path finding within development through legible design by:

(i) incorporating clear directional devices;

(ii) avoiding opportunities for concealment near well travelled routes;

(iii) closing off or locking areas during off-peak hours, such as stairwells, to concentrate access/exit points to a particular route;

(iv) use of devices such as stainless steel mirrors where a passage has a bend;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

To maximise security and safety, buildings should be designed to minimise access between roofs, balconies and windows of adjacent buildings.

85 Security features should be incorporated within the design of shop fronts to complement the design of the frontage and allow window shopping out of hours. If security grilles are provided, these should:

(a) be transparent and illuminated to complement the appearance of the frontage;

(b) provide for window shopping; and

(c) allow for the spill of light from the shop front onto the street.

Solid shutters with less than 75 percent permeability are not acceptable.

86 Public toilets should be designed and located to:

(a) promote the visibility of people entering and exiting the facility by avoiding recessed entrances and dense shrubbery which obstructs passive surveillance;

(b) limit opportunities for vandalism through the use of vandal proof lighting on the public toilet buildings and nearby;

(c) avoid features which facilitate loitering, such as seating or telephones immediately adjacent the structure; and

(d) maximise surveillance through location near public transport links, pedestrian and cyclist networks.

Noise Emissions

OBJECTIVES

Objective 26: Development that does not unreasonably interfere with the desired character of the locality by generating unduly annoying or disturbing noise.

Objective 27: Noise sensitive development designed to protect its occupants from existing noise sources and from noise sources contemplated within the relevant Zone or Policy Area and that does not unreasonably interfere with the operation of non-residential uses contemplated within the relevant Zone or Policy Area.

PRINCIPLES OF DEVELOPMENT CONTROL

Noise Sources

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.

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

94 To ensure minimal disturbance to residents:

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

(i) after 10.00pm; and

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

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

Noise Receivers

95 Noise sensitive development should incorporate adequate noise attenuation measures into their design and construction to provide occupants with reasonable amenity when exposed to noise

sources such as major transport corridors (road, rail, tram and aircraft), commercial centres, entertainment premises and the like, and from activities and land uses contemplated in the relevant Zone and Policy Area provisions.

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

Waste Management

OBJECTIVE

Objective 28: Development which supports high local environmental quality, promotes waste minimisation, re-use and recycling, encourages waste water, grey water and stormwater re-use and does not generate unacceptable levels of air, liquid or solid pollution.

PRINCIPLES OF DEVELOPMENT CONTROL

101 A dedicated area for on-site collection and sorting of recyclable materials and refuse should be provided within all new development.

102 A dedicated area for the collection and sorting of construction waste and the recycling of building materials during construction as appropriate to the size and nature of the development should be provided and screened from public view.

103 Development greater than 2 000 square metres of total floor area should manage waste by:

(a) containing a dedicated area for the collection and sorting of construction waste and recyclable building materials;

(b) on-site storage and management of waste;

(c) disposal of non-recyclable waste; and

(d) incorporating waste water and stormwater re-use including the treatment and re-use of grey water.

104 Development should not result in emission of atmospheric, liquid or other pollutants, or cause unacceptable levels of smell and odour which would detrimentally affect the amenity of adjacent properties or its locality. Land uses such as restaurants, shops, cafés or other uses that generate smell and odour should:

(a) ensure extraction flues, ventilation and plant equipment are located in appropriate locations that will not detrimentally affect the amenity of adjacent occupiers in terms of noise, odours and the appearance of the equipment;

(b) ensure ventilation and extraction equipment and ducting have the capacity to clean and filter the air before being released into the atmosphere; and

(c) ensure the size of the ventilation and extraction equipment is suitable and has the capacity to adequately cater for the demand generated by the potential number of patrons.

Energy Efficiency

OBJECTIVE

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

PRINCIPLES OF DEVELOPMENT CONTROL

All Development

106 Buildings should provide adequate thermal comfort for occupants and minimise the need for energy use for heating, cooling and lighting by:

(a) providing an internal day living area with a north-facing window, other than for minor additions*, by:

(i) arranging and concentrating main activity areas of a building to the north for solar penetration; and

(ii) placing buildings on east-west allotments against or close to the southern boundary to maximise northern solar access and separation to other buildings to the north.

(b) efficient layout, such as zoning house layout to enable main living areas to be separately heated and cooled, other than for minor additions;

(c) locating, sizing and shading windows to reduce summer heat loads and permit entry of winter sun;

(d) allowing for natural cross ventilation to enable cooling breezes to reduce internal temperatures in summer;

(e) including thermal insulation of roof, walls, floors and ceilings and by draught proofing doors, windows and openings;

(f) ensuring light colours are applied to external surfaces that receive a high degree of sun exposure, but not to an extent that will cause glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles;

(g) providing an external clothes line for residential development; and

(h) use of landscaping.

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

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

(a) appropriate orientation of the building by:

(i) maximising north/south facing facades;

(ii) designing and locating the building so the north facade receives good direct solar radiation;

(iii) minimising east/west facades to protect the building from summer sun and winter winds;

(iv) narrow floor plates to maximise the amount of floor area receiving good daylight; and/or

(v) minimising the ratio of wall surface to floor area.

(b) window orientation and shading;

* Minor additions have a floor area less than 50 percent of the existing dwelling and do not include a day living area.

(c) adequate thermal mass including night time purging to cool thermal mass;

(d) appropriate insulation by:

(i) insulating windows, walls, floors and roofs; and

(ii) sealing of external openings to minimise infiltration.

(e) maximising natural ventilation including the provision of openable windows;

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

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

109 Orientation and pitch of the roof should facilitate the efficient use of solar collectors and photovoltaic cells.

110 Buildings, where practical, should be refurbished, adapted and reused to ensure an efficient use of resources.

111 New buildings should be readily adaptable to future alternative uses.

112 Selection of internal materials for all buildings should be made with regard to internal air quality and ensure low toxic emissions, particularly with respect to paint and joinery products.

Renewable Energy

OBJECTIVES

Objective 31: The development of renewable energy facilities, such as wind and biomass energy facilities, in appropriate locations.

Objective 32: Renewable energy facilities located, sited, designed and operated to avoid or minimise adverse impacts and maximise positive impacts on the environment, local community and the State.

PRINCIPLES OF DEVELOPMENT CONTROL

116 Renewable energy facilities, including wind farms, should be located, sited, designed and operated in a manner which avoids or minimises adverse impacts and maximises positive impacts on the environment, local community and the State.

117 Renewable energy facilities, including wind farms, and ancillary developments should be located in areas that maximise efficient generation and supply of electricity.

118 Renewable energy facilities, including wind farms, and ancillary development such as substations, maintenance sheds, access roads and connecting power-lines (including to the National Electricity Grid) should be located, sited, designed and operated in a manner which:

(a) avoids or minimises detracting from the character, landscape quality, visual significance or amenity of the area;

(b) utilises elements of the landscape, materials and finishes to minimise visual impact;

(c) avoids or minimises adverse impact on areas of native vegetation, conservation, environmental, geological, tourism or built or natural heritage value;

(d) does not impact on the safety of water or air transport and the operation of ports, airfields and designated landing strips;

(e) avoids or minimises nuisance or hazard to nearby property owners/occupiers, road users and wildlife by way of:

(i) shadowing, flickering, reflection and blade glint impacts;

(ii) noise;

(iii) interference to television and radio signals;

(iv) modification to vegetation, soils and habitats; and

(v) bird and bat strike.

Micro-climate and Sunlight

OBJECTIVES

Objective 33: Buildings which are designed and sited to be energy efficient and to minimise micro-climatic and solar access impacts on land or other buildings.

Objective 34: Protection from rain, wind and sun without causing detriment to heritage places, street trees or the integrity of the streetscape.

PRINCIPLES OF DEVELOPMENT CONTROL

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

120 Development should be designed and sited to ensure an adequate level of daylight, minimise overshadowing of buildings, and public and private outdoor spaces, particularly during the lunch time hours.

121 Development should not significantly reduce daylight to private open space, communal open space, where such communal open space provides the primary private open space, and habitable rooms in adjacent City Living Zone, Adelaide Historic (Conservation) Zone and North Adelaide Historic (Conservation) Zone.

122 Glazing on building facades should not result in glare which produces discomfort or danger to pedestrians, occupants of adjacent buildings and users of vehicles.

123 Buildings within the Core and Primary Pedestrian Areas identified in Map Adel/1 (Overlays 2, 2A and 3), unless specified otherwise within the relevant Zone or Policy Area, should be designed to provide weather protection for pedestrians against rain, wind and sun. The design of canopies, verandahs and awnings should be compatible with the style and character of the building and adjoining buildings, as well as the desired character, both in scale and detail.

124 Weather protection should not be introduced where it would interfere with the integrity or heritage value of heritage places or unduly affect street trees.

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

Stormwater Management

OBJECTIVES

Objective 35: Development which maximises the use of stormwater.

Objective 36: Development designed and located to protect stormwater from pollution sources.

Surface water (inland, marine, estuarine) and ground water has the potential to be detrimentally affected by water run-off from development containing solid and liquid wastes. Minimising and possibly eliminating sources of pollution will reduce the potential for degrading water quality and enable increased use of stormwater for a range of applications with environmental, economic and social benefits.

Objective 37: Development designed and located to protect or enhance the environmental values of receiving waters.

Objective 38: Development designed and located to prevent erosion.

Development involving soil disturbance may result in erosion and subsequently sedimentation and pollutants entering receiving waters. Design techniques should be incorporated during both the construction and operation phases of development to minimise the transportation of sediment and pollutants off-site.

Objective 39: Development designed and located to prevent or minimise the risk of downstream flooding.

PRINCIPLES OF DEVELOPMENT CONTROL

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

127 Development affecting existing stormwater management systems should be designed and located to improve the quality of stormwater, minimise pollutant transfer to receiving waters, and protect downstream receiving waters from high levels of flow.

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

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

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

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

Infrastructure

OBJECTIVES

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

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

PRINCIPLES OF DEVELOPMENT CONTROL

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

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

134 Infrastructure and utility services, including provision for the supply of water, gas and electricity should be put in common trenches or conduits.

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

(a) electricity supply;

(b) water supply;

(c) drainage and stormwater systems;

(d) effluent disposal systems;

(e) formed all-weather public roads;

(f) telecommunications services; and

(g) gas services.

Heritage and Conservation

OBJECTIVES

Objective 42: Acknowledge the diversity of Adelaide's cultural heritage from pre-European occupation to current time through the conservation of heritage places and retention of their heritage value.

Objective 43: Development that retains the heritage value and setting of a heritage place and its built form contribution to the locality.

Objective 44: Continued use or adaptive reuse of the land, buildings and structures comprising a heritage place.

Objective 45: Recognition of Aboriginal sites, items and areas which are of social, archaeological, cultural, mythological or anthropological significance.

PRINCIPLES OF DEVELOPMENT CONTROL

General

136 Development of a heritage place should conserve the elements of heritage value as identified in the relevant Tables.

137 Development affecting a State heritage place (Table Adel/1), Local heritage place (Table Adel/2), Local heritage place (Townscape) (Table Adel/3) or Local heritage place (City Significance) (Table Adel/4), including:

(a) adaptation to a new use;

(b) additional construction;

(c) part demolition;

(d) alterations; or

(e) conservation works;

should facilitate its continued or adaptive use, and utilise materials, finishes, setbacks, scale and other built form qualities that are complementary to the heritage place.

138 A local heritage place (as identified in Tables Adel/2, 3 or 4) or the Elements of Heritage Value (as identified in Table Adel/2) should not be demolished unless it can be demonstrated that the place, or those Elements of Heritage Value that are proposed to be demolished, have become so distressed in condition or diminished in integrity that the remaining fabric is no longer capable of adequately representing its heritage value as a local heritage place.

140 Development on land adjacent to a heritage place in non-residential Zones or Policy Areas should incorporate design elements, including where it comprises an innovative contemporary design, that:

(a) utilise materials, finishes, and other built form qualities that complement the adjacent heritage place; and

(b) is located no closer to the primary street frontage than the adjacent heritage place.

142 Development that abuts the built form/fabric of a heritage place should be carefully integrated, generally being located behind or at the side of the heritage place and without necessarily replicating historic detailing, so as to retain the heritage value of the heritage place.

Advertising

144 Advertisements or signs on the site of a heritage place should be located to complement, rather than dominate or conceal, the appearance and detailing of the heritage place by being:

(a) integrated with architectural elements of the heritage place, including within parapets or wall panels, and at canopy level or within fascias, end panels or windows; and

(b) below the silhouette of the heritage place.

Built Form and Townscape

OBJECTIVES

Objective 46: Reinforcement of the city's grid pattern of streets through:

(a) high rise development framing city boulevards, the Squares and Park Lands

(b) vibrant main streets of a more intimate scale that help bring the city to life

(c) unique and interesting laneways that provide a sense of enclosure and intimacy.

Objective 47: Buildings should be designed to:

(a) reinforce the desired character of the area as contemplated by the minimum and maximum building heights in the Zone and Policy Area provisions;

(b) maintain a sense of openness to the sky and daylight to public spaces, open space areas and existing buildings;

(c) contribute to pedestrian safety and comfort; and

(d) provide for a transition of building heights between Zone and Policy Areas where building height guidelines differ.

Objective 48: Development which incorporates a high level of design excellence in terms of scale, bulk, massing, materials, finishes, colours and architectural treatment.

PRINCIPLES OF DEVELOPMENT CONTROL

5 Where development significantly exceeds quantitative policy provisions, it should demonstrate a significantly higher standard of design outcome in relation to qualitative policy provisions including pedestrian and cyclist amenity, activation, sustainability and public realm and streetscape contribution.

Height, Bulk and Scale

PRINCIPLES OF DEVELOPMENT CONTROL

6 Development should be of a high standard of design and should reinforce the grid layout and distinctive urban character of the City by maintaining a clear distinction between the following:

(a) the intense urban development and built-form of the town acres in the Capital City, Main Street, Mixed Use, City Frame and City Living Zones;

(b) the less intense and more informal groupings of buildings set within the landscaped environment of the Institutional Zones;

(c) the historic character of the Adelaide and North Adelaide Historic (Conservation) Zones and groups of historic housing within the City Living Zone; and

(d) the open landscape of the Park Lands Zone.

7 The height and scale of development and the type of land use should reflect and respond to the role of the street it fronts as illustrated on Map Adel/1 (Overlay 1).

8 The height, scale and massing of buildings should reinforce:

(a) the desired character, built form, public environment and scale of the streetscape as contemplated within the Zone and Policy Area, and have regard to:

(i) maintaining consistent parapet lines, floor levels, height and massing with existing buildings consistent with the areas desired character;

(ii) reflecting the prevailing pattern of visual sub-division of neighbouring building frontages where frontages display a character pattern of vertical and horizontal sub-divisions; and

(iii) avoiding massive unbroken facades.

(b) a comfortable proportion of human scale at street level by:

(i) building ground level to the street frontage where zero set-backs prevail;

(ii) breaking up the building facade into distinct elements;

(iii) incorporating art work and wall and window detailing; and

(iv) including attractive planting, seating and pedestrian shelter.

9 Where possible, large sites should incorporate pedestrian links and combine them with publicly accessible open space.

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

11 Buildings within the Capital City Zone should be built to the street edge to reinforce the grid pattern, create a continuity of frontage and provide definition and enclosure to the public realm whilst contributing to the interest, vitality and security of the pedestrian environment.

Composition and Proportion

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

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

(b) clearly defining ground, middle and roof top levels.

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

(a) frontages creating clearly defined edges;

(b) generating new compositions and points of interest;

(c) introducing elements for future neighbouring buildings; and

(d) emphasising the importance of the building according to the street hierarchy.

Articulation and Modelling

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

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

Materials, Colours and Finishes

16 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.

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

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

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

Sky and Roof Lines

OBJECTIVE

Objective 49: Innovative and interesting skylines which contribute to the overall design and performance of the building.

PRINCIPLES OF DEVELOPMENT CONTROL

20 Where a prevailing pattern of roof form assists in establishing the desired character of the locality, new roof forms should be complementary to the shape, pitch, angle and materials of adjacent building roofs.

21 Buildings should be designed to incorporate well designed roof tops that:

(a) reinforce the desired character of the locality, as expressed in the relevant Zone or Policy Area;

(b) enhance the skyline and local views;

(c) contribute to the architectural quality of the building;

(d) provide a compositional relationship between the upper-most levels and the lower portions of the building;

(e) provide an expression of identity;

(f) articulate the roof, breaking down its massing on large buildings to minimise apparent bulk;

(g) respond to the orientation of the site; and

(h) create minimal glare.

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

(a) be designed to minimise the visual impact; and

(b) be screened from view, including the potential view looking down or across from existing or possible higher buildings, or be included in a decorative roof form that is integrated into the design of the building.

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

(a) rainwater tanks for water conservation;

(b) roof surfaces orientated, angled and of suitable material for photovoltaic applications; and/or

(c) “green” roofs (ie roof top gardens structurally capable of supporting vegetation) or water features.

Active Street Frontages

OBJECTIVES

Objective 50: Development that enhances the public environment and, where appropriate provides activity and interest at street level, reinforcing a locality's desired character.

Objective 51: Development designed to promote pedestrian activity and provide a high quality experience for City residents, workers and visitors by:

(a) enlivening building edges;

(b) creating welcoming, safe and vibrant spaces;

(c) improving perceptions of public safety through passive surveillance; and

(d) creating interesting and lively pedestrian environments.

PRINCIPLES OF DEVELOPMENT CONTROL

24 Development should be designed to create active street frontages that provide activity and interest to passing pedestrians and contribute to the liveliness, vitality and security of the public realm.

25 Commercial buildings should be designed to ensure that ground floor facades are rich in detail so they are exciting to walk by, interesting to look at and to stand beside.

Landscaping

OBJECTIVE

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

PRINCIPLES OF DEVELOPMENT CONTROL

26 Landscaping should:

(a) be selected and designed for water conservation;

(b) form an integral part of the design of development; and

(c) be used to foster human scale, define spaces, reinforce paths and edges, screen utility areas and enhance the visual amenity of the area.

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

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

29 Landscaping between the road and dwellings should be provided to screen and protect the dwellings from dust and visual impacts of the road.

Advertising

OBJECTIVE

Objective 56: Outdoor advertisements that are designed and located to:

(a) reinforce the desired character and amenity of the locality within which it is located and rectify existing unsatisfactory situations;

(b) be concise and efficient in communicating with the public, avoiding a proliferation of confusing and cluttered displays or a large number of advertisements; and

(c) not create a hazard.

PRINCIPLES OF DEVELOPMENT CONTROL

30 Advertisements should be designed to respect and enhance the desired character and amenity of the locality by the means listed below:

(a) the scale, type, design, location, materials, colour, style and illumination of any advertisements should be compatible with the design and character of the buildings and land to which it is related, and should be in accordance with provisions for the Zone and Policy Area in which it is situated and any relevant adjacent Zones or Policy Areas;

(b) advertisements should be integrated with the architectural form, style and colour of buildings and wherever possible, requirements for advertisements should be considered in the design of new buildings;

(c) advertisements should be artistically interesting in terms of graphics and construction with intricacy and individuality in design encouraged while maintaining consistency in design and style where co-ordinated advertisements are appropriate;

(d) structural supports should be concealed from public view or of minimal visual impact;

(e) advertisements on individual premises should be co-ordinated in terms of type and design and should be limited in number to minimize visual clutter;

(f) advertisements should be displayed on fascia signs or located below canopy level;

(g) advertisements on buildings or sites occupied by a number of tenants should be co-ordinated, complementary and the number kept to a minimum; and

(h) advertisements on or adjacent to a heritage place should be designed and located to respect the heritage value of the heritage place.

Transport and Access

Access and Movement

OBJECTIVE

Objective 60: Access to and movement within the City that is easy, safe, comfortable and convenient with priority given to pedestrian and cyclist safety and access.

PRINCIPLES OF DEVELOPMENT CONTROL

224 Development should provide safe, convenient and comfortable access and movement.

225 Vehicle access points along primary and secondary city access roads and local connector roads, as shown on Map Adel/1 (Overlay 1) should be restricted.

Pedestrian Access

OBJECTIVES

Objective 61: Development that promotes the comfort, enjoyment and security of pedestrians by providing shelter and reducing conflict with motor vehicles.

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

Objective 63: Safe and convenient design of and access to buildings and public spaces, particularly for people with disabilities**.**

PRINCIPLES OF DEVELOPMENT CONTROL

226 Development should reflect the significance of the paths and increase the permeability of the pedestrian network identified within Map Adel/1 (Overlay 2) by ensuring:

(a) pedestrians are not disrupted or inconvenienced by badly designed or located vehicle access ramps in footpaths or streets; and

(b) vehicle and service entry points are kept to a minimum to avoid adverse impact on pedestrian amenity.

224 Within the Core, Primary and Secondary Pedestrian Areas identified within Map Adel/1 (Overlays 2, 2A and 3), development should be designed to support the establishment and maintenance of continuous footpaths so that pedestrian flow is free and uninterrupted. Pedestrian access should be provided at ground level mid-block between all streets.

228 Development should provide and maintain pedestrian shelter, access and through-site links in accordance with the walking routes identified within Map Adel/1 (Overlays 2, 2A and 3) and the provisions of the Zone or Policy Area in which it is located. Such facilities should be appropriately designed and detailed to enhance the pedestrian environment, have regard to the mobility needs of people with disabilities, and be safe, suitable and accessible.

229 Corner buildings in the Central Business Policy Area of the Capital City Zone, buildings adjacent to street intersections and buildings along a high concentration public transport route or along public transport pedestrian routes identified within Map Adel/1 (Overlay 4) should provide weather protection for pedestrians in the form of verandahs, awnings or canopies. Where verandahs or awnings are provided which block street lighting, they should include additional lighting beneath the canopy.

230 Permanent structures over a footpath should have a minimum clearance of 3.0 metres above the existing footpath level, except for advertisements which should have a minimum clearance of 2.5 metres and temporary structures and retractable canopies which should have a minimum clearance of 2.3 metres above the existing footpath level.

231 Where posts are required to support permanent structures, they should be located at least 600 millimetres from the kerb line.

232 Access for people with disabilities should be provided to and within all buildings to which members of the public have access in accordance with the relevant Australian Standards. Such access should be provided through the principal entrance, subject to heritage considerations and for exemptions under the relevant legislation.

Bicycle Access

OBJECTIVES

Objective 64: Greater use of bicycles for travel to and within the City and the improvement of conditions, safety and facilities for cyclists.

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

PRINCIPLES OF DEVELOPMENT CONTROL

233 Development should have regard to the bicycle routes identified within Map Adel/1 (Overlay 3) by:

(a) limiting vehicular access points; and

(b) ensuring that vehicles can enter and leave the site in a forward direction, thereby avoiding reverse manoeuvres.

234 An adequate supply of on-site secure bicycle parking should be provided to meet the demand generated by the development within the site area of the development. Bicycle parking should be provided in accordance with the requirements set out in Table Adel/6.

235 Onsite secure bicycle parking facilities for residents and employees (long stay) should be:

(a) located in a prominent place;

(b) located at ground floor level;

(c) located undercover;

(d) located where passive surveillance is possible, or covered by CCTV;

(e) well lit and well signed;

(f) close to well used entrances;

(g) accessible by cycling along a safe, well lit route;

(h) take the form of a secure cage with locking rails inside or individual bicycle lockers; and

(i) in the case of a cage have an access key/pass common to the building access key/pass.

236 Onsite secure bicycle parking facilities for short stay users (i.e. bicycle rails) should be:

(a) directly associated with the main entrance;

(b) located at ground floor level;

(c) located undercover;

(d) well lit and well signed;

(e) located where passive surveillance is possible, or covered by CCTV; and

(f) accessible by cycling along a safe, well lit route.

237 Access to bicycle parking should be designed to:

(a) minimise conflict with motor vehicles and pedestrians;

(b) ensure the route is well signed and well lit including the use of road markings such as a bicycle logo if appropriate to help guide cyclists; and

(c) ensure the route is unhindered by low roof heights.

238 To facilitate and encourage the use of bicycles and walking as a means of travel to and from the place of work, commercial and institutional development should provide on-site shower and changing facilities.

Public Transport

OBJECTIVES

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

Objective 67: Accessible public transport for all metropolitan residents and visitors and safe and attractive facilities for public transport users.

PRINCIPLES OF DEVELOPMENT CONTROL

239 Development along a high concentration public transport route should be designed to ensure that activity and interest for public transport passengers is maximised through the incorporation of active street frontages.

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

(a) ensure there are pedestrian links through the site if needed to provide access to public transport;

(b) provide shelter (e.g. verandahs) for pedestrians against wind, sun and rain;

(c) provide interest and activity at street level; and

(d) where possible, avoid vehicle access across high concentration public transport routes identified in Map Adel/1 (Overlay 4). Where unavoidable, vehicle access should be integrated into the design of the development whilst retaining active street frontages.

Traffic and Vehicle Access

OBJECTIVES

Objective 68: Development that supports a shift toward active and sustainable transport modes (i.e. public transport, cycling and walking).

Objective 69: An enhanced City environment and the maintenance of an appropriate hierarchy of roads to distribute traffic into the City to serve development in preference to through traffic.

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

PRINCIPLES OF DEVELOPMENT CONTROL

241 Development should be designed so that vehicle access points for parking, servicing or deliveries, and pedestrian access to a site, are located to minimise traffic hazards and vehicle queuing on public roads. Access should be safe, convenient and suitable for the development on

the site, and should be obtained from minor streets and lanes unless otherwise stated in the provisions for the relevant Zone or Policy Area and provided residential amenity is not unreasonably affected.

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

243 Where practicable, development sites should contain sufficient space for the location of construction equipment during the course of building construction, so that development does not rely on the use of Council road reserves to locate such equipment**.**

244 Vehicular access to development located within the Core and Primary Pedestrian Areas identified in Map Adel/1 (Overlay 2A) should be limited and designed to minimise interruption to street frontages.

245 Where vehicular access to a development is gained by an existing crossing in the Core Pedestrian Area identified in Map Adel/1 (Overlay 2A), there should be no increase in the number of parking spaces served by the crossing, nor any increase in the number of existing crossings serving that development.

246 There is no minimum setback required from a rear access way where the access way is wider than 6.5 metres. Where the access way is less than 6**.**5 metres in width, a setback distance equal to the additional width required to make the access way 6**.**5 metres or more, is required to provide adequate manoeuvrability for vehicles.

247 The number of access points on primary city access roads identified in Map Adel/1 (Overlay 1) should be limited to minimise traffic and pedestrian inconvenience, interference with public transport facilities and adverse effects on the environment.

248 Buildings located along primary and secondary access roads should be sited to avoid the need for vehicles to reverse on to the road (unless the dimensions of the site make this impractical).

Economic Growth and Land Use

OBJECTIVES

Objective 73: The role of the City enhanced as:

(a) the community, civic and cultural heart of South Australia and as a driving force in the prosperity of the State;

(b) the State centre for business, administration, services, employment, education, political and cultural activities, government and public administration;

(c) a welcoming, secure, attractive and accessible meeting place for the people of metropolitan Adelaide and beyond for leisure, entertainment, civic and cultural activity, specialty shopping, personal and community services;

(d) a centre for education and research built on key academic strengths and on the excellent learning environment and student accommodation available in the City;

(e) a supportive environment for the development of new enterprises drawing on the cultural, educational, research, commercial and information technology strengths of the City centre;

(f) the gateway to the attractions of South Australia for international and interstate visitors by developing a wide range of visitor accommodation, facilities and attractions, particularly attractions which showcase the particular strengths of South Australia; and

(g) a great place to live, with a growing diversity of accommodation for different incomes and lifestyles.

Objective 74: A business environment which encourages investment from domestic and foreign sources, business development and employment.

Objective 75: Development which reinforces clusters and nodes of activity and distinctive local character.

Objective 76: A diverse mix of commercial, community, civic and residential activities to meet the future needs of the Capital City of South Australia.

PRINCIPLES OF DEVELOPMENT CONTROL

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

(a) provide a range of shopping facilities in locations that are readily accessible;

(b) provide for the growth in economic activities that sustain and enhance the variety and mix of land uses and the character and function of the City;

(c) maximise opportunities for co-location, multiple use and sharing of facilities;

(d) be accessible to all modes of transport (particularly public transport) and safe pedestrian and cycling routes; and

(e) have minimal impact on the amenity of residential areas.

268 Development is encouraged to develop and expand upon the existing or create new tourism activities to maximise employment and the long-term economic, social and cultural benefits of developing the City as a competitive domestic and international tourist destination.

269 Tourist facilities should be compatible with the prevailing character of the area, within close proximity to public transport facilities and well designed and sited.

270 Development located either abutting, straddling or within 20 metres of a Zone or Policy Area boundary should provide for a transition and reasonable gradation from the character desired from one to the other.

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