20 September 2019

Conor Wilson
Senior Planner
Inner West Council
By email: conor.wilson@innerwest.nsw.gov.au

Dear Conor,

Re: Response to Sydney City East Planning Panel deferral for 74-75 Carlton Crescent Summer Hill

This letter provides a response to the deferral by the Sydney City East Planning Panel on 5 September 2019 in relation to the Development Application (DA) over land at 74-75 Carlton Crescent, Summer Hill (DA 2018.220).

The Panel deferred the matter, primarily so that the applicant could work with Council to provide an agreed solution to flooding related to the site – and in particular, a resolution to Clause 6.2 of the Ashfield LEP 2013.

In addition, the Panel made a number of other comments and questions seeking additional clarification relating to:

1. Preparation of amended drawings including a flood wall to PMF with appropriate setback from site boundary to enable landscaping **(Appendix 1)**;
2. Indicative landscape plan showing how landscaping could be provided towards the north of the site in front of the wall **(Appendix 1)**;
3. Amended Stormwater and Flooding Report and Flood Response Management Plan showing the protection from the PMF, including measures that could be implemented should the flood gate fail **(Appendix 2)**;
4. Additional measures on top of the flood gate to outline how protections would occur should flood gate fail and other examples of flood gates and their operation in Sydney **(Appendix 2);**
5. Additional information in an amended Green Travel Plan including confirmation students are not permitted residential permits **(Appendix 3);**
6. Preparation of a response to the Councillor motion correspondence date 27 August 2019; and
7. Confirmation that the building will include a full sprinkler system **(Appendix 4)**.

Item 6 is addressed within the content of the subject letter, with all other items addressed in Appendices 1 – 4.

In addition, we are requesting that Council also consider that the deferred commencement condition requiring the registration of an easement across adjoining land be removed, as the proposed development includes alterations to the proposed Concept Stormwater Management Plan that ensures all discharge will be towards the western boundary, which

contains an existing connection to Council's stormwater network. The proposed Concept Stormwater Management Plan outlines that the stormwater runoff volume and peak flow rates for all stormwater events over the range from 5 to 100 year ARI events is less than the pre-development site – therefore the proposed development will result in an improvement and reduction in the stormwater currently discharged from the site and does not require any proposed stormwater to be conveyed across adjoining private property. Therefore, there is no longer a need for an easement or deferred commencement. The Concept Stormwater Management Plan is provided within **Appendix 2.**

Item 7 – Response to Councillor Motion dated 27 August 2019

The Development Application was presented to Council on 3 September 2019 where the Council passed a motion requesting that the application be refused for a number of reasons. Each of the reasons outlined and a response to the Councillors' concerns is outlined in Table 1 below.

Table 1 – Response to Council Resolution

Council Issue	Response
The proposal does not satisfy the conditions of SEPP ARH Clause 29(2)(e), which requires 0.5 parking spaces for each room.	Clause 29 of the SEPP ARH relates to "Standards that cannot be used to refuse consent", not a condition that must be complied with, or requires a Clause 4.6 variation if variation is sought. Rather, this provision simply requires that a consent authority cannot refuse an application if the development complies with the control. Compliance with this provision is considered unnecessary in this instance for the reasons outlined below and in the existing DA documentation. The proposed development is not for a generic boarding house but is for a specialised student accommodation development. Council has proposed a condition that includes a restriction of the use of the site to be registered on title, which will restrict the use of the site for student accommodation purposes in perpetuity. Considering the specialised use of the site, the Development Application has been supported by detailed evidence of other existing student accommodation facilities run by Iglu, that demonstrates there is no demand for private vehicle parking. The Green Travel Plan in **Appendix 3** outlines that of the 3,000+ beds operated as student accommodation by Iglu – there is no private parking provided at any of its facilities. Iglu has not received any complaints from students or surrounding users related to the demand for on-site car parking spaces for any of their existing sites. The Green Travel Plan demonstrates Iglu's philosophy to encourage staff and students to use sustainable modes of transport (public transport, cycling and walking), with the overall objective to influence the travel behavior of the site prior to being occupied. The site has been chosen due to the suitable location to public transport, surrounding amenity and commercial activity. For further details see the Green Travel Plan in **Appendix 3**. This philosophy aligns with Council's current approach to reduce the impact of private vehicle transport. The Vision of Council's draft Integrated Transport Strategy, "Going Places" involves; *Growing the number of Inner West residents, workers and visitors that prefer to walk, cycle and use public transport because it is safe convenient, enjoyable and healthy.*

Table 1 – Response to Council Resolution	
Council Issue	Response
	The proposed development is the physical realisation of this Vision and the first Priority of the Strategy, which requires the integration of land use and transport planning. The subject site has been specifically chosen due to its accessibility to alternative forms of transport as well as the facilities offered by the Summer Hill town centre and surrounding open space. Students that typically utilise student accommodation facilities are international or interstate and do not own a vehicle. Providing car parking spaces in the proposed facility would encourage car use for students who do not own or need to own a vehicle and would therefore directly conflict with the direction of Council to reduce the impact of private vehicle ownership.
The proposal does not satisfy the Inner West Comprehensive DCP, which requires a minimum of one parking space per staff member.	The Inner West Comprehensive DCP outlines that in the instance of boarding houses, 1 parking space is provided per "**resident** employee" (emphasis added). The proposal includes 24-hour staffing of the facility; however no resident employee is proposed. On account there is no resident employee, the proposal is not inconsistent with the relevant control in the DCP in relation to resident employees. Furthermore, the Comprehensive DCP outlines that Council may support variations to the parking requirements, where it is suitably justified. Part of this justification can be provided through provision of a "Workplace Travel Plan", which includes a package of initiatives aimed at reducing car-based travel. The Green Travel Plan has the same function as a Workplace Travel Plan and provides a range of initiatives aimed at reducing car-based travel. The Green Travel Plan aims to influence travel behaviors of both staff and students. This is consistent with the purpose of the Chapter A, Part 8 of the Comprehensive Inner West DCP 2016, which includes; - *To reduce the environmental impact of on-site surface car parking, including through appropriate stormwater treatment and landscaping.* - *To encourage sustainable transport such as bicycles, motor cycles and walking.* - *To be flexible in the approach provided the purpose of this part is met.* The proposed development has been well considered and as demonstrated above and attached Green Travel Plan, does not conflict with the controls provided in the Comprehensive DCP.
The proposal does not satisfy the BCC and NCC codes for disabled spaces for a Class 3 development, which requires at least one car space.	The proposed development does not include parking for any persons, abled or disabled. This approach has been supported and approved for all of Iglu's facilities. Iglu's BCA and Access consultants has reinforced that no disabled parking is required where no parking is provided on-site. This approach is also utilised where maximum parking controls are applied and no parking is proposed – for example within many sites in the City of Sydney LGA.
The proposal does not satisfy the following parts of the	In recognition of the concerns of Council and the Panel in relation to the proposal's ability to address the requirements presented in

Table 1 – Response to Council Resolution	
Council Issue	Response
ALEP2013 pursuant to Section 4.15(1)(a)(iii) of the Environmental Planning and Assessment Act 1979 – Clause 6.2 Flood Planning	Clause 6.2(3) of the ALEP 2013, the Applicant has provided physical amendments to the proposal that will ensure there is no unreasonable risk to life from flood, including any PMF event. The physical changes have included the development of a physical barrier up to the height of the PMF that will aesthetically integrate with the design of the existing proposal. Furthermore, internal levels have been slightly amended to prevent flood ingress from flood events. To ensure that the proposed flood wall does not restrict movement through the rear of the site and to ensure the design can still actively respond to the rear of the laneway, a flood gate has been proposed for a small section. **The flood gate is not required to protect the site from 1:100 Year ARI event, but will be activated in a PMF event**. This flood gate is only required for a narrow passageway from the internal courtyard to the laneway at the rear of the site. The proposed flood gate design relies on buoyancy only and has no mechanical reliant aspects, which significantly reduces any risk of fail. However, for absolute protection relating to managing risk to life from flood, additional fail safes are also proposed. For this reason, the Amended Stormwater Repot in **Appendix 2** has also included the provision of Demountable Flood Barrier Panels that will be inserted on the courtyard side of the flood gate in the event that external flood waters reach the 1:100 Year ARI event. The Demountable Flood Barriers will now impact the function of the flood gate. The Flood Response Management Plan in **Appendix 2** details that in the event that water levels reach the 1:100 Year ARI event (as observed by Staff and alerted by an automatic alarm system), staff members are to insert the panels into the tracks located behind the flood gate and lock them in place. Then evacuation of the lower levels to the upper levels is to occur in accordance with the Flood Response Management Plan. The Amended Stormwater Report outlines specific instances where this style of flood gate has been approved and implemented across LGAs in NSW including (but not limited to); - City of Sydney; - Burwood; - Waverley; - Georges River; - Central Coast; - Parramatta; - Blacktown; - Ryde; - Newcastle; - Northern Beaches; and, - Willoughby

Table 1 – Response to Council Resolution	
Council Issue	Response
	The amendments to the scheme have therefore demonstrated that the proposal provides measures that protect the future occupants and surrounding development from unreasonable impact from flooding in accordance with Clause 6.2 of the ALEP 2013.
The application has not demonstrated that the proposal is suitable for the site in its current form pursuant to Section 4.15(1)(c) of the Environmental Planning and Assessment Act 1979, specifically having regard to the flooding constraints and risks which apply to the land.	As demonstrated above, the proposal has been amended to ensure that no unreasonable flooding impact will result from the proposed development. Not only does the proposal now provide physical design solutions to defend from flooding ingress at PMF level, the proposal is also supported by an updated Flood Response Management Plan (**Appendix 2**). The Flood Response Management Plan complements the physical design response to the flood constraints of the land by providing operational response to the risk of flooding. The key measures outlined in the Plan show that the development can provides an operational response that includes: • On site managers will be present 24/7, with a minimum of 2 staff on duty at any given time. Staff are to facilitate the maintenance of monitoring and mitigation equipment, educate occupants on risks and evacuation procedures, administer test evacuations, monitor flood levels in major events and coordinate evacuation of lower levels to upper storeys (above PMF) when flood levels reach the 1:100 Year ARI event (noting that all levels of the accommodation are at or above the FPL which is 0.5m above the 1:100 Year ARI event). Ensuring that evacuation occurs at the 1:100 Year ARI means that evacuation will occur well before the PMF levels are reached as the 1:100 year ARI will always occur before the PMF. • Installation of a flood warning system to all lower level rooms, which is triggered by a sensor at the southern property boundary. The alarm will sound once the water level at the trigger location reaches 300mm depth, commensurate with the 1:100 Year ARI event (which is 0.5m below the FPL and 1.5m lower than the PMF). • At the confirmation of 1:100 Year ARI event, staff and students will be further alerted by an automated emergency announcement over the PA system (the same approach that is deemed suitable for warning occupants of a fire) for evacuation of lower ground level. • Demountable flood barriers are to be inserted behind the flood gate and clamped into place. The demountable flood barriers will not impact the operation of the flood gate but will provide additional barrier/treatment to the PMF event. • The staff immediately commence door to door entry to each accommodation at the lower ground level and evacuation to the level above and confirm that all persons at the lower ground level have been evacuated to a level above the PMF. Evacuation will remain in place for

Table 1 – Response to Council Resolution	
Council Issue	Response
	approximately 2 hours or until such time the ponding depth has receded. • Despite all DDA rooms being located on upper levels above the PMF, the Flood Evacuation Management Plan requires a Personal Emergency Evacuation Plan (PEEP) to be prepared for all persons with a disability to ensure the safety of each student in the case of an evacuation. Accordingly, the combination of Flood Response Management Plan and the physical design responses show that the proposal meets the requirements of the ALEP 2013 and the ADCP 2016, in that it provides design and operational solutions to ameliorate the risk from all possible flood events on future occupants and on surrounding land uses. The proposal has therefore comprehensively addressed the flood constraints of the land and is considered suitable for the site in accordance with Section 4.15(1)(c) of the *Environmental Planning and Assessment Act 1979*.
Council's submission also requests that the following matter be dealt with in the determination: - Cross ventilation	The proposed development is for a Student Accommodation, which has no requirement for natural cross ventilation (the ADG does not apply to Boarding Houses). Despite this, Iglu has seen the advantage of maximizing the number of rooms that are single loaded and providing louvres and fan lights to allow the rooms to be naturally cross ventilated if desired by the occupants.
- Natural drying of washing	Despite no formal natural drying area being provided, it should be noted that extensive sustainability measures have been proposed as part of the development. This includes 100kW Solar PV system with integrated battery storage that despite the use of the laundry will reduce the C02 Greenhouse gas emission by 138 tonnes per annum.
- Flood/WSUD	Flooding and stormwater has been addressed elsewhere in this letter with detail provided in **Appendix 2**. However it should also be noted that the proposed development will increase the pervious and deep soil planting area of the site, decreasing the stormwater run-off generated.
- Bicycle path access and signage between storage and cycle route and station	The Green Travel Plan in **Appendix 3** details the cycling infrastructure that surrounds the site – including link from the rear of the site to various on-road cycle paths, off road shared paths (GreenWay) and the Summer Hill Station.
- Bicycle charging facilities	The applicant is happy to explore bicycle charging facilities in the bicycle storage room during the detailed design stage – should Council have additional detail on this proposed system.
- Food waste management plan	The operation of the student accommodation does not include the provision of meals by IGLU.

Thank you for the opportunity to provide additional information to address flooding and other matters raised by Council officers and the Panel. Please do not hesitate to contact me on 8667 8668 or kbartlett@mecone.com.au to discuss further.

Yours sincerely,

Kate Bartlett

Director

mecone

Appendix 1 – Amended Plans and Landscaping

IGLU SUMMER HILL

FLOOD PROTECTION WALL STUDY
FOR COUNCIL REVIEW AND FEEDBACK
SEPTEMBER 2019

BATESSMART™ 360°

PMF PROTECTION WALL
3D VIEW

LINE OF FLOOD PROTECTION WALL

LOWER GROUND PLAN

REVISED FOR FLOOD PROTECTION STUDY

DEVELOPMENT APPLICATION	NOT FOR CONSTRUCTION

Revision summary:
- Wall Flood Barrier along the property boundary and Bicycle Storage at RL. 21.00
- Finish Floor Level Courtyard at RL. 21.00
- Revised Bicycle Storage Layout for access and connection.

Revision	Date	Description	Initial	Checked
E	07.08.19	For Development Application	EN	HS
D	08.07.19	For Development Application	EN	HS
C	24.06.19	For Development Application	JC	HS
B	17.05.19	For Development Application	JC	WG
A	07.12.18	For Development Application	JC	WG

74 Carlton Crescent
Summer Hill

Lower Ground Plan

Scale	1:200@A1 1:400@A3
Drawn	Checked
Project No.	S12235
Status	FOR INFORMATION
Plot Date	18/9/2019 6:36:04 PM
Plot File	C:\Users\CHTappdata\local\temp\AcPublish_6180\A03.100 - Lo... ...er Ground Plan_PMF updated.rvt
Drawing No.	[Revision]

A03.100 - LOWER GROUND PLAN_PMF UPDATE

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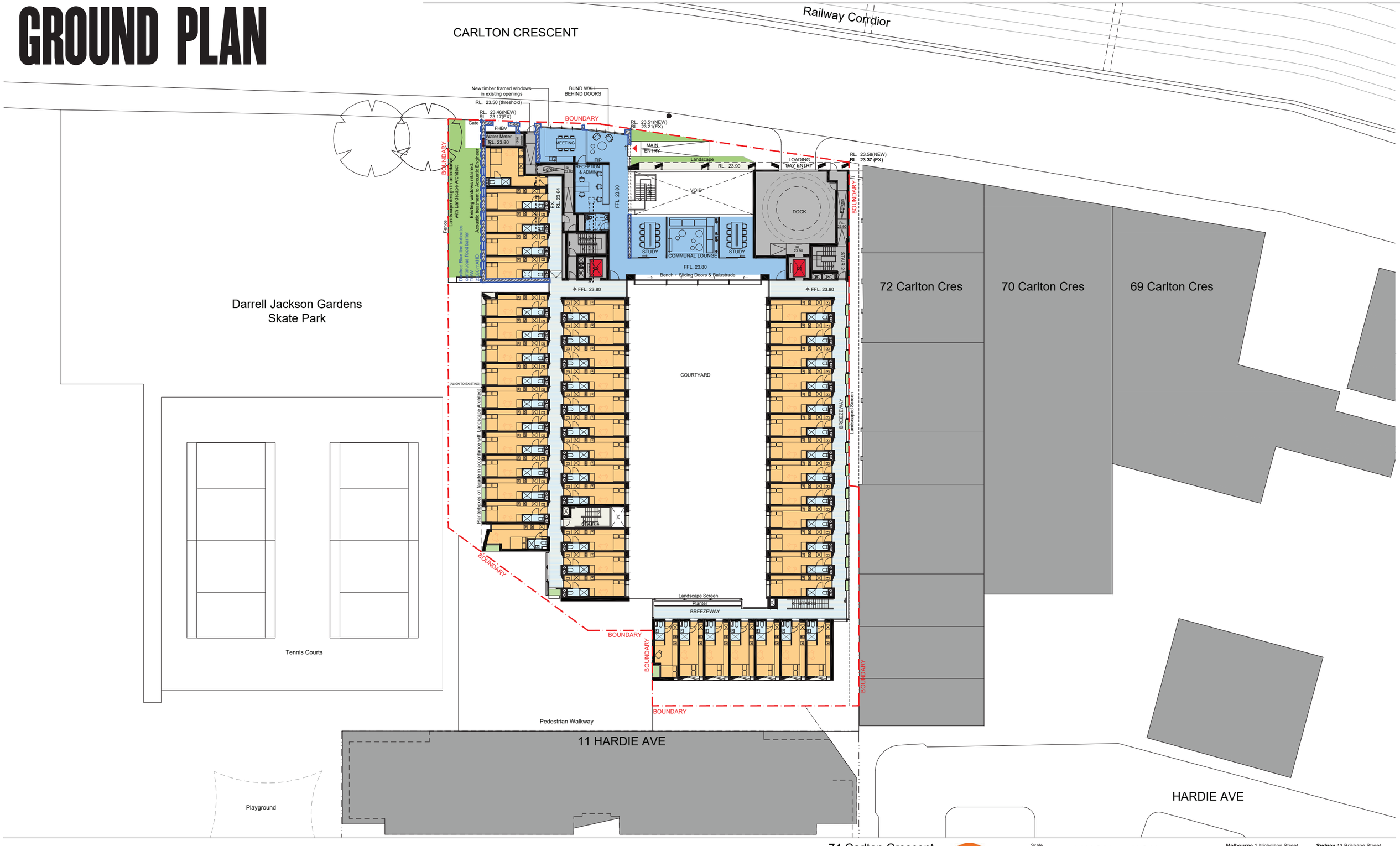
BATESSMART

GROUND PLAN



LEGEND

New opening in existing

Existing retained

REVISED FOR FLOOD PROTECTION STUDY

DEVELOPMENT APPLICATION	NOT FOR CONSTRUCTION

Revision summary:

-Powerline setback on L02 to Carlton Cresent

Revision	Date	Description	Initial	Checked
C	24.06.19	For Development Application	JC	HS
B	17.05.19	For Development Application	JC	WG
A	07.12.18	For Development Application	JC	WG

74 Carlton Crescent
Summer Hill

Ground Plan

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Drawing No.	[Revision]

A03.000 - GROUND PLAN_PMF UPDATE

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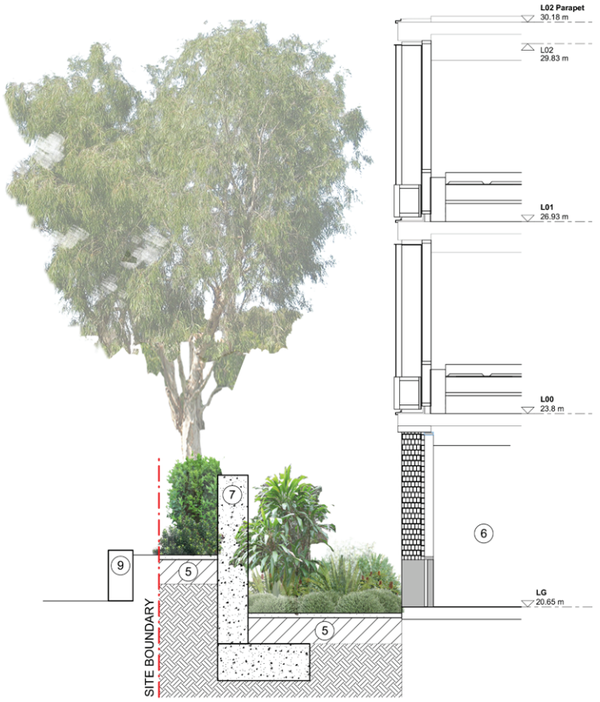
LANDSCAPE DESIGN

LANDSCAPE PLAN



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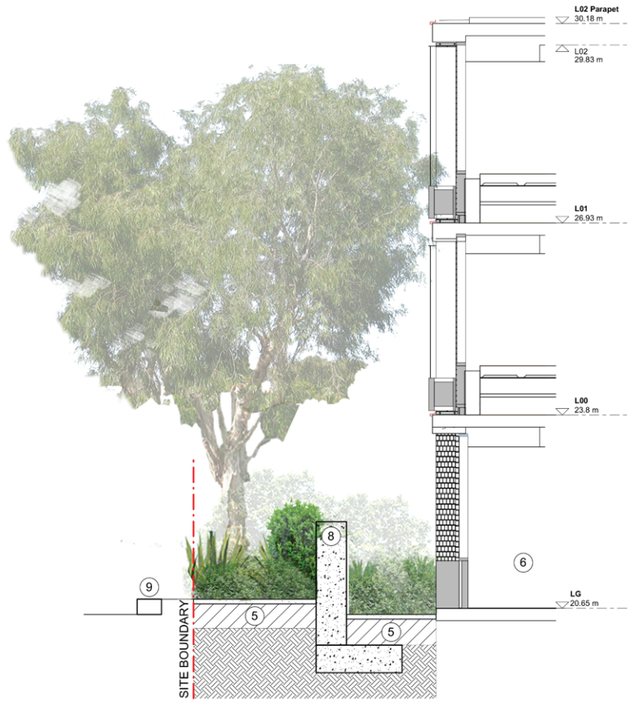
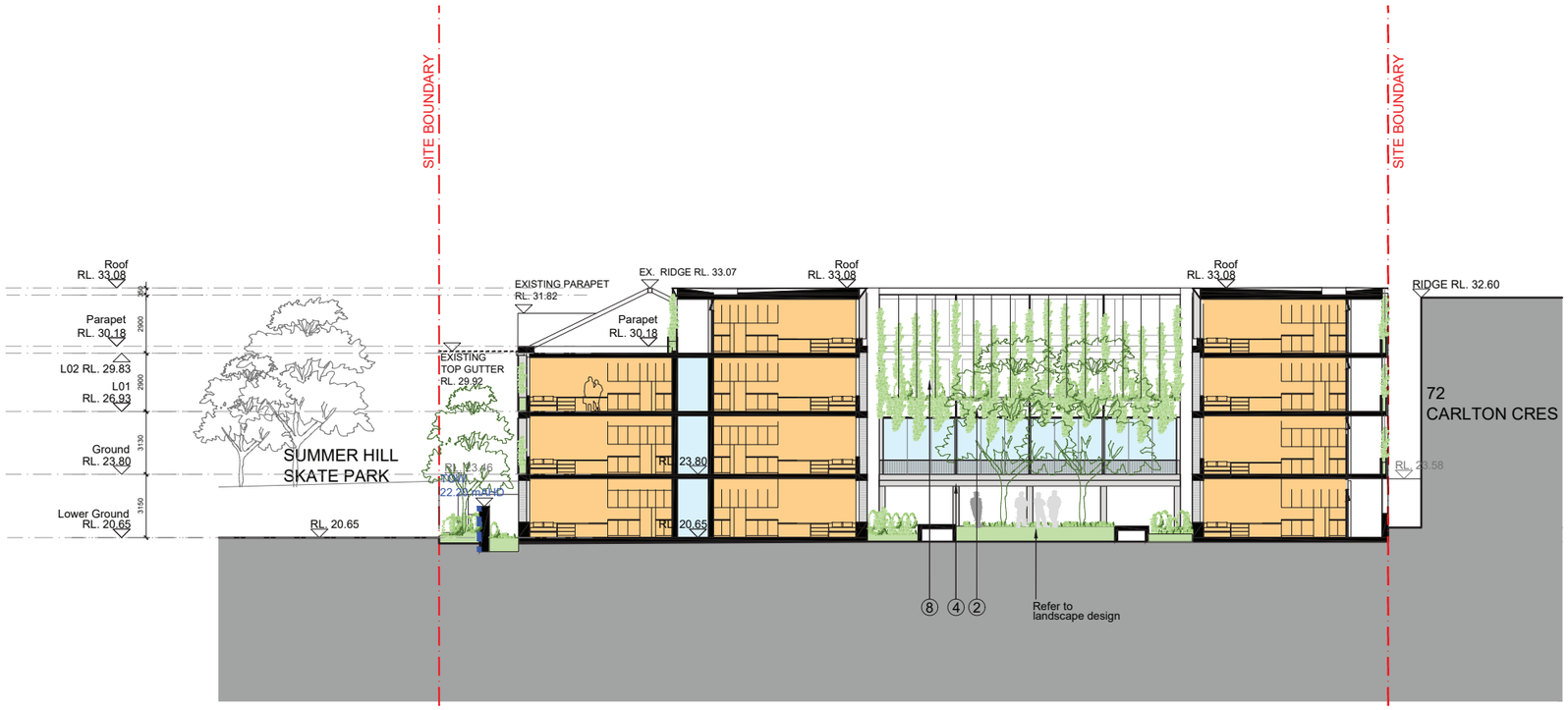


3 Section 3
Scale 1:50 @ A1

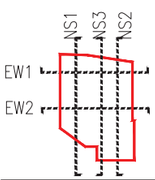
KEY

1. Heritage Building
2. New Pier and Capping Beam
3. Existing Brick Facade
4. Sunken Planter to Protect Foundations from Moist
5. Garden Bed
6. IGLU Building
7. Flood Wall (TOW = 22.80)
8. Flood Wall (TOW = 22.06)
9. Existing Wall to be Retained

EW SECTION



REVISED FOR FLOOD PROTECTION STUDY



Material Key

1. Performance vision glass/ Metal window reveal/ Metal louvres
2. Metal planter box to landscape architect's detail
3. Slim profile brick
4. Off-form Concrete
5. Metal framed clear DGU vision glass
6. Metal Gate
7. Performance vision glass/Metal window reveal/ glass louvres
8. Metal frame and steel balustrade screen
9. Metal panel
10. Timber batten screen

DEVELOPMENT APPLICATION | NOT FOR CONSTRUCTION

Revision summary:
-Powerline setback on L02 to Carlton Cresent

Revision	Date	Description	Initial	Checked
C	24.06.19	For Development Application	JC	HS
B	17.05.19	For Development Application	JC	WG
A	07.12.18	For Development Application	JC	WG

74 Carlton Crescent
Summer Hill

EW Cross Section 01

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Project No.	S12235
Status	FOR INFORMATION
Plot Date	18/9/2019 5:42:35 PM
Plot File	C:\Users\CHT\appdata\local\temp\AcPublish_6180\A08.002 - EW... - (Cross Section 01.dwg
Drawing No.	[Revision]

A08.002 - EW CROSS SECTION 01

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BATESSMART

PMF PROTECTION WALL
VIEW 02

PMF PROTECTION WALL
VIEW 03

Appendix 2 – Amended Stormwater Management Plan and Flood Response Plan

Amended Stormwater Report

Iglu Pty Limited / 19 September 2019

181975 CAAA

Taylor Thomson Whitting (NSW) Pty Ltd, Consulting Engineers | ABN 81 113 578 377
48 Chandos Street, St Leonards NSW 2065 | +612 9439 7288 | ttw.com.au

Structural
Civil
Traffic
Facade
Consulting
Engineers

Contents

1.0 Introduction

Taylor Thomson Whitting Pty. Ltd (TTW) has been commissioned to provide stormwater disposal and soil and erosion control measures to support the proposed Development Application for Iglu Summer Hill development. This report details the concept design for Development Application (DA) stage only.

This report outlines the proposed stormwater disposal requirements and the impact of this proposed development.

1.1 The Existing Site

The site is bounded by Carlton Crescent to the north, Darrell Jackson Gardens and Skate Park to the west, and commercial properties to the south and east. Refer to Figure 1 for site location.

The existing site is a two-storey brick and metal clad building with on-grade carpark to the rear of the property which is 100% impervious. The existing overflow path (shown in green arrows in Figure 1) is through the rear of the property flowing towards Hardie Avenue as shown in Figure 1.

Figure 1 Site Location (Source: SIX Maps)

The in-ground drainage is currently directed to the stormwater pit ‘C’ on the southwest corner of the site as shown in Figure 2. Outlet direction from pit ‘C’ is currently unknown and will requires further investigation during detailed design.

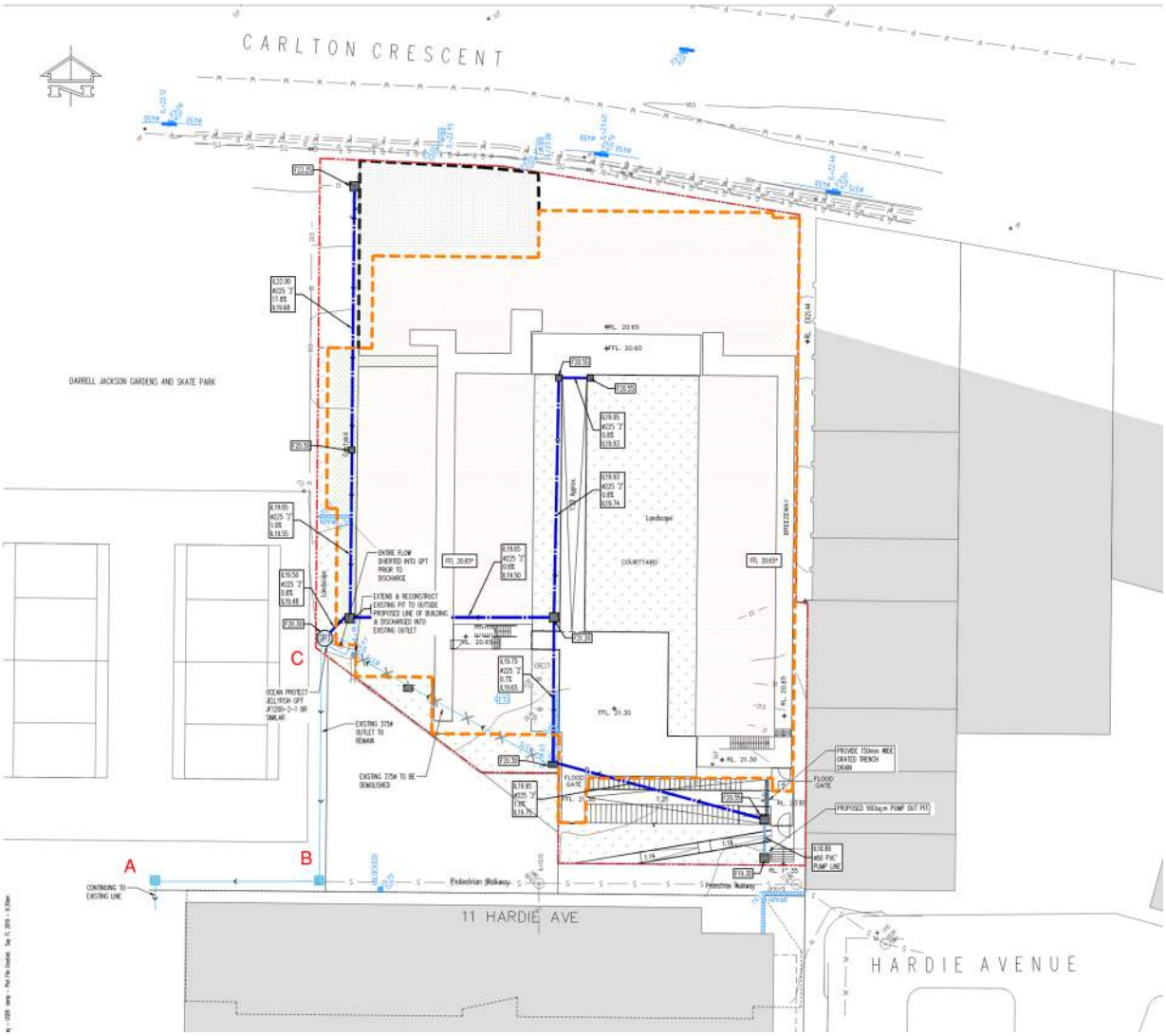


Figure 2 extract from C0110 issue P4

1.2 Relevant Documents

The following documents have been reviewed in preparing this document:

- Comprehensive Inner West DCP 2016
- Ashfield Local Environment Plan (LEP) 2013
- Ashfield Interim Development Assessment Policy 2013
- Urban Erosion and Sediment Control Handbook (2006)

2.0 Proposed Development

The proposed development will involve the following:

- Demolition of the existing 2 storey building.
- Construction of a new 4 storey student accommodation building.
- Landscape works.

The lower ground floor layout is shown in Figure 4, refer to the Architectural drawings for the proposed floor layouts for different levels. The revised lower ground floor has a Flood Wall set to the PMF level to prevent flood ingress into the courtyard for all probable flood events.

There is a proposed self-raising flood gate from the courtyard to the laneway to allow resident movement in non-PMF storm event times to provide resident access to the retail centre to the south.

The proposed civil engineering works include a proposed in-ground pit and pipe networks, site regrading and water quality measures.

Protection from the PMF event is the primary driver for the design change.

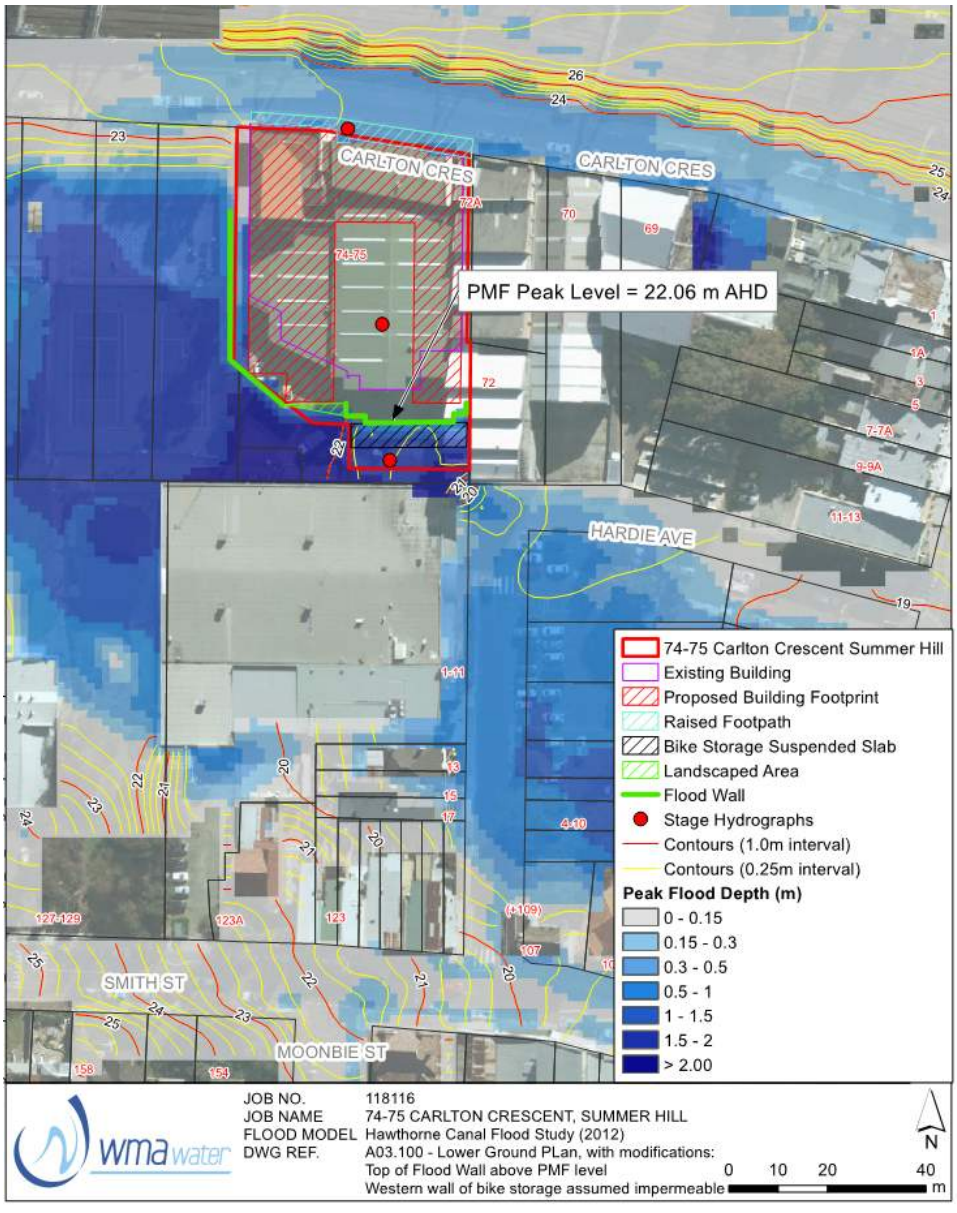


Figure 3 PMF extent with the flood wall

Figure 4 Lower Ground Floor Plan by Bates Smart dated 19 September 2019

Figure 5 PMF protection wall study by Bates Smart dated 19 September 2019

3.0 Flood Gate System

Flood Gate system proposed to be a self-raising system as supplied by the Flooding Solutions advisory Group

11 meter **SCFB** 1000

Solid and simple solution

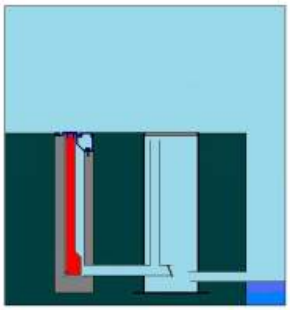
We are proud to introduce to you the HYFLO Self Closing Flood Barrier SCFB™, a unique effective flood defense system to protect people and property from inland waterway floods caused by heavy rainfall, gales or rapid melting snow. This system has been developed to provide optimal protection against extreme high water levels. The HYFLO Self Closing Flood Barriers SCFB™ can be built in the top of a dike or quay to protect inhabited as well as industrial or other strategic areas. The Barrier systems have already been built and installed in many countries around the globe.

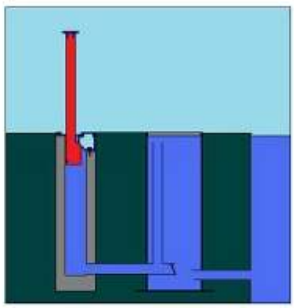
Key benefits

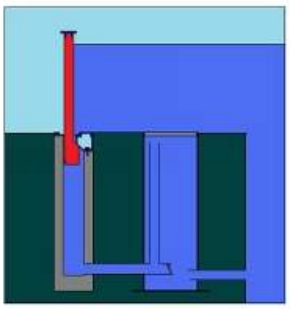
- **NO WARNING SYSTEM and WARNING TIME REQUIRED** - the Self Closing Flood Barrier SCFB™ rises instantly through the rising water level
- **NO MANPOWER REQUIRED** - the Self Closing Flood Barrier SCFB™ is not energy driven and operates without any human intervention
- **SHORT CLOSING TIME** - with a fast flood the barrier will close within a minute
- **NO STORAGE NEEDED** - in resting position the barrier is invisible and fully self protected
- **FULL PROTECTION** - to commercial and residential communities
- **MAINTENANCE FREE** - all applied elements represent the highest quality, with a unlimited time length
- **EASY TO TEST** - By filling up the pit the barrier is lifted automatically and ready for inspection
- **UNLIMITED LENGTHS** -The HYFLO system can be built at any required length: 1 m - 10 m - 100 m - 1000 m and more
- **EASY TO INSTALL**
- **THE BEST PRICE / PERFORMANCE COMPACTION**: without ongoing associated costs involving deployment, storage and maintenance.

Flooding Solutions Advisory Group, Australia

Principle of the Self Closing Flood Barrier SCFB™







Following installation and in non-flood conditions, alL operational parts of the barrier are invisibly concealed in the ground inside its basin.

When floodwater rises to within 10cm below flood level, the enclosed basin, which houses the floating wall, starts to fill up through an inlet pipe from the adjacent service pit. The flood wall floats and rises. When the basin is totally filled, the angled support block will ' lock the barrier into position making it watertight.

The floodwater can now continue to rise without flooding the protected area.

As the water subsides , the flood water in the basin is drained by drain pipes with one way check valves. As the water continues to drain from the basin, the flood wall returns to its resting position within the basin and the lid seals the barrier to prevent the barrier of waste and debris.

Innovative, effective and proven defence.

This award winning concept has been acclaimed as the world's most effective protection against floods. The Self Closing Flood Barriers SCFB™ have now become the leading flood defence device in its field. It has been in operational use around the globe since 1998 with a 100% success rate. The HYFLO barriers have already been operating more than 2.000 times in 14 years without worthy of mentioned maintenance.

Flooding Solutions Advisory Group, Australia

The locations these unit have been installed in NSW are as follows, TTW designed the Marketown system listed below

October 2018

Selected NSW Self Closing Flood Barrier locations

(most are completed, a few are council approved awaiting installation)

- South Sydney Leagues Club and adjacent properties, Redfern (5 barriers)
- 32 Ralph St, Alexandria (2 barriers)
- 46 – 52 Wentworth Ave Surry Hills, Sydney
- UTS Chau Chak building Ultimo, Sydney
- Darling Square, Sydney International Conference Entertainment & Exhibition Precinct (18 barriers in 3 new buildings)
- 84-92 Epsom Rd Zetland, Sydney
- 87 Bay St Glebe, Sydney
- Rugby Union Development Centre, Moore Park -2 barriers approved then designed out.
- 42 Meryla St, Burwood, Sydney
- 17 Beeson St Leichardt, Sydney
- 21 Bay St Double Bay, Sydney
- 128 Bellevue Hill Rd, Bellevue Hill, Sydney
- 134 Bellevue Hill Rd, Bellevue Hill, Sydney
- 4 Marine Parade Watsons Bay, Sydney (2 barriers)
- 1 Jacques Ave Bondi
- 10 Hall St Bondi (4 barriers)
- 11 Hall St Bondi (2 barriers)
- Lakeview apartments, Riverwood Sydney
- Royal Shores Apartment Complex, Ermington, Sydney (4 barriers)
- 21 Cowper St, Parramatta
- 1a Morton St, Parramatta
- The Ponds Shopping Centre, The Ponds
- West Ryde Community Centre, Ryde Sydney
- 1416 Pittwater Rd. Narrabeen (2 barriers)
- 1408 Pittwater Rd, Narrabeen
- Warringah Mall redevelopment, Brookvale (7 barriers)
- Macquarie Centre, Ryde

...../2

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- Aldi Brookvale store renovation (2 barriers)
- Marketown Shopping Centre, Steel St Newcastle (2 barriers)
- Wyong and Belmont Police Stations (2 barriers)
- Drayton House Aged Care, Bellevue Hill, Sydney
- Parramatta Square, at tender, 18 x barriers, various blocks
- Dee Why Town Centre (2 barriers)
- 17 Carlotta Rd, Double Bay
- 11-13 Burwood Rd Burwood
- The Lennox, Parramatta (8 barriers)
- 8 Phillip Street, Parramatta (7 barriers)
- 105 Phillip St,Parramatta
- 636 New South Head Road, Rose Bay
- NAB Chatswood (2 barriers)
- Shell Cove Shopping Centre
- NSW Art Gallery

A secondary system to reduce perceived risk is offered in addition to the self-closing flood barrier which is demountable barriers which can be deployed manually.

To our knowledge the self-closing flood barrier will be sufficient and suitable for the risk, however the following is the additional treatment

FLOODCONTROL INTERNATIONAL

DEMOUNTABLE BARRIERS

Demountable barriers are engineered to provide similar levels of protection to permanent flood defences, but with the distinct advantage of being fully removable when not required. They comprise aluminium panels that are inserted into steel channels. Bespoke clamps compress specialist seals to create a reliable barrier against flood water.

These barriers can be supplied for virtually any configuration including arcs, closed rectangles or circles and straight runs of any length. The system can be used on slopes up to 20° and can be stepped for steeper gradients. Each system is load calculated based on application and the prevailing flood conditions and can be configured for flood depths up to 4m. A four-sided detail is available for openings that may become fully submerged.

To facilitate installation in new builds, we can supply preformed ground plates with integral anchors for the demountable supports. The systems can be also retrospectively fitted to suitable existing foundations in which case load certified, chemically fixed sleeve anchors are used to attach the demountable supports.

This leaves only stainless steel bolt blanks at each post location. Due to the strength of our beams, this can be at 3m spacing.

Purpose designed seals that resist silt clogging and reform even after prolonged compression, together with vandal resistant covers and lockable clamps, make these systems ideal for locations where semi-permanent installation is a requirement.

The modular design facilitates storage and transportation and the ergonomically positioned carrying handles enable all but the higher systems to be erected without the need for mechanical lifting equipment.

Fully removable flush-finish perimeter defences - flood depths up to 4m, ideal for wide area defences.

USES

- Single building apertures.
- Openings in flood walls.
- Stainless / aluminium system for marine environments.
- Fully removable perimeter defence to buildings.
- A 'usually stored' system for erection when flood warnings received.

BENEFITS

- Low cost system.
- Lightweight - sections allow safe lifting of 3m beams by one person for rapid deployment.
- Flexibility – can be configured to any geometry.
- High strength – single beams can span up to 3m unsupported. Spans up to 6.5m possible with optional back-braces.
- Choice of bottom seals - allow barriers to sit on existing non-porous surfaces.
- Completely removable - leaving a totally flat ground surface.
- Vandal resistant - covers and padlockable clamps available.
- Able to be powder coated to any RAL colour.
- Long life - using galvanized and aluminium components.

www.floodcontrolinternational.com.au

FLOODCONTROL INTERNATIONAL

DESIGN

SIZES

- Unsupported spans possible up to 3m.
- Maximum spans of up to 6.5m possible with back bracing.
- Standard maximum flood control height of 4m, using 300mm standard beams.
- Beam weights of 8kg/m allow safe single person lifting of 2.5m beams.

CONFIGURATIONS

- Any length or layout is achievable.
- Posts and beams can be tailored for any gradient.
- Posts can accommodate steps and changes in direction.

INSTALLATION

- End posts can be surface mounted or recess mounted. Architectural coverplates can be applied to match building finishes.
- Intermediate posts require RC beam foundation. This can be under final surfacing finish with drilled in stainless steel sockets, or with cast in baseplates.
- Systems can be retrospectively fitted to any suitable foundation.
- Every system is bespoke designed using CAD and drawings provided.

BESPOKE CAD DRAWINGS

www.floodcontrolinternational.com.au

4.0 Stormwater Disposal Design

4.1 On-site Detention (OSD)

Inner West Council's OSD requirements are to ensure that the post-development peak flows do not exceed the peak flow rate generated under the existing site condition for all stormwater events over the range from 5 to 100 year annual recurrence interval (ARI) storm events.

Existing site is 100% impervious while the proposed development decreases the site imperviousness by proposing 723 m^2 landscape area (25% of the site area). Refer to Appendix B for pre-development and post-development catchment plans.

The stormwater runoff volume and peak flow rates for all stormwater events over the range from 5 to 100 year ARI from proposed development is less than from pre-development site. A hydrological model has been created using DRAINS modelling software to compare the pre-development and post-development peak flows, results are outlined in Table 3.1. Note that this DRAINS model has been development using AR&R 1987 techniques in accordance with Council's DCP.

Table 4.1: Comparison of Pre and Post Development Flows

Storm Event (ARI)	Pre Development Flow (m^3/s)	Post Development Flow (m^3/s)
1 in 5 Year	0.133	0.125
1 in 10 Year	0.150	0.142
1 in 20 Year	0.174	0.166
1 in 50 Year	0.187	0.176
1 in 100 Year	0.207	0.197

As outlined in Table 3.1, post-development flow rates are less than the pre-development flow rates for all stormwater events from 5 to 100 year ARI without an OSD system.

The stormwater runoff is to be conveyed by the proposed inground drainage system and connected to the existing inground infrastructure on the south west corner of the site. Refer to the extract in figure 2 of this report and C0110 issue P4 in Appendix A for stormwater drainage layout.

4.2 Stormwater Quality

4.2.1 Water Quality Control Measures

The development will implement water quality treatment Gross Pollutant Trap (GPT) to remove gross pollutants, total suspended solids and phosphorus/nutrients effectively to maintain stormwater quality discharging from the site. Refer to Appendix A for the proposed stormwater management plan incorporating water quality treatment measure.

Notwithstanding the pollution removal rates, the principals of the proposed stormwater quality treatment measure are in accordance with Inner West Council stormwater treatment requirements.

4.2.2 Sediment and Erosion Control Plan

Sediment and erosion control measures are to be installed and maintained until construction is completed. The proposed sedimentation and erosion control measures is to temporarily manage runoff and ensure no detriment to the receiving environments.

Temporary strategies generally refer to the control of sediment erosion and water pollution during the construction phase. The primary risks occur when soil is excavated and exposed to the elements during construction works. It is at this stage that suspended solids and other construction activity associated pollutants can be washed into the receiving stormwater network and subsequently the downstream waterways.

The strategies that are implemented to prevent potential soil degradation and pollution of waterways include the adequate provision of sedimentation and erosion control measures.

The temporary controls that are proposed in the concept plans by TTW will limit the displacement of sediment caused by runoff from disturbed areas and are designed to remove sediment prior to discharging from site. Refer to Appendix A for sediment and erosion control plan.

5.0 Recommendation

We recommend that the stormwater concept plan as shown in Appendix A is implemented to comply with the intent of Inner West Council's relevant stormwater requirements.

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NEMESIO BIASON
Associate Director

Reviewed & Authorised By
TAYLOR THOMSON WHITTING (NSW) PTY LTD

Stephen Brain
Technical Director

P:\2018\1819\181975\Reports\TTW\190919 summer hill iglu Civil Report for DA.docx

Appendix A

Stormwater Management Plan

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES ON DRAWING C001

CARLTON CRESCENT

DARRELL JACKSON GARDENS AND SKATE PARK

11 HARDIE AVE

HARDIE AVENUE

Pedestrian Walkway

Landscape

COURTYARD

BREEZEWAY

F23.25

IL22.00
ø225 'Z'
17.8%
IL19.68

F20.30

IL19.65
ø225 'Z'
1.0%
IL19.55

IL19.50
ø225 'Z'
0.8%
IL19.48

ENTIRE FLOW DIVERTED INTO GPT PRIOR TO DISCHARGE

EXTEND & RECONSTRUCT EXISTING PIT TO OUTSIDE PROPOSED LINE OF BUILDING & DISCHARGED INTO EXISTING OUTLET

GPT

OCEAN PROTECT JELLYFISH GPT JF1200-2-1 OR SIMILAR

EXISTING 375ø OUTLET TO REMAIN

EXISTING 375ø TO BE DEMOLISHED

CONTINUING TO EXISTING LINE

F20.55

IL19.95
ø225 'Z'
0.8%
IL19.93

IL19.93
ø225 'Z'
0.8%
IL19.74

IL19.65
ø225 'Z'
0.8%
IL19.50

IL19.75
ø225 'Z'
0.7%
IL19.65

IL19.95
ø225 'Z'
1.0%
IL19.75

F21.20

FFL. 20.65*

FFL. 21.30

RL. 20.65

RL. 21.30

RL. 20.60

RL. 19.35

EX21.44

PROVIDE 150mm WIDE GRATED TRENCH DRAIN

FLOOD GATE

PROPOSED 900sq.m PUMP OUT PIT

IL18.80
ø80 PVC'
PUMP LINE

F19.30

1:26

1:14

FOR CONTINUATION REFER TO INSET "A"

* SUBJECT TO FLOOD PROTECTION ADVICE

LEGEND:

- SITE BOUNDARY
- STORMWATER PIT/JUNCTION POINT WITH SOLID COVER
- STORMWATER PIT/JUNCTION POINT WITH GRATED COVER
- GD — GRATED DRAIN
- EXISTING STORMWATER
- OVERLAND FLOW PATH
- STORMWATER PIT, FLOW DIRECTION AND LINE WITH
  - INVERT LEVEL UPSTREAM
  - PIPE SIZE AND CLASS
  - PIPE GRADE
  - INVERT LEVEL DOWNSTREAM
  (IL10.00 ø600 'Z' 1.25% IL9.65)
- LOWER GROUND LEVEL BUILDING LINE
- GROUND LEVEL BUILDING LINE

FileName: C0110.dwg - USER: somp - Plot File Created: Sep 11, 2019 - 9:20am

A1 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date
P4	FOR APPROVAL	AL	SP	11.09.19
P3	FOR APPROVAL	AL	LS	04.09.19
P2	FOR APPROVAL	NB	LS	03.12.18
P1	FOR APPROVAL	NB	LS	30.11.18

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Project
74 CARLTON CRESCENT
SUMMER HILL

Sheet Subject
CONCEPT STORMWATER MANAGEMENT PLAN

Scale : A1 1:200
Drawn LS
Authorised

Job No 181975
Drawing No C0110
Revision P4

Plot File Created: Sep 11, 2019 - 9:20am

Appendix B

Catchment Plan

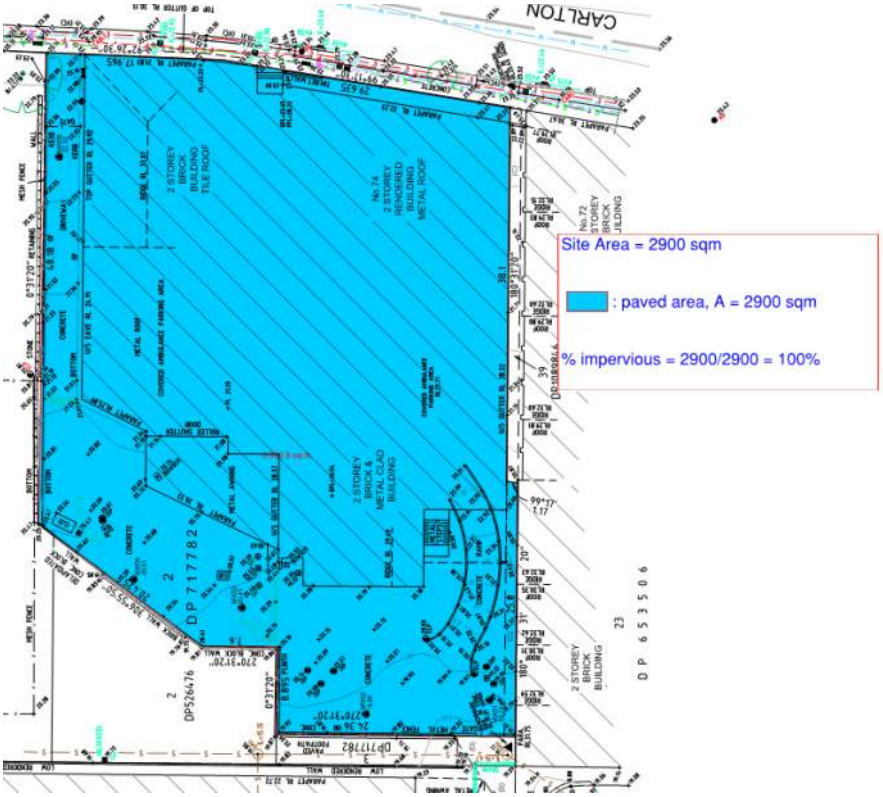

Figure 3 Catchment Plan Pre-development

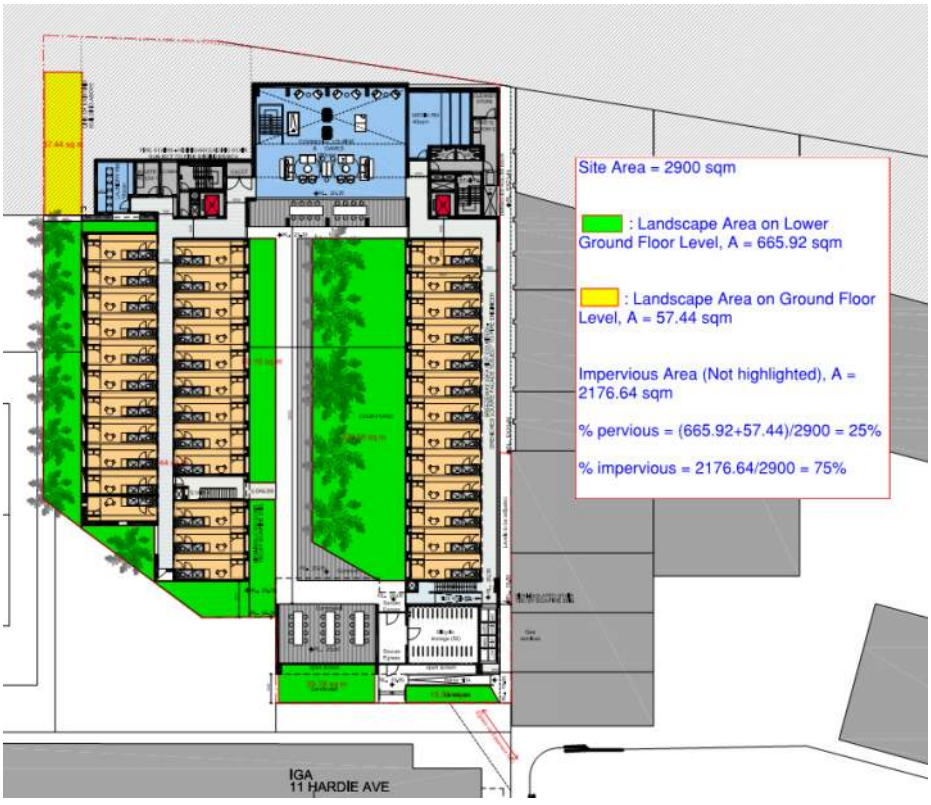

Figure 4 Catchment Plan Post-development

Flood Response Management Plan

74-75 Carlton Crescent, Summer Hill

Prepared for IGLU 19/09/2019

181975

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Structural
Civil
Traffic
Facade
Consulting
Engineers

Contents

1.0 Introduction

Taylor Thomson Whitting (TTW) have prepared a Flood Response Management Plan (FRMP) for the proposed development at 74-75 Carlton Crescent ("Site"). The Site is located within the Hawthorne Canal catchment and lies between Carlton Crescent to the north, Summer Hill Skate Park to the west and Hardie Avenue to the south-east.

This FEMP has been prepared as part of a Development Application for the Site (REF No. DA 2018.220). As parts of the site lie below the probable maximum flood (PMF) level, TTW has prepared this site-specific Flood Response Management Plan to be developed and implemented as part of the proposal.

The purpose of this FRMP is to summarise the flood risks within the site, identify preparation measures required, and to provide an action plan with steps to be completed during a flood event.

The proposed development is the construction of a new 180 bed student accommodation facility by Australia's market-leading owner, developer and long-term operator of purpose-built off-campus student accommodation facilities, Iglu Pty Ltd (Iglu). Iglu currently has in operation over 3,400 beds across the major capital cities, Sydney, Melbourne and Brisbane. Iglu has a strong hospitality management platform and operates its buildings along hotel service lines.

Key features of the hospitality service include a 24/7 reception and student concierge service. The property will also have an alarm system, which will include 36 lower ground floor residences. The completed development at 74-75 Carlton Crescent will be managed by a 24/7 on-site hospitality team with up to 8 staff with a minimum of 2 staff on duty at any one time that will be trained and able to action the FRMP procedures. The staff on site will include:

- 1 x General Manager
- 2 x Customer Service Coordinators
- 4 x Resident Leaders
- 1 x Facilities Manager

2.0 Flood Behaviour

The building has been designed to ensure that there is protection for the development in the the Probable Maximum Flood (PMF) Storm Event due to the unusually quick flood water increase response for this site as out lined outlined in the Flood Impact Assessment prepared by WMA water (utilising Inner West Council's Hawthorne Canal Flood Model) as shown in the following figure.

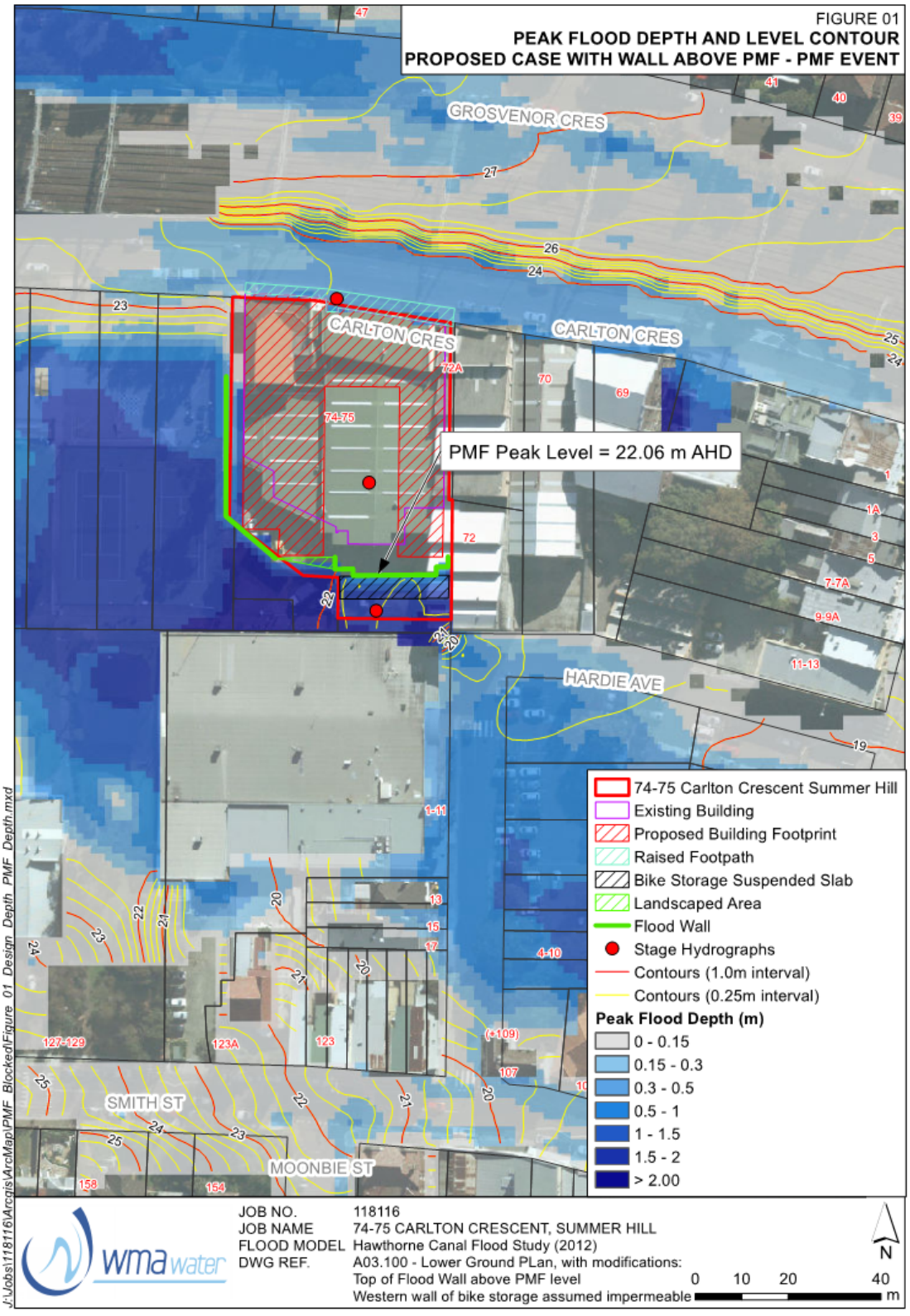

Figure 1: PMF Flood Level/Extent
Source: 74-75 Carlton Crescent Flood Impact Assessment, Prepared by WMAwater

The assessment confirms that for the PMF event, flooding could be caused by PMF in the lower level of the site including the courtyard. Accordingly, and consistent with the Council's Ashfield Development Control Plan (DCP) 2016 a site Flood Response Plan is to be prepared for utilisation in the case of a PMF event.

TTW recommends that evacuation in place is appropriate for the PMF flood condition and that lower ground residents* be moved to the upper floors of the development in the event that any flood event produces flows greater than 300mm deep in the southern pedestrian walkway. The 300mm flood depth is equivalent to the 1 in 100-year flood event level before the PMF flood level which is some 1.50m higher

There is a self-raising flood gate (upto 2.4m wide) between the courtyard and the southern lane connection. In the event of a 100year storm event the self-raising flood gate will extent to the PMF height through buoyant uplift from a grate in the lane way which will require 6 monthly certification to ensure its operational performance.

In the event of a 100year storm event a failsafe is also provided for, where there will be opportunity to place demountable flood barriers behind the flood gate. The demountable flood barriers will not impact the operation of the flood gate, but will provide an additional barrier/treatment to the PMF event. After the Incident Controller has confirmed that ponding is to 300mm depth in - the staff is also responsible to clamp in place demountable flood barriers behind the flood gate to the PMF height – and that the demountable flood barriers are located in close vicinity and easily accessible.

3.0 Preparation for Flood Response

3.1 Education

Resident awareness of flooding is a significant issue within the floodplain due to the infrequency of severe floods and the anticipated depths of these floods in a PMF event.

3.1.1 Staff

As part of the preparation for a flood event, the staff managing the 24/7 reception and student concierge service will be made aware of the flood risk and their obligation to evacuate the ground floor when flood flows in the southern lane exceed 300mm depth. Inductions will be held to educate staff on their role during a flood event. Staff to keep record of resident briefings.

3.1.2 Residents

Residents are to be made aware of the flood risk and the response requirement during a flood event which creates overland flow in excess of 300mm in the southern pedestrian connection. As part of this procedure, evacuation drills should be conducted regularly to ensure residents are aware of the procedures for sheltering on the ground floor level.

3.2 Evacuation Drills

It is recommended that evacuation drills be held at a minimum of twice yearly to ensure all residents and staff are aware of and familiar with their flood response actions, the sound of the alert and occupancy warning system, and the location of the assembly point.

All staff will be trained in the flood response procedures with mandatory drills to be conducted twice a year as per Iglu Summer Hill's Work Health Safety (WHS) calendar. Personal safety awareness sessions will be conducted at the start of each semester or three (3) time a year.

3.3 Flood Emergency Kit

A Flood Emergency Kit should be prepared prior to a flood event taking place and regularly checked to ensure that supplies within the kit are sufficient and in working condition. This check could occur after the evacuation drill takes place to provide a regular schedule. The Kit should include:

- Radio with spare batteries;
- Torch with spare batteries;
- First aid kit and other medicines;
- Candles and waterproof matches;
- Waterproof bags;
- A copy of the Site's Emergency Management Plan; and
- Emergency contact numbers.

This Emergency Kit should be stored in a waterproof container and is the responsibility of the First Aid Officer.

4.0 Coordination of Flood Response Warnings and Orders

IGLU Staff will decide when to issue Flood Response Warnings and Orders for the site.

A water level sensor device will be provided at the landscaped area south of the communal area as shown in the Figure 1.0. The flood water level sensor will be set up to provide early flood warning when flood water reaches 300mm deep in the in the southern pedestrian connection to provide early warning.

The early warning system installed will be connected to the 24/7 reception and student concierge service, Iglu's Incident Controller, to distribute these warnings to residents.

Th

The Incident Controller will initiate a flood response and occupant warning through a Public Address (PA) system including continuous bell that can alert residents and staff in the event of an emergency immediately followed by door to door entry** to each accommodation located at lower ground level.

Flood Response Plan	
Alarm Condition	Recommended actions
1) Local Councils or Bureau of Meteorology issues an alert, advice or warning.	Iglu's Incident Controller to observe ponding levels in Southern Laneway.
2) Flood Water level sensor sending alert High flooding level when depth of ponding in the Southern Laneway equals or exceeds 300mm.	Iglu's Incident Controller to confirm the ponding is to 300mm depth. If it is then place demountable flood barriers behind the flood gate. The demountable flood barriers will not impact the operation of the flood gate, but will provide an additional barrier/treatment to the PMF event. After the Incident Controller has confirmed that ponding is to 300mm depth in - the staff is also responsible to clamp in place demountable flood barriers behind the flood gate to the PMF height. The demountable flood barriers are to be located in close vicinity and easily accessible.
	Send an alert and occupant warning message over the PA system confirming a major flood event. Announce that there is water over the laneway.
	Immediately commence door to door entry to each accommodation at Lower Ground Level evacuating them to Ground level above systematically to communal lounge and study area where a headcount will be undertaken and numbers reported to the

	incident controller.
	Confirm any remaining people in the lower ground level have been evacuated.
3) Alert will remain in place for approximately 2 hours or such time that the ponding depth recedes	Confirm that there is no ponding in the courtyard. Once floodwater subsided below 300mm in the southern laneway, the lower ground floor would be inspected by the incident controller. Once it has been confirmed that the water level has reduced in a level of less than 300mm in the southern laneway for a period of at least 2 hours and if determined safe a final headcount would be undertaken. Upon confirmation of all persons safe and accounted for the incident controller may announce that residents can return to lower ground floor and courtyard and remove the flood barriers
4) Flooded areas are to remain off limits until ponding is cleared. The directions of police and SES are to be followed at all times.	

*(** Note: Note that Iglu Incident Controller will have access keys to all accommodation in case of emergency)*

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Technical Director

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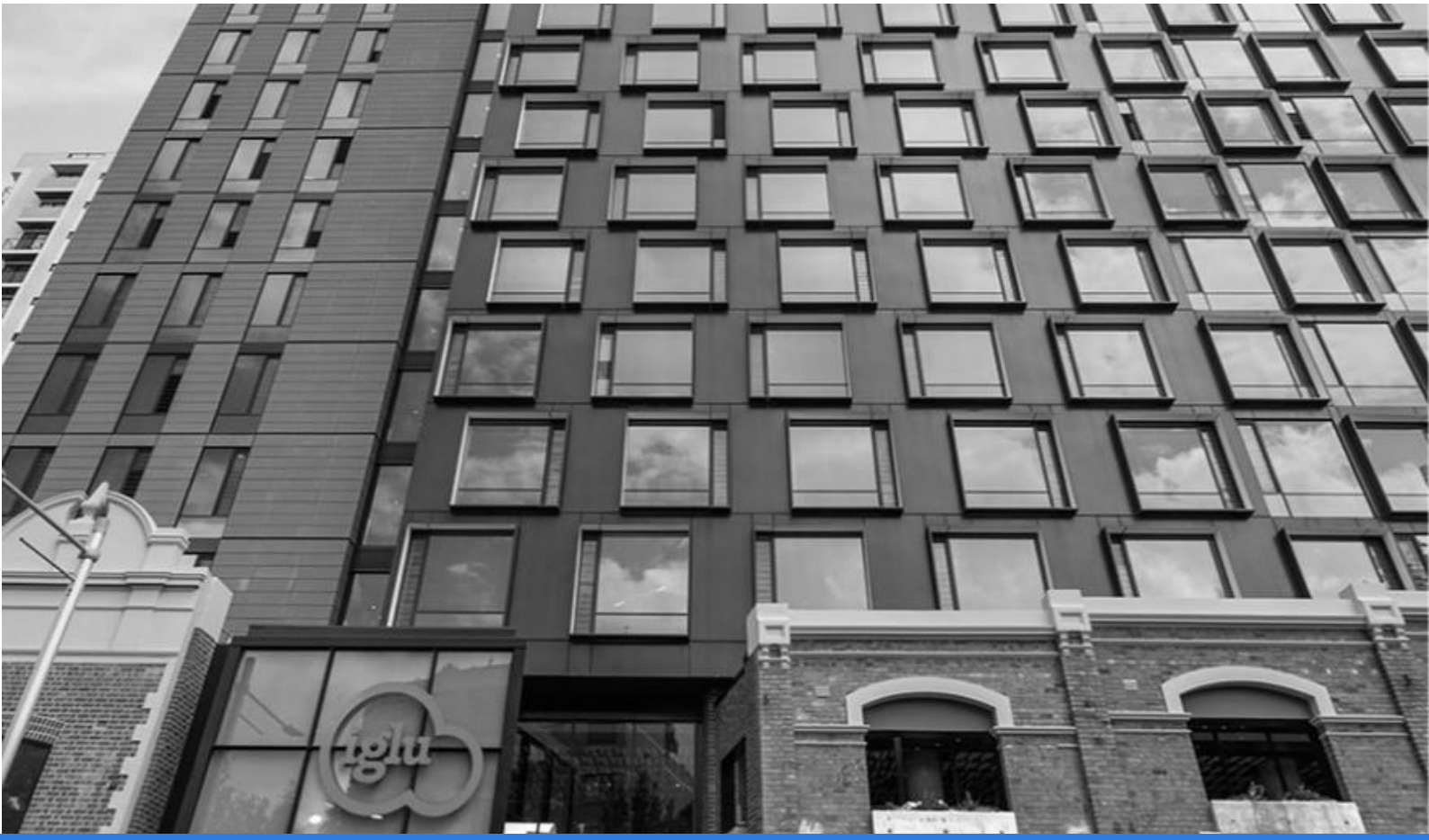
Appendix 3 – Green Travel Plan



Proposed Student Accommodation at 74 Carlton Crescent, Summer Hill

Green Travel Plan

Prepared for:

Iglu Pty Ltd

13 September 2019

The Transport Planning Partnership

Proposed Student Accommodation at 74 Carlton Crescent, Summer Hill

Green Travel Plan

Client: Iglu Pty Ltd

Version: Final 04

Date: 13 September 2019

TTPP Reference: 19115

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
Final	26/04/19	Charbel Hanna	Oasika Faiz	Ken Hollyoak	Ken Hollyoak
Final 02	01/05/19	Oasika Faiz	Oasika Faiz	Ken Hollyoak	Ken Hollyoak
Final 03	12/09/19	Oasika Faiz	Oasika Faiz	Ken Hollyoak	Ken Hollyoak
Final 04	13/09/19	Oasika Faiz	Oasika Faiz	Ken Hollyoak	

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APPENDICES

1 Introduction

1.1 Background

The proposed student accommodation is located at 74 Carlton Crescent, Summer Hill. The development would involve the construction of a new three to four storey student accommodation building with 184 rooms and ancillary common areas (living rooms, laundry, waste rooms etc). The development also proposes a bicycle storage area with capacity for 52 bicycles.

The proposed development does not include any on-site car parking provisions as is typical of student housing developments and other Iglu sites. Iglu currently operate several student housing facilities and over 3,000 beds, in Sydney, Melbourne and Brisbane which have no car parking provisions. Iglu operate with a philosophy that encourages staff and students to use sustainable transport modes (i.e. public transport, cycling and walking) and has successfully operated with no complaints from students on the lack of parking provision or from Councils about students driving and parking off-site.

The Transport Planning Partnership (TTPP) has prepared this Green Travel Plan (GTP) on behalf of Iglu Pty Ltd to manage the future travel demand following the occupation of the development.

The implementation of this GTP, in combination with no on-site car parking provisions, will be key to ensuring that students and staff are encouraged to use sustainable transport.

1.2 Types of Travel Plan

There are two distinct types of travel plans:

1. To change the travel behaviour at an existing site (i.e. reduction of car use, especially if only used by one person). Such plans would be implemented at large administrational buildings (e.g. government hospitals). This would aim to achieve a modal shift when compared against a stated benchmark. This would include monitoring the plan over a period after opening with more measures introduced if stated objectives were not achieved.
2. To influence the travel behaviour of a site prior to it being occupied. This can include such measures as locating the site next to a railway station, reducing on-site parking (especially for commercial buildings). Providing information and ensuring the development ties in with the sustainable active travel initiatives outside of the site. This travel plan would aim to achieve a lower car driver mode upon occupation compared with comparable sites.

This GTP falls into the latter category where the majority of green travel initiatives are provided prior to occupation of the site. However, Iglu would provide ongoing monitoring of its site once occupied to update the GTP measures as required and ensure appropriate travel outcomes.

1.3 The Role of a Green Travel Plan

The purpose of a GTP is to encapsulate a strategy for managing travel demand that embraces the principles of sustainable transport. In its simplest form, this GTP encourages use of transport modes that have low environmental impacts, for example active transport modes including walking, cycling, public transport, and better management of car use.

Active transport presents a number of interrelated benefits including:

- improved personal health benefits
- reduced traffic congestion, noise and air pollution caused by motor vehicles
- greater social connections within communities, and
- cost savings to the economy and individual.

In order to ensure that the GTP meets its intended objectives, a review of '*best practice*' guidelines such as the City of Sydney '*Guide to Travel Plans*' and '*The Essential Guide to Travel Planning*' prepared by the United Kingdom Department of Transport, has been undertaken.

From the above review, the key themes applicable to the GTP include:

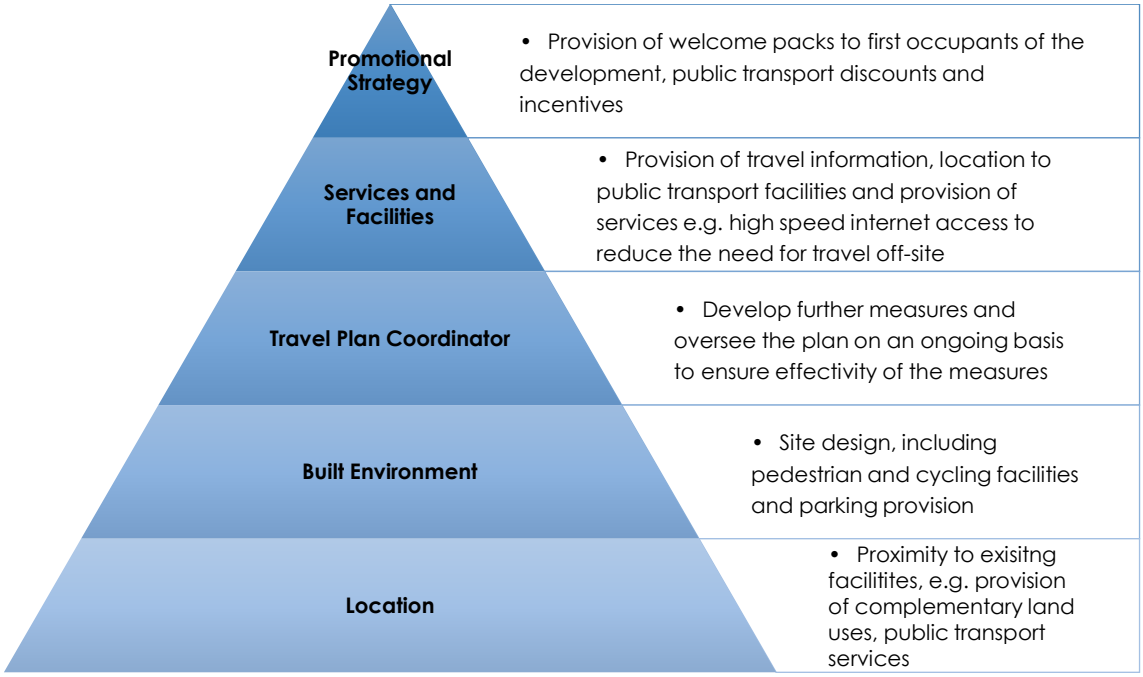
- **Site audit and data collection:** A desktop audit has been undertaken in order to identify and document the existing issues and opportunities relevant to site and its accessibility particularly by non-car modes. Opportunities to improve amenity, incentivise non-car travel and remove barriers to the use of sustainable transport modes are then dealt with under the Site-Specific Measures, detailed in Section 5.1. Notably, as the site is not currently occupied by the proposed development, travel surveys at a similar development have been used to inform the baseline data for modal splits to/from the subject site.
- **Audit of policies:** An audit of key policy documents has been undertaken to assist with defining the direction and purpose of the GTP, aligned with the key targets and objectives from a local and regional perspective.
- **Private vehicle travel management:** This GTP provides a strategy to reduce travel by private vehicles with nil car parking provision.
- **Local alliances:** The development of relationships between the Proponent and various stakeholders (such as the Council, the Roads and Maritime Services and Transport for New South Wales) will assist the Proponent in delivering improved transport options.

1.4 Travel Plan Pyramid

The GTP will need to be tailored to the proposed development site to ensure appropriate measures are in place for the different land uses to promote a modal shift away from car usage.

The key elements of the GTP are shown in the Travel Plan Pyramid in Figure 1.1.

Figure 1.1: Travel Plan Pyramid



All elements in the Travel Plan Pyramid are critical to the success of the GTP, but Figure 1.1 illustrates that the key foundations to ensure the success of a GTP are:

- **Location** – proximity to existing public transport services and proximity to mixed land uses, e.g. shops and services, such that walking or cycling becomes the natural choices, and
- **Built Environment** – provision of high-quality pedestrian and cycling facilities, end-of-trip facilities and reduced car parking provision to encourage sustainable transport choices.

1.5 Drivers of the Travel Plan

There are a number of social, environmental and economic drivers for developing and implementing a GTP for developments as detailed below.

1.5.1 Car Parking

Car parks utilise valuable land resources and impact amenity. If the area continues to grow and there is no modal shift towards non-car transport modes, the car parking demand could

increase significantly. As such, the provision of car parking must reflect the site's proximity to public transport to influence a modal shift to more sustainable transport modes. As the site is located within close proximity to Summer Hill Station, there is strong justification to provide significantly less or no car parking to manage travel demand to/from the site. Furthermore, the cost to provide parking is significant and therefore, there are strong economic imperatives to reduce car parking demand by incentivising non-car travel modes i.e. to provide affordable housing for students.

1.5.2 Environmental Impacts

The transport sector (road, rail, air and ship) is Australia's third largest source of greenhouse gas emissions (GHG), accounting for 18 per cent of emissions in Australia in 2015 (Climate Council of Australia, 2016). Mitigating this impact is a key driver of the GTP. Within Australia, the transport sector has the highest rate of growth of GHG emissions per year having risen by 51 per cent since 1990 with private vehicles responsible for almost half of transport emissions. In comparison, travel modes such as walking and cycling have the lowest emissions while public transportation has significantly lower impact than the private vehicles. Notably, Inner West Council has committed actions to reduce carbon emissions and reduce its environmental impact by some 4,000 tonnes of CO2 every year. These actions include major infrastructure upgrades such as the provision of LED street lights and solar power supply to facilities and also discrete measures such as encouraging residents to ride a bike, walk and use public transport.

1.5.3 Health Benefits

The use of sustainable transport modes can have wide-ranging health benefits due to a corresponding reduction in greenhouse gas emissions and increase in physical activity from walking and cycling. The shift from private cars to sustainable transport "can yield much greater immediate health "co-benefits" than improving fuel and vehicle efficiencies" (World Health Organisation, 2011). The potential benefits can include reduced respiratory diseases from better air quality, prevention of heart disease, some cancers, type 2 diabetes and some obesity-related risks.

1.5.4 Social Equity

Transport has a fundamental role in supporting social equity, that is the equitable distribution of services, amenities and opportunities. The provision of sustainable transport modes can provide a more affordable alternative to car use. As such, it offers better mobility for women, children, young people, the aged, persons with disabilities and the poor, who have less access to private vehicles, thereby enhancing social equity.

1.5.5 Site Attraction

Provision of high-quality transport facilities (public transport, cycling and walking infrastructure) has a significant impact on the accessibility and therefore attractiveness of a site. Negative experiences and costs associated with travel can reduce the competitiveness of a student accommodation site. High quality and efficient transport systems are key to attracting and retaining students. Support for active transport modes is also highly desired by students, because it improves health and productivity.

1.5.6 Education and Leadership

Student accommodation sites would have a large number of new persons coming through each year and as such, the student accommodation provider would have a unique opportunity to educate students into sustainable travel behaviours. These travel behaviours can help shape long-term travel behaviours that extend long after their completion at the organisation. Successful travel planning and education can reduce traffic impacts on the road network while potentially supporting a positive influence on local areas by raising public transport service demand and improving amenity.

1.6 Transport Objectives

The following objectives have been identified in order to achieve the vision of the GTP:

Objective 1: Facilitate a modal shift towards more sustainable transport modes

- Improve access, safety, amenity and convenience of sustainable transport modes for travel to/from the site
- Incentivise sustainable transport modes and establish a culture of active and public transport use, and
- Improve awareness and knowledge of transport options available in the area.

Objective 2: Reduce car ownership and promote car share use

- Improve awareness and access to car share facilities available within the area
- Incentivise car share use as an alternative to owning a car, and
- Provide nil. car parking on-site to manage car use and ownership.

Objective 3: Reduce the need to travel off-site

- Provide amenities on-site to reduce travel requirements for students, and
- Encourage social interactions amongst students residing in the building to create a vibrant community on-site.

2 Existing Transport Policy Context

2.1 Summary of Key Policy Directions

The review of existing relevant policy clearly illustrates a number of themes that should inform the approach to ongoing management of transport demand, and investment in the transport network. These themes include:

- provision of high-quality local transport infrastructure, improved bike paths and networks, and improving accessibly and connectivity
- address car parking issues in key locations, including residential and business districts, and encouraging active transport
- create connected, liveable communities where people can walk, cycle and use public transport to promote healthier, active communities.

A summary of the existing policy framework documents is provided in Table 2.1.

Table 2.1: Summary of Policy Framework

Policy/Strategy	Key Aims/Objectives/Goals
Inner West Council	
General Strategy	Inner West council is committed to effectively managing and improving the ability for all residents and visitors to move around the LGA with ease. Council is committed to reducing car usage and increasing the use of public transport, walking and cycling. Council's aim is to increase the vibrancy of local neighbourhoods, reduce traffic congestion, enable better parking options, improve air quality and improve access to local places.
Active Transport Strategy	The strategy has been prepared to encourage more people to take up healthier transport options such as walking and cycling in the Cooks River to Iron Cove GreenWay. The GreenWay is a 5.8km environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove. It sets out a range of short and long-term initiatives that encourage more people to use the GreenWay for walking and cycling and make it attractive and convenient for users of all ages.
Parking Strategy	This strategy is developed to deliver a better balance of parking space for residents, businesses, shoppers, commuters and others. This would be all done while maximising the parking space already in place and delivering new appropriate spaces to manage changing parking needs over time.
NSW State Government	
New South Wales Long Term Transport Masterplan (NSW State Government, 2012)	The NSW Long Term Transport Masterplan guide the NSW Government's transport funding priorities over the next 20 years. As part of this Plan, a long-term action is to build a Second Sydney Harbour rail crossing, new CBD line and new CBD stations that will connect Redfern to Chatswood via the CBD. These new stations will relieve pressure on Central, Wynyard and Town Hall Stations. In addition to this, the Plan intends to upgrade the existing Redfern Station to address station access and connectivity issues and provide safe and convenient interchange with bus, pedestrian and cycle routes.
Future Transport Strategy 2056	The Strategy aims to increase the mode share of public transport services and reduce the use of single occupant vehicles. The Proposal will look to reduce private vehicle travel, aligning with the objectives of the Strategy.

Policy/Strategy	Key Aims/Objectives/Goals
Greater Sydney Region Plan: A Metropolis of Three Cities – Connecting People	The site is well located to contribute towards creating a 30-minute city. The close proximity of the site to the Summer Hill Station means students can easily access the site via public transport modes. The site thus aligns with the objectives of the Plan in creating accommodation near jobs, services, education and public transport facilities to contribute towards a 30-minute city.
Sydney's Cycling Future, Cycling for Everyday Transport (NSW State Government, 2013)	Sydney's Cycling Future's key strategy is to improve cycling infrastructure. The Three Pillars of Sydney's Cycling Future include: ▪ investing in separated cycleways ▪ providing connected bicycle networks to major centres and transport interchanges promoting better use of our existing network; and, ▪ engaging with our partners across government, councils, developers and bicycle users.

2.1.1 Greater Sydney Region Plans: 30-minute City

As indicated above, the Greater Sydney Commission's Greater Sydney Region Plan, the key purpose of the plan is to deliver a 30-minute city where jobs, services and quality public transport spaces are in easy reach of residences.

However, a recent study conducted by Deloitte Access Economics found that only 75 of the 313 Sydney neighbourhoods could currently be deemed to have easy access to major job hubs and other key services within half an hour. Based on the findings of the Deloitte study and work undertaken by Arup, a number of key performance criteria have been identified in order to achieve a 30-minute city:

- **Access to healthcare** – hospitals provide an important facility to many people and play a role in employment, education and training facilities. Parking is often limited at hospitals and as such, access via a variety of transport modes is required.
- **Access to retail services** – access to all forms of retail (supermarkets and specialist stores) is essential to achieve a 30-minute city. There has already been an increase in the number of mixed-use developments within Sydney to create micro-communities, which provide mixed retail services, residential, commercial and community facility uses.
- **Access to schools** – access to good schools relies on housing affordability, which also shape where teachers live. In particular, many students have good access to local schools, however some have to travel outside their catchment areas for specialist and selective schools. As such, it is important to create strong transport link to provide good access to local schools and connect teachers with their place of residence and work.
- **Access to further education facilities** – public transport links for TAFE and universities are vital as students and teachers often travel out of the local catchment to the educational facility as they are often located in areas with high property prices.
- **Quality of public transport facilities** –Whilst Sydney is a liveable city; it is often constrained by transport issues. As such, the provision of good quality, reliable public transport facilities are essential to achieve a 30-minute city.

- **Access to jobs** – people being able to live close to their jobs is fundamental to delivering a 30-minute city. The current Sydney CBD has the highest concentration of jobs but as found by the Deloitte study, the average one-way commute for those travelling into the CBD from outside the city is 63 minutes. The locations with the best access to jobs currently are located near railway stations, or close to major employment centres such as the Sydney CBD.
- **Access to residents** – a way of minimising travel needs is to locate jobs and services close to where residents live.

The subject site is located in close proximity to tertiary and further education institutions such as University of Sydney, University of Technology Sydney, University of Notre Dame and TAFE. Further to this, the site is also in close proximity to Sydney CBD which is a key employment hub which offers work opportunities for students, as well as abundant public transport options to/from the City.

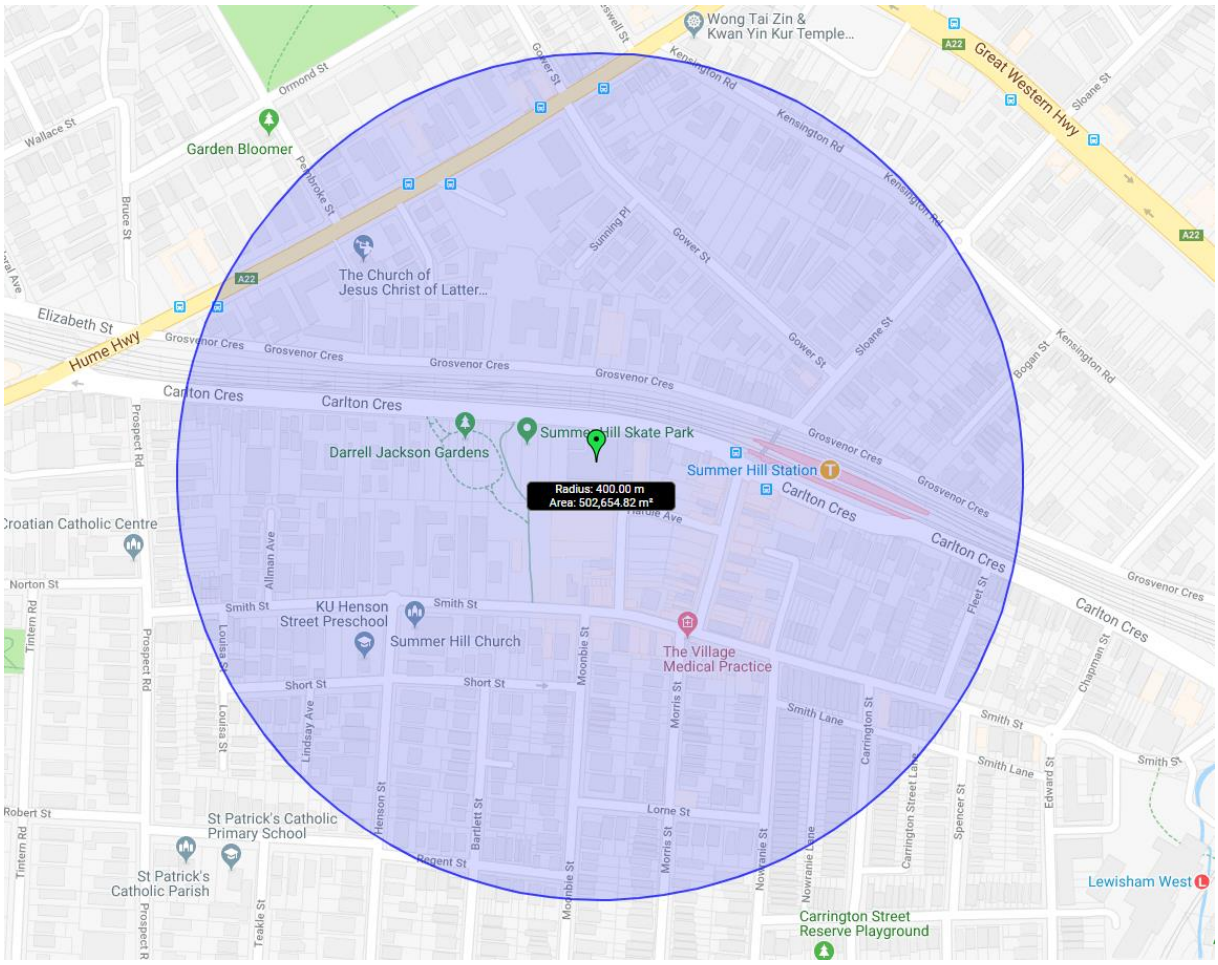
3 Existing Transport Context

3.1 Existing Public Transport Facilities

The site is well serviced by public transport, including rail and bus services, being located 200m (or a 2-minute walk) west of Summer Hill Station.

The site's proximity to existing public transport services is shown in Figure 3.1.

Figure 3.1: Site Proximity to Public Transport Facilities



Source: Nearmap

Summer Hill Station is serviced by the T2 Inner West & Leppington Line which provide connections to various destinations across the Sydney Metropolitan area including the Sydney CBD.

The site, via Summer Hill Station is a 13-16 minute trip to Redfern and Central Stations, where several major universities are located including University of Technology Sydney, University of Sydney and Charles Sturt University and TAFE NSW. Redfern and Central Stations provide a central hub to access the wider transport network in Sydney.

A summary of rail services and associated peak hour frequencies at Summer Hill Station is provided in Table 3.1.

Table 3.1: Train Services at Summer Hill Station

Route	Route Description	Typical Weekday Frequency	
		Morning Peak	Evening Peak
T2 Inner West and Leppington Line	Parramatta or Leppington to City	5 mins	10-15 mins
	City to Parramatta or Leppington	15 mins	15 mins

The subject site is also within a 10-minute walk to the light rail and bus services. Lewisham West Station is located some 900m to the south-east and services the L1 Dulwich Hill Line, providing light rail services between Dulwich Hill and Central. The L1 Dulwich Hill line provides services to Central every 5-8 minutes in the AM peak and has a travel time of approximately 32 minutes from Lewisham Station.

Frequent bus services are located along Parramatta Road with the eastbound bus stop located within 650m from the site and the westbound stop within 850m. In addition to this, night ride services are provided at Summerhill Station, located 200m from the site.

Table 3.2 presents a summary of the existing bus routes and associated frequencies within the immediate vicinity of the site.

Table 3.2: Summary of Bus Routes and Frequencies

Route	Nearest Bus Stop Distance from Site	Route Connectivity	Typical Weekday Frequency During Peak Hour
461	650-850m	Burwood to City Domain	10 mins
480	650-850m	Strathfield to Central Pitt St via Homebush Rd	15-20 mins
483	650-850m	Strathfield to Central Pitt St via South Strathfield	20 mins
413	600m	Campsie to City Martin Place	30 mins
N50	200m	Liverpool to City Town Hall	N/A; Night ride bus only

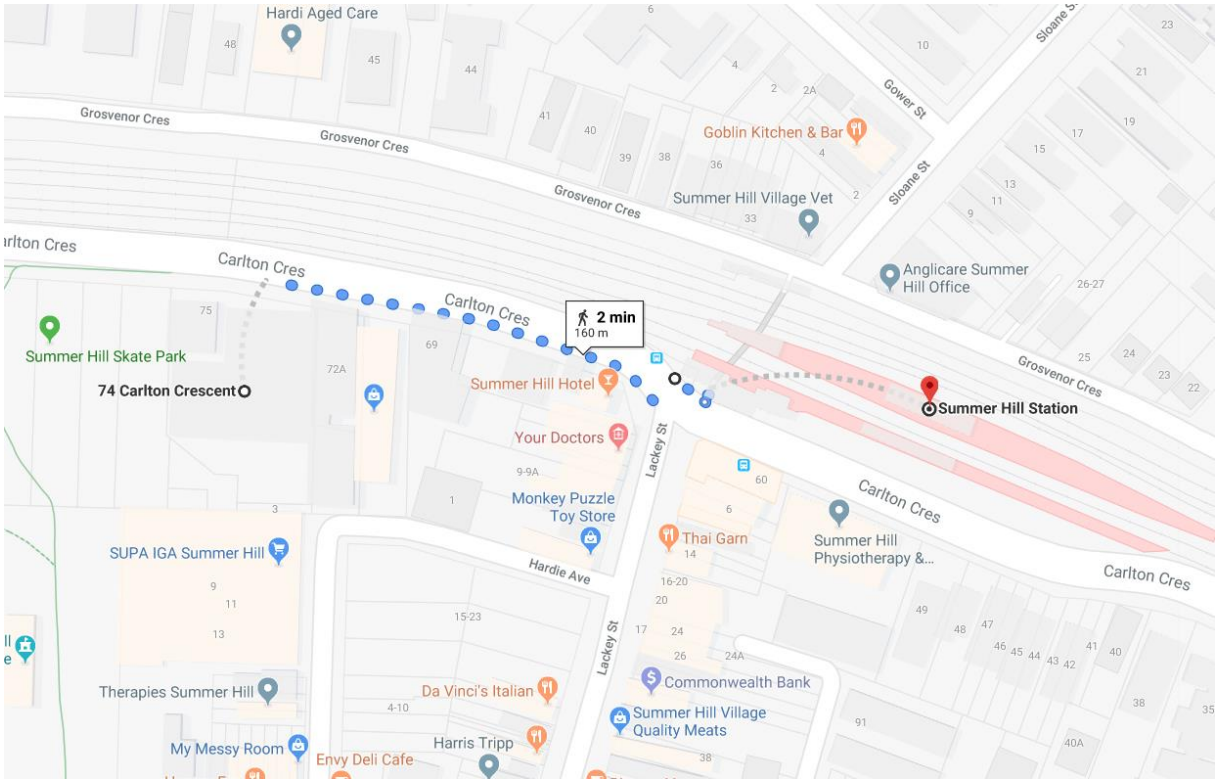
Reference: Transport for NSW

3.2 Pedestrian Infrastructure

Well-established pedestrian facilities are provided within the vicinity of the site. Sealed pedestrian paths are provided on Carlton Crescent, Lackey Street and Smith Street. Signalised pedestrian crossings are provided on all legs of in the intersection of Carlton Crescent and Lackey Street, providing safe access to and from Summer Hill Station.

The walking route from the site to Summer Hill Station is shown in Figure 3.2.

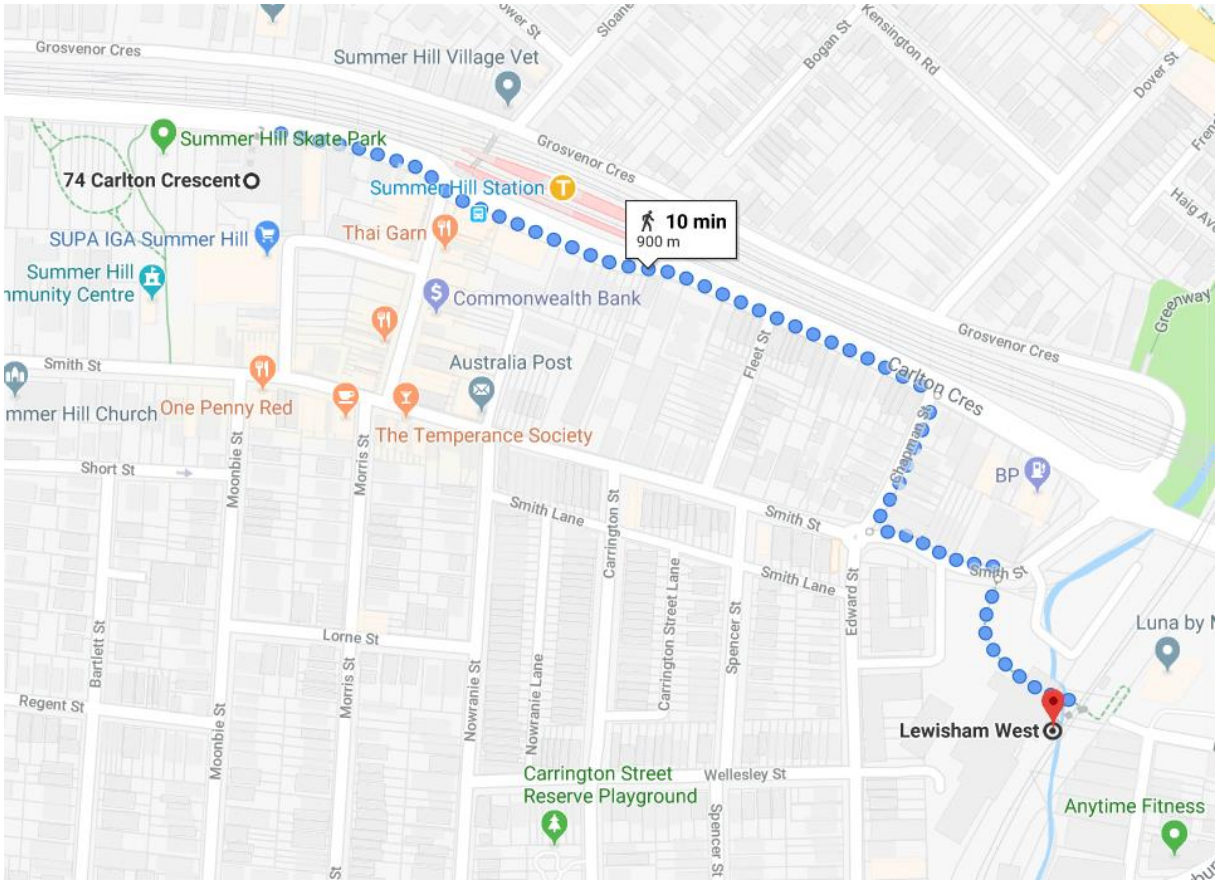
Figure 3.2: Walking Route to Summer Hill Station



Source: Google Maps Australia

As mentioned in Section 3.1, Lewisham West Light Rail Station is located some 900m east of the subject site. Given the proximity of the site, it is approximately a 10-minute walking distance to/from the station as shown in Figure 3.3.

Figure 3.3: Walking Route to Lewisham West Light Rail Station



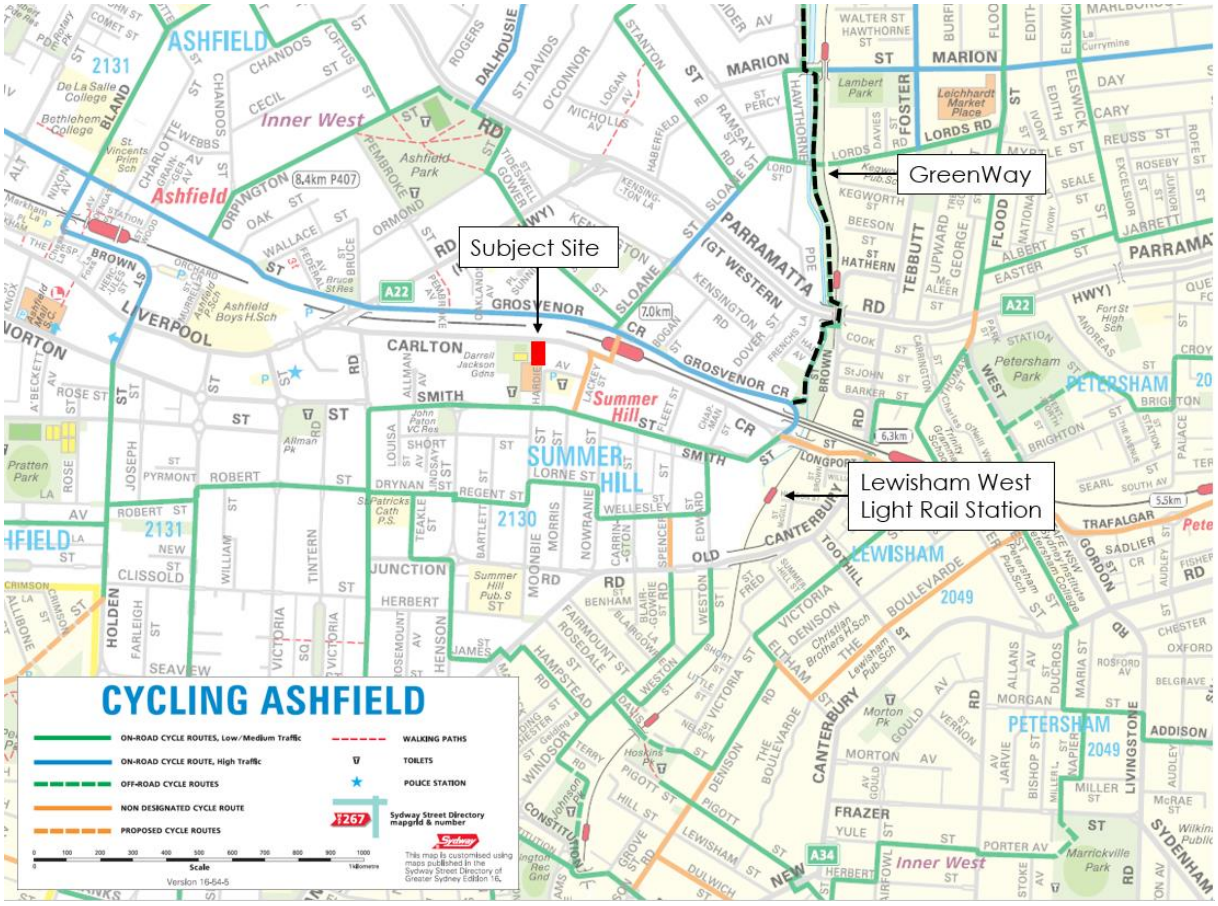
Source: Google Maps Australia

3.3 Cycling Infrastructure

On-road cycle paths are provided proximal to the site. An off-road shared path is provided along the GreenWay which runs through Haberfield, Leichhardt, Lilyfield, Rozelle etc. This shared path also connects to on-road and off-road cycling paths towards University of Sydney, University of Technology Sydney, University of Notre Dame, TAFE and Sydney CBD.

Figure 3.4 presents a map of the existing cycleways within the immediate vicinity of the site.

Figure 3.4: Cycleway Map



Source: Sydney Cycleways

3.4 Car Share Facilities

Car share schemes are a flexible, cost effective alternative to car ownership and is a convenient and reliable way for residents to use a car when they need one. GoGet is a car share company operating in Australia, with a number of pods located within the area.

Car share is a concept by which members join a car ownership club, choose a rate plan and pay an annual fee. The fees cover fuel, insurance, maintenance, and cleaning. The vehicles are mostly sedans, but also include SUVs, station wagons and vans. Each vehicle has a home location, referred to as a "pod", either in a parking lot or on a street, typically in a highly-populated urban neighbourhood. Members reserve a car online and/or telephone and use a swipe card to access the vehicle.

A study was commissioned by the International Carsharing Association in 2016[1], to review the impact of the car share services in Australia after more than a decade of operation. The study focuses on the City of Sydney council area which had about 20,000 users and 805 car share vehicles at the time of the study. The findings of the study indicate that car share users

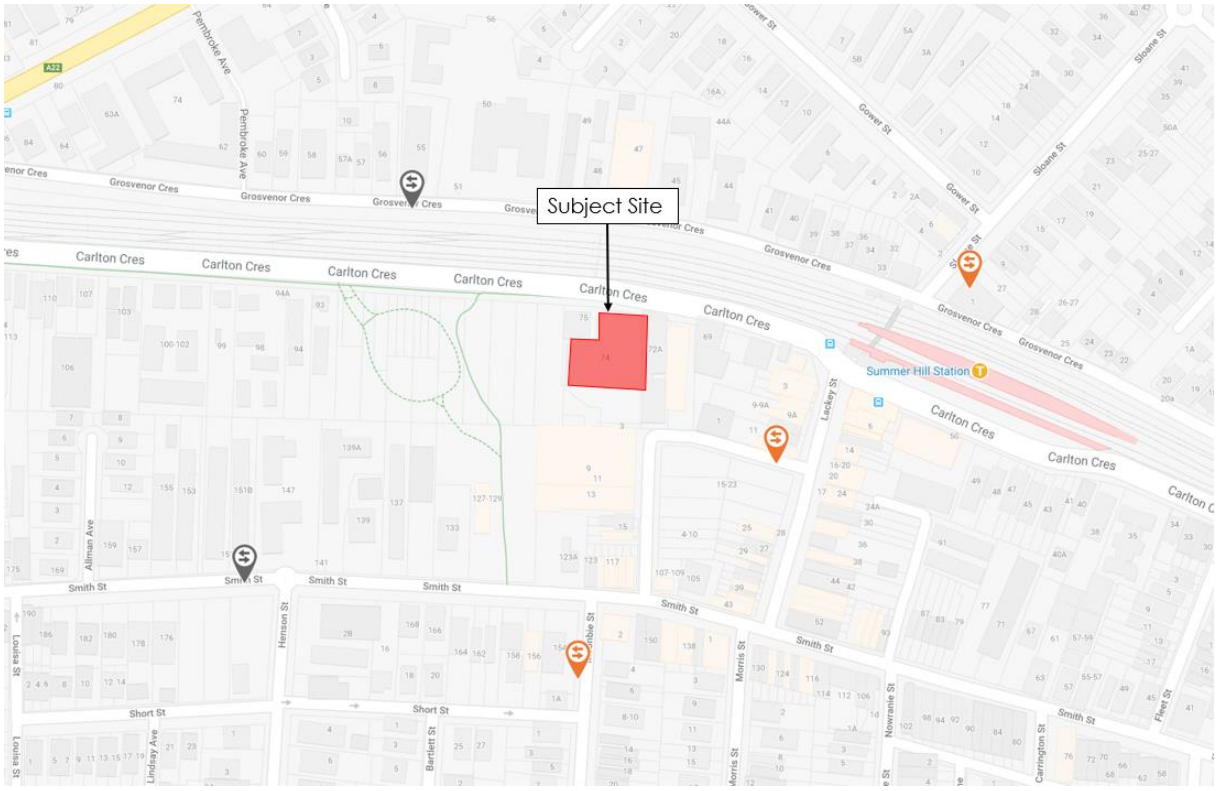
[1] *Phillip Boyle & Associates, January 2016, The Impact of Car Share Services in Australia*

reduce their overall vehicle kilometres travelled (VKT) per year by 50 per cent compared people who own a private vehicle. The resulting impact is reduced congestion on roads, lower levels of CO_2 pollution, fewer casualty accidents and an increase in use of active transport methods.

Notably, the City of Sydney Council has reported that "*a single car share vehicle can replace up to 12 private vehicles that would otherwise compete for local parking*".

Figure 3.5 shows the location of the existing GoGet pods (indicated by the yellow highlights) within the immediate vicinity (<400m walking distance) of the site.

Figure 3.5: Location of Existing GoGet Pods



Source: GoGet Australia, https://www.goget.com.au/find-cars/

Figure 3.5 indicates that there are four car share facilities available within the immediate vicinity of the site. Based on statistical information outlined above, these four car share vehicles could theoretically replace the need for 48 private vehicles in the local area.

Notwithstanding this, promoting the use of these existing car sharing facilities should be undertaken to ensure existing car share facilities are used to cater for any vehicle trips associated with the proposal if required.

3.5 Bike Share

Dockless bike share is a new program which provide users with the opportunity to ride on a bike anytime. Users will be required to download the app to reserve and unlock a bike. Bicycles can be used for return or one-way trips and can be picked-up and returned on bicycle parking areas, train stations, or even on footpaths provided that the footpath is not too busy and is wide enough so the bicycles will not impede pedestrians on the footpath.

In December 2017, six Sydney councils (including Inner West Council) devised the Inner Sydney Bike Share Guidelines. These guidelines set out expectations for bike share operators and users and apply across the six municipalities of Canada Bay, City of Sydney, Inner West, Randwick, Waverley and Woollahra.

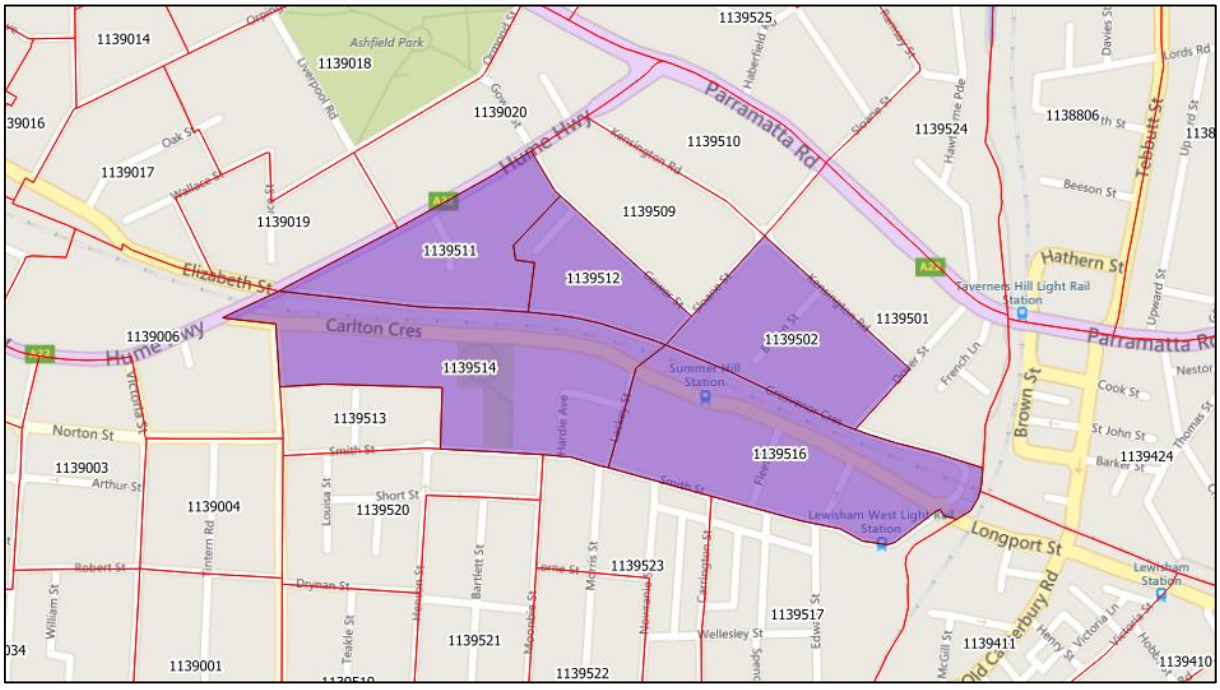
Bike sharing programs offer flexibility and opportunity for people to choose active transport for short trips, especially for those who are less likely to own bicycles.

Several dockless bike sharing services such as moBike and Lime are available in the Sydney. It is noted that Lime is an electric-assisted bike and has approximately 2,000 bikes available in the city streets since its launch in November 2018.

3.6 Existing Modal Share

2016 Census data from the Australian Bureau of Statistics (ABS) has been obtained to understand the existing method of travel to work patterns of residents living around Summer Hill Station. Five ABS statistical area 1 (SA1) zones have been selected as shown in Figure 3.6.

Figure 3.6: Selected Zones (Statistical Area 1)



The data indicates that the primary mode of travel to work for residents living in the selected areas is train with a 52% mode share and car (drivers and passenger) with a 36% mode share. The resident mode share splits are summarised in Table 3.3.

Table 3.3: Existing Mode Share of Residents

Method of Travel	Resident Mode Share
Car	36%
Train	52%
Bus	2%
Tram	1%
Bicycle	3%
Walked Only	4%
Other	2%
Total	**100%**

It should however be noted that a student population is much less likely to be car owners/drivers and consequently, the existing car use would be anticipated to be much lower.

In addition, many universities/ higher education sites are accessible by public transport:

- University of Technology Sydney (UTS) – 30min by train
- TAFE Ultimo – 30min by train
- University of Sydney (USYD) – 25 to 30min by bus or train
- The University of Notre Dame Sydney – 25 to 30min by bus or train
- Australian Catholic University (ACU) – 40min by bus.

4 Mode Share Targets

The aim of the GTP is to encourage a modal shift away from private vehicles by implementing measures that influence the travel patterns of residents living at the proposed student accommodation development. The implementation of the GTP would be regularly monitored to ensure that the GTP is having the desired effect. The success of the GTP is measured by setting modal share targets and identifying the measures and actions that have the greatest impact.

As the site is not currently occupied, the mode share targets for the site have been based on the existing mode share of residents living around the development site. However, a student accommodation development is likely to lean more towards non-car modes of transport than general residential, with students typically preferring public transport. This is influenced by the fact that many universities are situated around good public transport and poor car accessibility. A large number of students living at said student accommodation sites are internationally based and are therefore not willing to invest in a car or motorcycle, nor are they motivated to obtain relevant driving licenses because of their relatively short stays

Additionally, the development site does not include any car parking provision and is well situated in relation to proximity to services and facilities e.g. the supermarket IGA Summer Hill is located directly south of the site, and other services (bank, medical centres) is located within walking distance.

On this basis, it is considered that the target mode shares for the site would not favour car as a mode share. As such, a baseline target of 0% car mode share and 75% train share has been set for this GTP.

The overall mode share targets for the proposal are summarised in Table 4.1.

Table 4.1: Mode Share Targets

Method of Travel	Existing Resident Mode Share	Target Student Mode Share
Car	36%	0%
Train	52%	75%
Bus	2%	8%
Tram	1%	5%
Bicycle	3%	6%
Walked Only	4%	4%
Other	2%	2%
Total	**100%**	**100%**

5 Methods of Encouraging Sustainable Transport

To achieve the objectives of the GTP, measures will be put in place to influence the travel patterns to/from the site, with a view to discourage car usage from Day One.

5.1 Site Specific Measures

5.1.1 Provision of Nil Car Parking

Student accommodation sites are categorised as "boarding houses" and therefore, practitioners assess the parking requirements under the State Environmental Planning Policy (Affordable Rental Housing) 2009. However, in retrospect, these parking requirements are considered onerous for student accommodation sites for the following reasons:

- student accommodation sites do not typically generate a demand for car parking as such sites are specifically targeted at students who do not have a car and attend nearby tertiary educational campuses that are also easily accessible by public transport
- the site has been specifically chosen as it is located near high frequency public transport and local amenities, services and recreational facilities to remove the need for car travel.

Furthermore, students would not be permitted to seek resident parking permits from Council with signage on-site and a notice included in all students welcome email/ package indicating this.

In addition, students will be informed of alternative modes of transport to the site from key locations (e.g. airport). The welcome email for the subject Summer Hill site will also iterate the lack of parking availability on-street as well as on-site. An example of a welcome email for an existing Iglu student accommodation site is provided in Attachment B.

In this regard, it is proposed to provide nil car parking for the site. This is consistent with other student accommodation sites across Australia by Iglu and other major student accommodation providers such as Urbanest and SCAPE. In fact, the provision of nil car parking is one of the critical factors to ensure that the mode share target of 0 percent car drivers can be met for the site.

5.1.2 Walking and Cycling

The student accommodation provider should consider establishing a student walking and cycling group, where all students would be invited to walk and/or cycle together around the neighbourhood, followed by recreational activities/special events within the site. This initiative

would help promote and encourage social inclusion, as well as promote walking and cycling as the choice of travel.

5.1.3 Public Transport

Public transport maps will be provided on newsletters, websites, social media to make students more aware of the alternative transport options available in the area. The format of the map will be based upon the travel access guide. This travel access guide will form part of a welcome pack for all students to ensure that they are made aware of the available transport options. In addition to this Iglu provide their residents with a Welcome Email (as shown in APPENDIX B) which informs students of public transport options to the site from Sydney Airport, as well as the necessary requirements to make use of public transport in Sydney, i.e. the possession of an Opal card. This ensures that travel patterns can be influenced from day one to establish better transport habits at the start of occupation.

5.1.4 Car Sharing

As detailed in Section 3.4, there are a number of existing car share facilities (e.g. GoGet) within the immediate vicinity of the site. If car use is required, students will be encouraged to use existing car share facilities in the area. Information of the existing car share facilities within the immediate vicinity of the site will be made available to all students as part of the welcome pack. Notably, students receive a low membership fee option as part of the GoStudent membership. It is recommended that the student accommodation provider negotiate a bulk deal with GoGet to ensure students residing at the proposed development have the best options available.

5.1.5 Off-site Measures

The provision of high-quality internet services will also be provided to enable students to study on-site, rather than travelling off-site to a library or campus. This would also be accompanied by the provision of dedicated study rooms, lounge and game areas, quite areas, cinema rooms and a gym for students residing in the building to create a vibrant community such that all the essentials for a student are made available on-site to negate the need to travel off-site.

5.2 GTP Information

The information provided within the GTP will be provided to students in the form of a package of easy to understand travel information known as a Travel Access Guide (TAG). This will be included in the welcome email provided to students prior to occupation. An example of a welcome email sent to students at an existing Iglu student accommodation site is provided in Appendix B.

TAGs provide customised travel information for people travelling to and from a particular site using sustainable forms of transport – walking, cycling and public transport. It provides a simple quick visual look at a location making it easy to see the relationship of site to train stations, light rail stations, bus stops and walking and cycling routes.

Such TAGs encourage the use of non-vehicle mode transport and can reduce associated greenhouse gas emissions and traffic congestion while improving health through active transport choices.

They can take many forms from a map printed on the back of business cards or brochures. Best practice suggests that the information should be as concise, simple and site centred as possible and where possible provided on a single side/sheet. If instructions are too complex, people are likely to ignore them.

A draft TAG has been prepared for the site in the form of a brochure and is provided in **Appendix A**. Iglu will provide the TAG at their touch screens in the lobby (an example of current practice: https://redfern.myiglu.com.au/information-map/) and included in their Quick Guides that are given out to students as part of their Welcome Pack upon check-in. The Quick Guides also include bike storage information and amenities within walking distance.

In addition, there would be active management on-site that would assist students with their travel needs and queries and offer students the TAG or further information as required.

5.3 Information and Communication

Several opportunities exist to provide residents and visitors with information about nearby transport options. Connecting residents and visitors with information would help to facilitate journey planning and increase their awareness of convenient and inexpensive transport options which support change in travel behaviour.

Transport NSW info

- Bus, train and light rail routes, timetables and journey planning are provided by Transport for New South Wales through their Transport Info website: http://www.transportnsw.info/

Sydney Cycleways

- City of Sydney provides a number of services and a range of information to encourage people of all levels of experience to travel by bicycle. http://sydneycycleways.net/

Similarly, such phone apps as TripView display Sydney public transport timetable data and shows a summary view showing current and subsequent services, as well as a full timetable viewer. This timetable data is stored on the phone, so it can be used offline.

Connecting students via social media may provide a platform to informally pilot new programs or create travel-buddy networks and communication.

Iglu is currently undertaking research and development for mobile app to enable students to have easy access to information and news via their mobile phones. The mobile app is anticipated to include the information presented in the TAG and any new initiatives run by Iglu to promote sustainable travel solutions, plus information as presented in their Quick Guides and the myiglu webpage.

5.4 Actions

A summary of the key strategy and framework action table is shown in Table 5.1. It should be noted that this framework action table will be updated as required. However, it is stressed that the availability of the suggested strategies from Day 1 upon occupation is a key factor in influencing travel patterns.

Table 5.1: Framework Action Table

Action	Objective	Responsibility	Timeline
1. Provide nil car parking	1, 2	Proponent	Prior to Occupation
2. Provide secure bicycle parking	1	Proponent	Prior to Occupation
3. Provide public transport noticeboard at key locations within the site in the form of a travel access guide. This will also be posted on student accommodation provider's website and included as part of the welcome pack distributed to all students prior upon occupation.	1, 2	Travel Plan Coordinator	Prior to Occupation
4. Provide high quality telecommunication services and complementary uses on-site	3	Proponent	Prior to Occupation
5. Provide students with a TAG on day one of occupation and post the TAG on noticeboards, front entrances, website, social media etc.	1, 2, 3	Travel Plan Coordinator	Upon Occupation
6. Provide discounted GoGet memberships for students and provide information of existing car share facilities in the area as part of the welcome pack for all students	2	Proponent/ Travel Plan Coordinator	Ongoing
7. Establish Walking Groups and Bicycle User Groups with associated online forums	1, 2, 3	Travel Plan Coordinator	Ongoing
8. Ongoing review of the GTP to introduce additional measures as required	1, 2, 3	Travel Plan Coordinator	Ongoing
9. Development of an Iglu mobile app that would provide students easy access to all information including the TAG.	1, 3	Travel Plan Coordinator	Ongoing

6 Management and Monitoring of the Plan

6.1 Management

There is no standard methodology for the implementation and management of a GTP. However, the GTP will be monitored to ensure that it is achieving the desired benefits. The mode share targets set out in Section 4 are used in this regard to ensure there is an overall goal in the management of the GTP.

The monitoring of the GTP would require travel surveys to be undertaken with a focus to establish travel patterns including mode share of trips to and from the Site. It is anticipated that the first set of surveys would be undertaken within six months of first occupation to obtain the baseline mode shares for the site.

The implementation of the GTP will need a formal Travel Plan Co-ordinator (TPC), who will have responsibility for developing, implementing and monitoring the GTP. The TPC will be an appointed Iglu staff member or an independent expert.

It will also be necessary to provide feedback to residents and visitors to ensure that they can see the benefits of sustainable transport.

Indeed, there are several keys to the development and implementation of a successful GTP. These include:

- **Communications** – Good communications are an essential part of the GTP. It will be necessary to explain the reason for adopting the plan to promote the benefits of sustainable transport options.
- **Commitment** – GTPs involve changing established habits or providing the impetus for people in new developments to choose a travel mode other than car use. To achieve co-operation, it is essential to promote positively the wider objectives and benefits of the plan. This commitment includes the provision of the necessary resources to implement the plan, beginning with the introduction of the '*carrots*' or incentives for changing travel modes upon occupation.
- **Building Consensus** – It will be necessary to obtain broad support for the introduction of the plan from the residents and visitors.

Once the plan has been adopted, it is essential to maintain interest in the scheme. Each new initiative in the plan will need to be publicised and marketing of the project as a whole will be important.

7.2 Remedial Actions

A continuous review will take place to identify remedial actions should the modal share targets not be achieved. However, the following measures are proposed both as discrete measures (e.g. car share) and those being proposed as part of the proposed development:

- an increase in bicycle parking facilities
- provision of a shuttle bus to key locations
- on-road cycling classes (or marketing of existing classes held by others e.g. City of Sydney cycling classes)

Alternatively, the TPC could work with council to see how the measures might be aligned with council's strategic planning for active travel.

7.3 Consultation

The results of the Green Travel Plan will be communicated with the student accommodation provider, students and staff via the noticeboard, newsletters, email and website.

As such, it is recommended that a summary letter is produced presenting the results of the survey within one month of the undertaking of the travel surveys (say 6-months post-occupation). The travel survey will be either undertaken by the Travel Plan Coordinator (TPC) or organised by the TPC to a traffic consultant who specialise in undertaking a travel survey. The letter/report may be also appended to the GTP and submitted to Council for comment. Subsequent surveys would be undertaken after one, three and five years.

Communication to the student accommodation provider, students and staff may be carried out in a similar form by public display of the GTP on noticeboards. Alternatively, a news article on the matter could be included on newsletters and/or an online website.

7 Conclusion

This GTP notes a number of transport demand management initiatives to assist with achieving a 0 per cent target car driver mode share for this proposed student accommodation.

In addition, the proposed development does not include any on-site car parking provisions as is typical of student housing developments and other Iglu sites. Iglu currently operate several student housing facilities and over 3,000 beds, in Sydney, Melbourne and Brisbane which have no car parking provisions. Iglu operate with a philosophy that encourages staff and students to use sustainable transport modes (i.e. public transport, cycling and walking) and has successfully operated with no complaints from students on the lack of parking provision or from Councils about students driving and parking off-site.

The implementation of this GTP, in combination with no on-site car parking provisions, will be key to ensuring that students and staff are encouraged to use sustainable transport.

It is however recommended that travel surveys be undertaken 6-months post-occupation of the site, with this draft GTP updated accordingly to suit the site's modal splits and findings of the travel surveys, including identification of opportunities and constraints to influence further changes to the travel behaviour of the residents wherever possible.

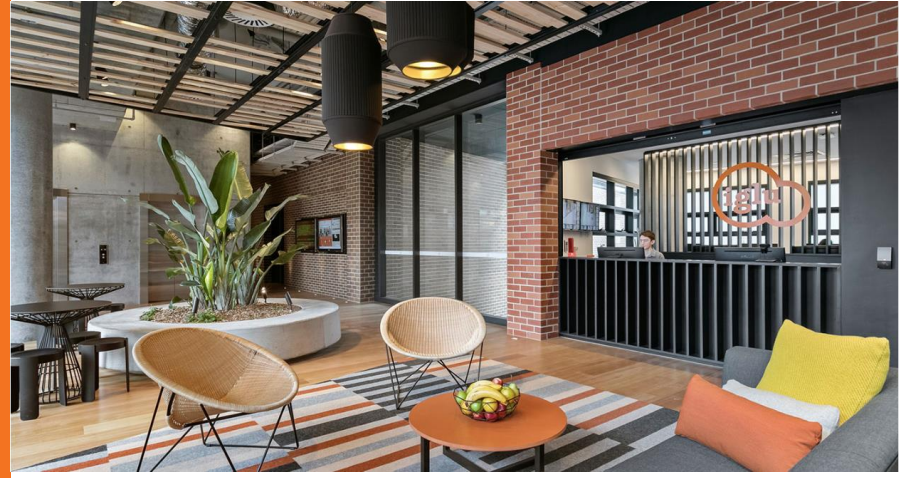
Subsequent surveys should be undertaken after one, three and five years of occupying the development.

Iglu as an operator of several student accommodation sites and manager of other similar GTPs, is well placed to undertake post-occupation maintenance and management to ensure the GTP is implemented well and continues to be successful in encouraging active and public transport.

Appendix A

Transport Access Guide

Transport Access Guide



74 Carlton Crescent, Summer Hill

Student Accommodation

Use active and public transport to get around

Getting Around

Train

Summer Hill Station
(2-minute walk)

T2 Inner West & Leppington Line

Journey Times

12 minutes to Redfern
15 minutes to Central
8 minutes to Newtown
4 minutes to Ashfield
30 minutes to Sydney Airport
31 minutes to Parramatta
35 minutes to Bondi Junction

Public Transport Information

Plan your trip using Sydney's Trip Planning Tool:
transportnsw.info/trip

Or the RMS Cycleway Finder:
https://www.rms.nsw.gov.au/maps/cycleway_finder

Light Rail

Frequent Light Rail services are available at Lewisham West Station via the Dulwich Hill to Central line

These services run every 5-8 minutes during the peak hours, and every 15 minutes thereafter

It typically takes 33 minutes to go from Lewisham West Station to Central Station

Bus

Bus services are available on Parramatta Road and Junction Road within a eight minute walk from the site.

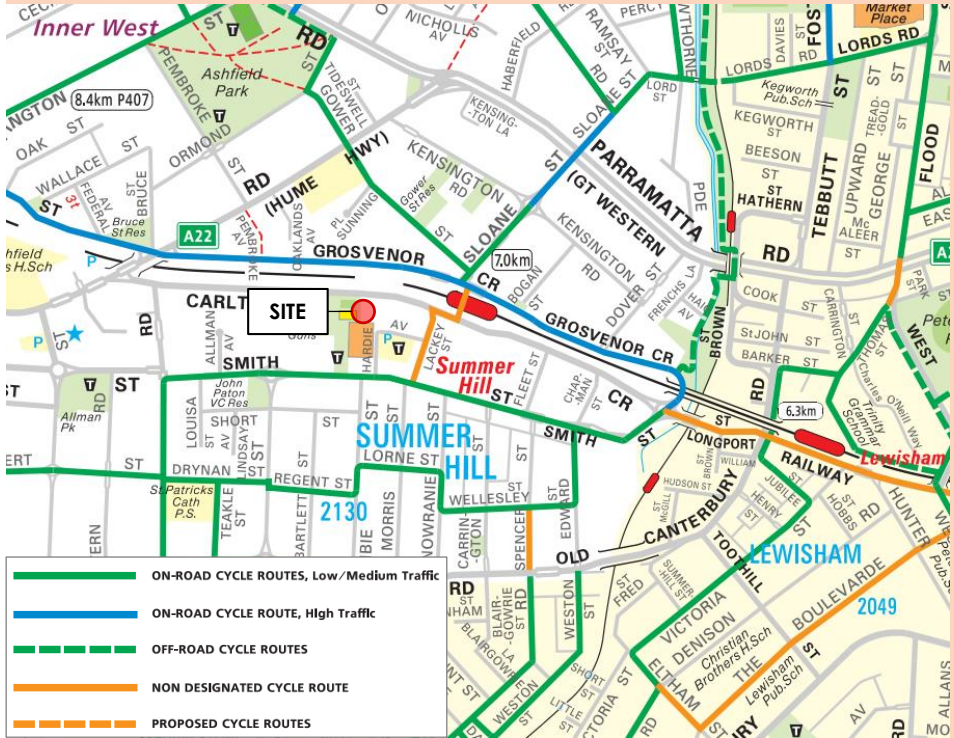
Route	Description
461	Burwood to City Domain
480	Strathfield to Central Pitt St via Homebush Rd
483	Strathfield to Central Pitt St via South Strathfield
413	Campsie to City Martin Place

Cycle

There are many cycleways in the proximity of the site, providing connectivity to Sydney CBD, Inner Sydney and Inner West, as well as educational institutions

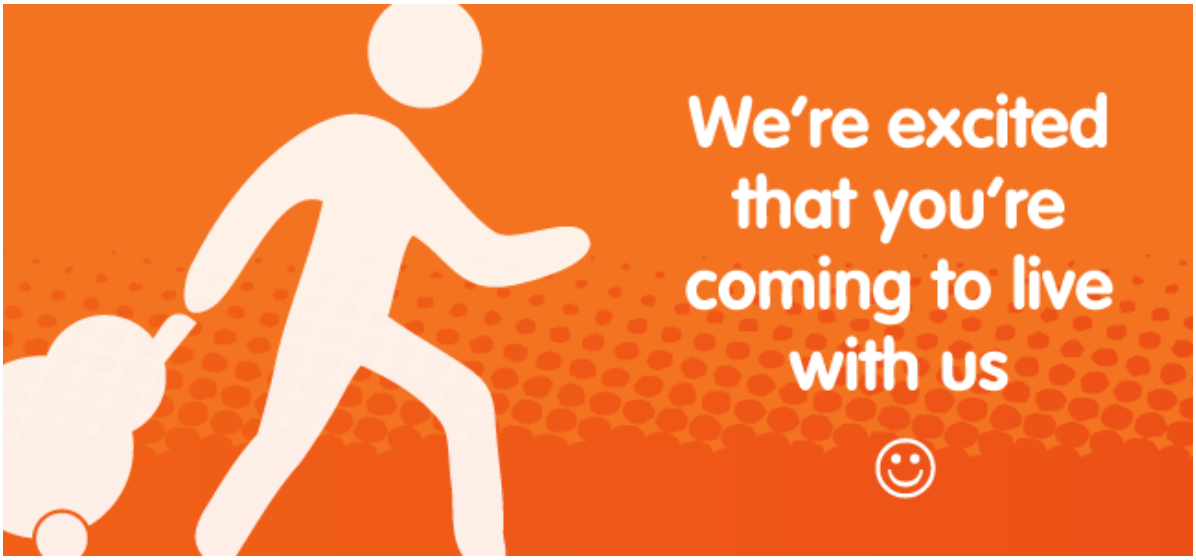
Cycling time to University and Colleges

University of Sydney – 20 minutes
University of Notre Dame –22 minutes
University of Technology Sydney/ TAFE Ultimo – 24 minutes
Australian Catholic University – 26-30 minutes



Appendix B

Example Iglu Welcome Email



Dear [Name]

We are looking forward to welcoming you to Iglu Redfern.

As your arrival date is just around the corner, here are a few things to help ensure a smooth check-in process.

GETTING TO IGLU REDFERN

We are located at 66 Regent Street, Redfern NSW 2016.

Coming from the airport: The easiest options are a taxi, Uber or an **Iglu Airport Transfer**. If you would like to be picked up from the airport, please let us know. The cost is AUD70 and we require at least 48 hours' notice for bookings.

You can also catch the AirportLink train to Central Station and change trains to go one stop to Redfern. There are lots of transport apps you can use such as Arrivo Sydney, NextThere or TripView to plan your trip (see options here). Travel time is approximately 20 minutes.

Driving yourself: You can just enter Iglu Redfern into Google Maps for the best directions from your location. We don't have parking but there is street parking along Regent Street and other nearby streets, such as Redfern Street, which is directly opposite.

Train: If you're arriving by train, take the exit on your right. Go through the ticket barriers. Cross over the traffic lights. Walk through the pedestrian mall and turn right onto Regent Street. Iglu Redfern is about 20 metres along the footpath. You can't miss it!

ABOUT YOUR APARTMENT

If you are moving into a shared apartment, the size of your bed is **king single**. If you are moving into a studio apartment, the size of your bed is **double**. Please keep this in mind when packing or purchasing your linen.

The nearest place to purchase bed linen, pillows and pillow cases, toiletries, kitchenware and cutlery is Broadway Shopping Centre, which is a 4-minute taxi or Uber ride from Iglu Redfern.

Alternatively, you can purchase a **Kit Out My Iglu** kit from us and it will be waiting for you in your room.

SMOOTH CHECK-IN (AND THINGS TO BRING WITH YOU)

To ensure your arrival is as smooth as possible, please send us your estimated arrival date and time to minimise delay in checking you into your apartment. You will need to have a copy of the following items with you:

- ✓ Passport/Passport Copy/Photo ID
- ✓ Confirmation of Enrolment (CoE)/Proof of Enrolment

Our front desk operates hours are:

- 9am – 7pm (Mon to Fri)
- 10am – 6pm (Sat & Sun)

If you are checking in during these hours our friendly team will be here to greet you and run through everything you need to settle in. If you arrive outside of these hours, don't worry, you can contact one of our friendly Resident Leaders on +61 426 709 463 and they will check you in.

We look forward to welcoming you to the Iglu family and if you have any further questions or concerns, please don't hesitate to contact us.

SOME OTHER HELPFUL INFORMATION

We look forward to welcoming you to the Iglu family and if you have any further questions or concerns, please don't hesitate to contact us.

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 237
St Leonards NSW 1590

02 8437 7800

info@ttpp.net.au

www.ttpp.net.au

Appendix 4 – Confirmation of Sprinkler

STEVE WATSON & PARTNERS
BUILDING CODE CONSULTANTS • BUILDING SURVEYORS & CERTIFIERS

Steve Watson and Partners Pty Ltd
Level 17, 456 Kent Street, Sydney NSW 2000
Phone: (02) 9283 6555 | Fax: (02) 9283 8500
SYDNEY • MELBOURNE • BRISBANE • CANBERRA
info@swpartners.com.au www.swpartners.com.au
ABN 33 600 478 402

Job No. 2018/3123

Wednesday, September 18, 2019

Attention: Michael Hanisch

Mecone
Level 12, 179 Elizabeth Street
Sydney NSW 2000

Dear Michael,

RE: Iglu Summer Hill – Application of sprinklers

We write to confirm under BCA 2019 the Iglu Summer Hill project requires the provision of a sprinkler system which is proposed as part of the design.

If you have any queries please do not hesitate to contact me.

Kind regards,

Jason Krzus
Senior Associate
Steve Watson and Partners Pty Ltd