



C & S

ENGINEERING SERVICES  
Civil & Stormwater Engineering Services Pty Ltd

## Flood Impact Assessment

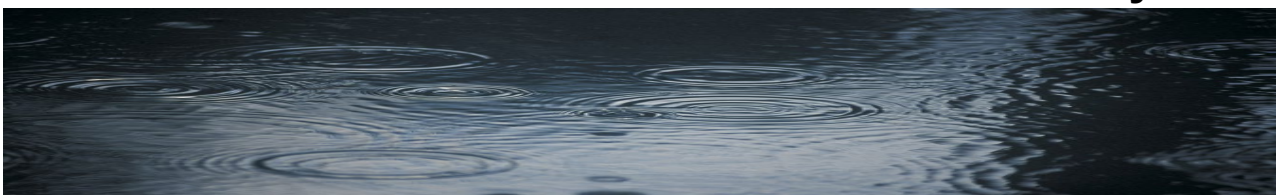
Proposed Two Storey Medical Centre 1-3 Careel Head  
Road Avalon Beach, NSW 2107

Prepared For  
**Northern Beaches Council**

Client  
**CD Architects**

Project No.  
**CSES240157**

**Issue A**  
**July 2024**



# Document Information

Project No: CSES240157				
Report Type: Flood Risk Assessment Report				
Site Address: 1-3 Careel Head Road Avalon Beach, NSW 2107				
Document Filename: FMR_1- 3 Careel Hd Rd, Avalon Beach.docx				
Issue A		Position	Date	Comments
Prepared By	Osman Chowdhury	Civil Engineer	18 July 2024	Nil
Reviewed By	Dr. Anthony Hasham	Principal Engineer	18 July 2024	Nil

## Copyright © 2024 – Civil & Stormwater Engineering Services Pty Ltd

This report, models and other enclosures have been prepared expressly for the client and for sole purpose as described in the supplied plans herein. This report and models are copyright to Civil & Stormwater Services Pty Ltd and no part (including the whole of the same) shall be used for any other purpose or by any other third party without prior written consent by Civil & Stormwater Engineering Services Pty Ltd. The Client, listed below, is defined as the person or persons named in this report or the person or persons for whom the named property developer is acting as an agent.

Client	Comments
CD Architects	Nil

## Disclaimer

The advice and information contained within this report relies on the quality of the records and other data provided by the Client and obtained from Council along with the time and budgetary constraints imposed.

# TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2</b>	<b>SITE DETAILS.....</b>	<b>1</b>
2.1	Existing Setting .....	1
2.2	Proposed Development .....	2
<b>3</b>	<b>REVIEW OF INFORMATION.....</b>	<b>3</b>
3.1	Pittwater 21 DCP .....	3
3.2	Flood Risk Management Policy, 2017 .....	3
<b>4</b>	<b>FLOOD ASSESSMENT .....</b>	<b>3</b>
4.1	Flood Information .....	3
4.2	Flood Risk Assessment .....	5
<b>5</b>	<b>DEVELOPMENT CONTROL PLANS REQUIREMENTS .....</b>	<b>5</b>
<b>6</b>	<b>FLOOD MITIGATION MEASURES .....</b>	<b>9</b>
<b>7</b>	<b>FLOOD EMERGENCY RESPONSE PLAN .....</b>	<b>10</b>
7.1	Flood Evacuation and Shelter in Place Refuge .....	10
7.2	Preparing for a Flood .....	11
7.3	Responding During a Flood .....	11
7.4	Recovery after a Flood .....	12
<b>8</b>	<b>CONCLUSION .....</b>	<b>12</b>
<b>9</b>	<b>REFERENCES.....</b>	<b>12</b>
<b>10</b>	<b>APPENDICES.....</b>	<b>13</b>

**LIST OF FIGURES**

FIGURE 2-1: SITE LOCATION (BOUNDED IN RED) AND SURROUNDING AREA..... 1

FIGURE 2-2: SITE... 2

FIGURE 2-3: GROUND LEVEL PLAN.....2

FIGURE 4-1: 1% AEP EXTENT PLUS CLIMATE CHAGE (LEFT) AND PMF EXTENT (RIGHT) MAPS.....3

FIGURE 4-2: 1% AEP HYDRAULIC CATEGORY EXTENT MAP.....4

FIGURE 4-3: FLOOD LIFE HAZARD CATEGORY IN PMF (LEFT) AND FLOOD RISK PRECINCT (RIGHT)  
..... 4

FIGURE 5-1: DEVELOPMENT CONTROL MATRIX ..... 6

FIGURE 6-1: INDICATIVE LOCATIONS FOR PROPOSED FLOOD GATES. .... 10

# 1 INTRODUCTION

Civil & Stormwater Engineering Services Pty Ltd have been commissioned to prepare a Flood Impact Assessment for Proposed Development at 1-3 Careel Head Road, Avalon Beach NSW 2107.

This report will:

1. Determine the existing Flood characteristics;
2. Define the flood risk for the proposed development in accordance with Council's flood risk management;
3. Provide flood risk management procedures for the proposed development in accordance with Council's Flood Risk Management Plan;
4. Establish a development control plan in accordance with Council's guidelines.

This report has been prepared generally in accordance with Pittwater 21 DCP (2014).

## 2 SITE DETAILS

### 2.1 Existing Setting

The proposed development site, identified as Lot 1 SP 32656 (1 Careel Head Rd), Lot B DP 385973 (3 Careel Head Rd), is located within the municipality of Northern Beaches Council. It is bounded by Careel Head Road to the north, Barrenjoey Road to the west and by built-up allotments to the south and east. Careel Creek is located approximately 170 m west of the site, flowing from south to northwest and discharging into the bay. **Figure 2-1** and **Figure 2-2** below shows the site location outlined in red.



**Figure 2-1: Site Location (bounded in red) and Surrounding Area**



Figure 2-2: Site

## 2.2 Proposed Development

The proposal is to construct a mixed-use development that includes both retail and a childcare facility. This will be a two-story building, with the ground floor housing Dan Murphy's and other retail shops, and the second storey (Level 01) containing the childcare facility. To address parking needs efficiently, the development includes both basement and ground-level parking facilities. **Figure 2-3** shows the ground-level plan of the proposed development. All other architectural plans are attached in **Appendix A**.

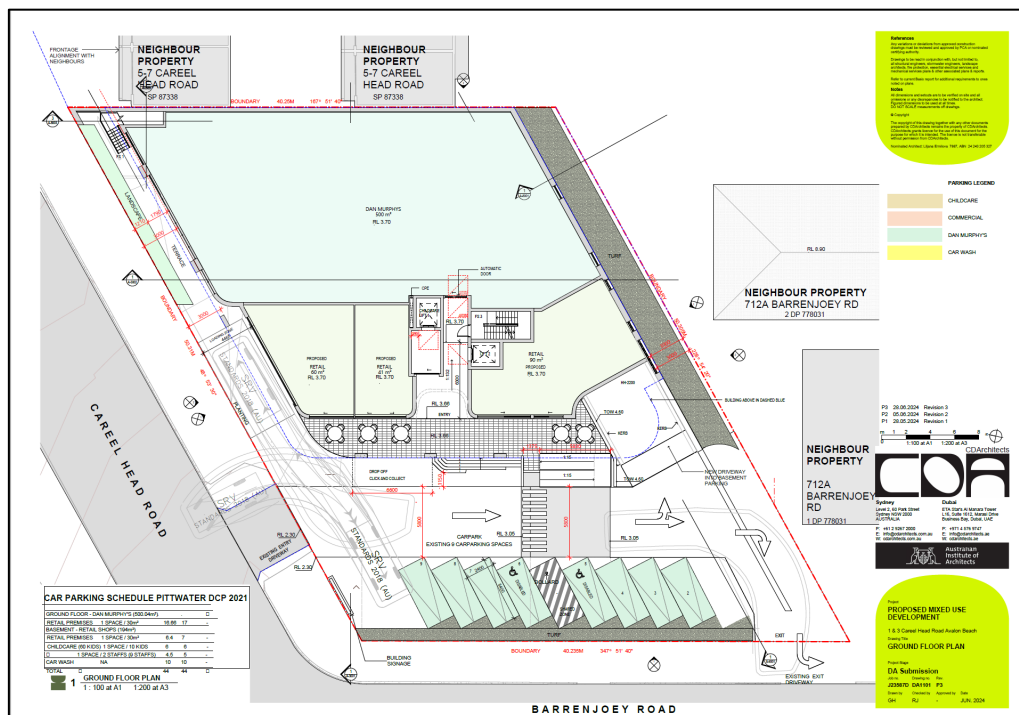


Figure 2-3: Ground Level Plan



## 3 REVIEW OF INFORMATION

### 3.1 Pittwater 21 DCP

Pittwater 21 Development Control Plan 2014 (Pittwater 21 DCP) is to provide best practice standards for development. Section B3.11 Flood Prone Land of the Pittwater 21 DCP describes development control in a land identified as being affected by flooding by Council. This report was compiled based on Pittwater 21 DCP, specifically Section B3.11.

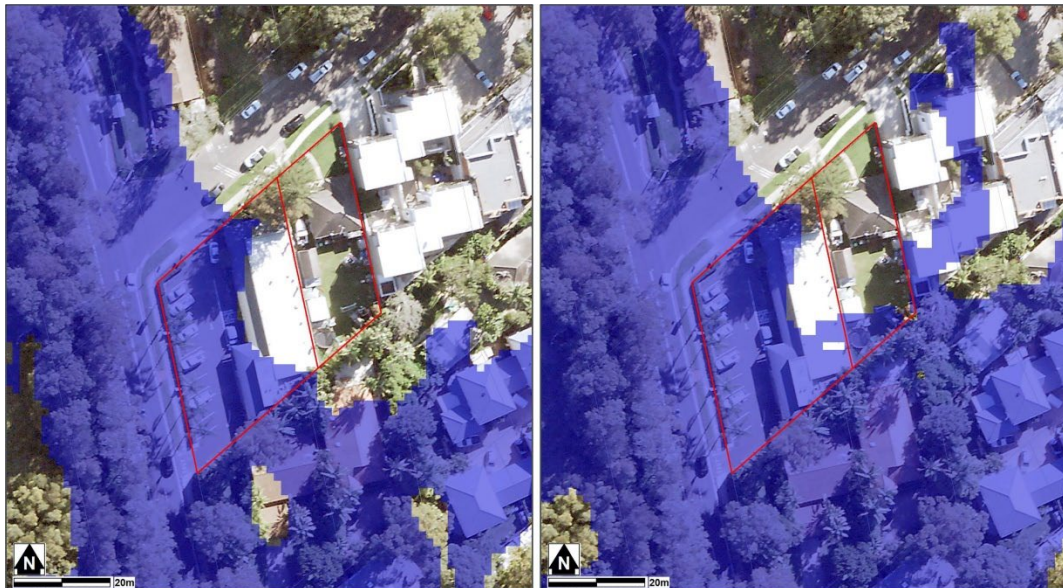
### 3.2 Flood Risk Management Policy, 2017

The Flood Risk Management Policy (the Policy) establishes the flood risk management approach within the Northern Beaches Council. The policy was reviewed to prepare risk management for the site.

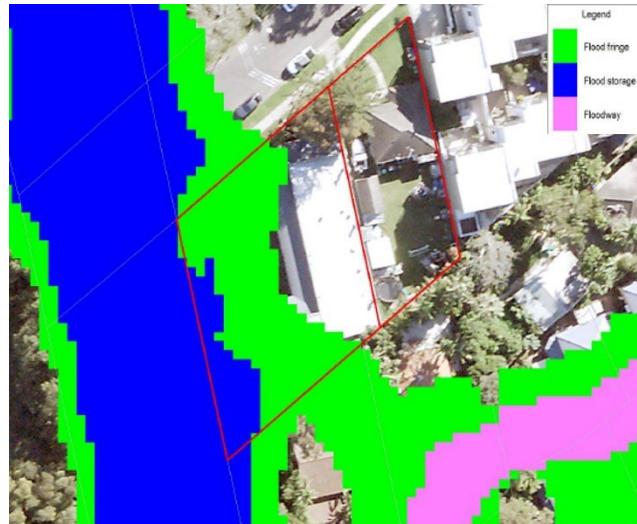
## 4 FLOOD ASSESSMENT

### 4.1 Flood Information

According to the Flood Information Report issued by the Council, the development site located at 1 Careel Head Rd is partially affected by both the 1% AEP design event with climate change and PMF floods (**Figure 4-1**). However, the development site located at 3 Careel Head Rd is flood-free. The flood hazard category of the development site at 1 Careel Head Rd is predominantly classified as flood fringe, except for the western part next to Barrenjoey Rd, which is classified as flood storage (**Figure 4-2**).

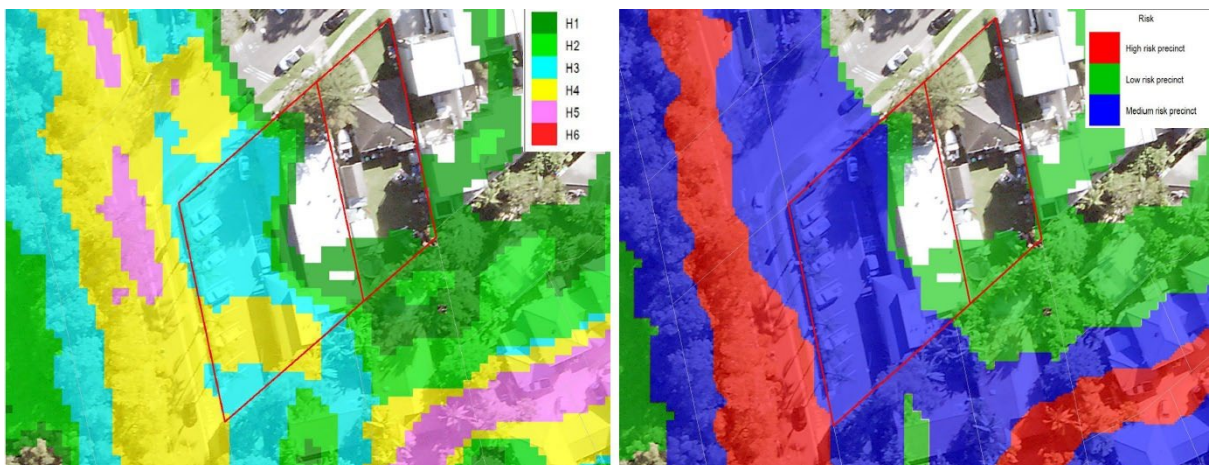


**Figure 4-1: 1% AEP Extent plus Climate Change (Left) and PMF Extent (Right) Maps**



**Figure 4-2: 1% AEP Hydraulic Category Extent Map**

Flood hazard category of the site located at 3 Careel Head Rd is predominantly H3 and H4 (**Figure 4-3**). However, the front portion of the proposed building footprint falls under categories H1 and H2, whereas the southwest corner of the development footprint is classified as H3. A major portion of the proposed building footprint is outside the flood-prone land. The Flood Risk Precinct within the property is mostly “Medium”.



**Figure 4-3: Flood Life Hazard Category in PMF (Left) and Flood Risk Precinct (Right)**

The site is within the former Pittwater Local Government area. As per Pittwater 21 DCP, the impact of climate change must be considered for the intensification of development. **Table 4-1** provides flood level for the 1% AEP design event with climate change, flood planning level (FPL), and probable maximum flood level for the site. This information is important to assess compliance with flood-related development.

**Table 4-1: Flood Levels (m AHD)**

1% AEP Level (Climate change + Sea level rise)	FPL	PMF
3.21	3.71	4.91



## 4.2 Flood Risk Assessment

The finished floor level of the proposed retail spaces is at the FPL, and the proposed childcare facility is at 7.90 m AHD, which is well above the PMF level which is 4.91 m AHD. Safe refuge is possible above the PMF level in the outdoor area of the childcare facility. The existing entry to the driveway, which will be used to access the site, is affected by a 1% AEP flood, with an expected depth of approximately 0.9 m. This flood depth is not safe for vehicle evacuation during a 1% AEP flood. Early evacuation/ shelter-in-place is required to avoid being isolated at the time of the flood and this is discussed in **Section 7**.

The entry to the basement parking is at 3.05 m AHD, which is below the FPL. Appropriate flood mitigation measures are required for the basement parking area. Possible mitigation measures for the basement parking area are provided in **Section 6**. The flood depth of the outdoor parking area is approximately 0.16 m AHD during a 1% flood, which is generally safe for people and vehicles.

## 5 DEVELOPMENT CONTROL PLANS REQUIREMENTS

In accordance with section B3.11: Flood Prone Land of Pittwater 21 Development Control Plan (DCP), the proposed development was reviewed against development controls listed in the Development Control Matrix (**Figure 5-1**). Refer to **Table 5-1** below for detailed development controls which are relevant to the site.

The flood-related development controls were identified based on the flood risk precinct of the proposed development. The car park and driveways are located within the Medium Flood Risk Precinct, while other facilities are located either within the Low Flood Risk Precinct or outside the extent of the 1% AEP and PMF flood.

The land use category for the proposed Dan Murphy's and other retail spaces is "Business & Industrial Use," whereas the proposed childcare facility is categorized as "Vulnerable & Critical Use".

Medium Flood Risk Precinct						
		Vulnerable & Critical Use	Residential Use	Business & Industrial Use	Recreational & Environmental Use	Subdivision & Civil Works
A	Flood effects caused by Development	A1 A2	A1 A2	A1 A2	A1 A2	A1 A2
B	Building Components & Structural	B1 B2 B3	B1 B2 B3	B1 B2 B3	B1 B2 B3	
C	Floor Levels	C2 C3	C1 C3 C4 C6	C1 C3 C4 C6 C7	C3	C5
D	Car Parking	D1 D2 D3 D4 D7	D1 D2 D3 D4 D5 D6	D1 D2 D3 D4 D5 D6	D1 D2 D3 D4 D5 D6	D1
E	Emergency Response	E1 E2	E1	E1	E1	E3
F	Fencing	F1	F1	F1	F1	F1
G	Storage of Goods	G1	G1	G1	G1	
H	Pools	H1	H1	H1	H1	H1

Figure 5-1: Development Control Matrix

Table 5-1: Development Controls

Requirements			Complying
<b>A. Flood effects caused by development</b>			
<b>B. Building components and structural soundness</b>	B1	All buildings shall be designed and constructed with flood compatible materials in accordance with "Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas", Hawkesbury-Nepean Floodplain Management Steering Committee (2006).	✓ This can be complied with. Architect to confirm.
	B2	All new development must be designed and constructed to ensure structural integrity up to the Flood Planning Level, taking into account the forces of floodwater, wave action, flowing water with debris, buoyancy and immersion. Where shelter-in-place refuge is required, the structural integrity for the refuge is to be up to the Probable Maximum Flood level. Structural certification shall be provided confirming the above.	✓ This can be complied. Structural engineer certification will be provided.
	B3	All new electrical equipment, power points, wiring, fuel lines, sewerage systems or any other service pipes and connections must be waterproofed and/or located above the Flood Planning Level. All existing electrical equipment and power points located below the Flood Planning Level within the subject structure must have residual current	✓ Architect to confirm. ✓ All electric installation at the habitable area will be above the FPL which is 3.71m AHD. ✓ Electrical installations located in the basement

Requirements		Complying
	devices installed that turn off all electricity supply to the property when flood waters are detected.	car parking will be isolated in the event of a flood when flood waters are detected. ✓ Additionally flood mitigation measure is required to install for the basement parking (Section 6).
<b>C. Floor levels</b>	C1	New floor levels within the development shall be at or above the Flood Planning Level. ✓ This applies for the proposed retails. ✓ As per the architectural plan, the finished floor level of all shops located on the ground floor is 3.7m AHD, which is the FPL.
	C2	All floor levels within the development shall be at or above the Probable Maximum Flood level or Flood Planning Level, whichever is higher. ✓ This applies for the proposed childcare. ✓ As per the architectural plan, the finished floor level of the proposed childcare facility is well above the PMF level.
	C3	All new development must be designed and constructed so as not to impede the floodway or flood conveyance on the site, as well as ensuring no net loss of flood storage in all events up to the 1% AEP event.  For suspended pier/pile footings: (a) The underfloor area of the dwelling below the 1% AEP flood level is to be designed and constructed to allow clear passage of floodwaters, taking into account the potential for small openings to block; and (b) At least 50% of the perimeter of the underfloor area is of an open design from the natural ground level up to the 1% AEP flood level; and (c) No solid areas of the perimeter of the underfloor area would be permitted in a floodway  ✓ NA. The proposed building footprint is located partially within the flood fringe area.
	C4	A one-off addition or alteration below the Flood Planning Level of less than 30 square metres (in total, including walls) may be considered only where: (a) it is an extension to an existing room; and (b) the Flood Planning Level is incompatible with the floor levels of the existing room; and (c) out of the 30 square metres, not more than 10 square metres is below the 1% AEP flood level.  This control will not be permitted if this provision has previously been utilised since the making of this Plan.  The structure must be floodproofed to the Flood Planning Level, and the Flood Management Report must demonstrate that there is no net loss of flood storage in all events up to the 1% AEP event.  ✓ NA
	C6	Consideration may be given to the retention of an existing floor level below the Flood Planning Level when undertaking a first floor addition provided that: (a) it is not located within a floodway; and (b) the original foundations are sufficient to support the proposed final structure above them. The Flood  ✓ NA

Requirements			Complying
		Management Report must include photos and the structural certification required as per Control B2 must consider whether the existing foundations are adequate or should be replaced; and (c) none of the structural supports/framing of existing external walls of are to be removed unless the building is to be extended in that location; and (d) the ground floor is floodproofed.	
	C7	Consideration may be given to a floor level below the Flood Planning Level within the first 5 metres from the street front in an existing business zone provided it can be demonstrated that: (a) The minimum floor level is no lower than the adjacent footpath level, and (b) The maximum internal distance from the front of the building is 5 metres, which can only apply to one side of an individual premises, and (c) The maximum area for the floor area to be below the Flood Planning Level for an individual premises is 30 square metres, and (d) There is direct internal access between areas above and below the Flood Planning Level for each individual premises	✓ NA
<b>D. Car parking &amp; driveway access</b>	D1	Open carpark areas and carports shall not be located within a floodway.	✓ This complies. The outside parking area is not located within a floodway.
	D2	The lowest floor level of open carparks and carports shall be constructed no lower than the natural ground levels, unless it can be shown that the carpark or carport is free draining with a grade greater than 1% and that flood depths are not increased.	✓ This complies. The proposed outside car park will be situated at an elevation higher than the natural ground level.
	D3	Carports must be of open design, with at least 2 sides completely open such that flow is not obstructed up to the 1% AEP flood level. Otherwise it will be considered to be closed. When undertaking a like-for-like replacement and the existing garage/carport is located on the street boundary and ramping is infeasible, consideration may be given for dry flood proofing up to the 1% AEP flood level.	✓ This complies. The proposed outside car park is open planned.
	D4	Where there is more than 300mm depth of flooding in a car park or carport during a 1%AEP flood event, vehicle barriers or restraints are to be provided to prevent floating vehicles leaving the site. Protection must be provided for all events up to the 1% AEP flood event	✓ This complies. The proposed design level of the outside carpark is 3.05 m AHD, whereas the 1% AEP flood level is 3.21 m AHD.
	D5	Enclosed Garages must be located at or above the 1% AEP level.	✓ NA
	D6	All enclosed car parks (including basement carparks) must be protected from inundation up to the Flood Planning Level. All access, ventilation, driveway crests and any other potential water entry points to any enclosed car parking shall be above the Flood Planning Level.	✓ Architect to confirm no ventilation is provided below FPL 3.71m AHD. ✓ Flood mitigation measure is required to install for the basement parking (Section 6) to protect from flooding up to FPL.
	D7	All enclosed car parks must be protected from inundation up to the Probable Maximum Flood level or Flood Planning Level whichever is higher. For example, basement carpark driveways must be provided with a crest at or above the relevant Probable Maximum Flood level or Flood Planning Level whichever is higher. All access, ventilation and any other potential water entry points to any	✓ NA ✓ This is applied to the parking for childcare. ✓ Architect to confirm enclosed parking will not be used for childcare.

Requirements			Complying
		enclosed car parking shall be at or above the relevant Probable Maximum Flood level or Flood Planning Level whichever is higher.	
<b>E. Emergency response</b>	E1	If the property is affected by a Flood Life Hazard Category of H3 or higher, then Control E1 applies and a Flood Emergency Assessment must be included in the Flood Management Report.	✓ Flood Emergency Response Plan is included in Section 7.
<b>F. Fencing</b>	F1	Fencing, (including pool fencing, boundary fencing, balcony balustrades and accessway balustrades) shall be designed so as not to impede the flow of flood waters and not to increase flood affectation on surrounding land. At least 50% of the fence must be of an open design from the natural ground level up to the 1% AEP flood level. Less than 50% of the perimeter fence would be permitted to be solid. Openings should be a minimum of 75 mm x 75mm.	✓ It is proposed to install a 'free flow through' security fence at the front side of the property. ✓ Architect to confirm.
<b>G. Storage of goods</b>	G1	Hazardous or potentially polluting materials shall not be stored below the Flood Planning Level unless adequately protected from floodwaters in accordance with industry standards.	✓ Architect to confirm.
<b>H. Pools</b>	HI		✓ NA

## 6 FLOOD MITIGATION MEASURES

The crest level for the entry to the basement car park is approximately 3.05 m AHD. To protect basement parking from flooding, the crest level needs to be redesigned to meet or exceed FPL of 3.71 m AHD. If raising the crest level to the FPL is impractical, another viable option would be to install flood gates or flood barriers. In the case of a fire door with a floor level below 3.71 m AHD, a flood door is required.

Flood gates can be manually operated or deployed automatically across the driveway/entry of the building. Indicative locations for flood gates are shown in **Figure 6-1**. It is recommended to undertake regular maintenance and testing of the flood mitigation measures (e.g., flood gates). In addition to flood gate, infill solid walls with minimum height of 3.71 m AHD are required to provide as shown in the figure.



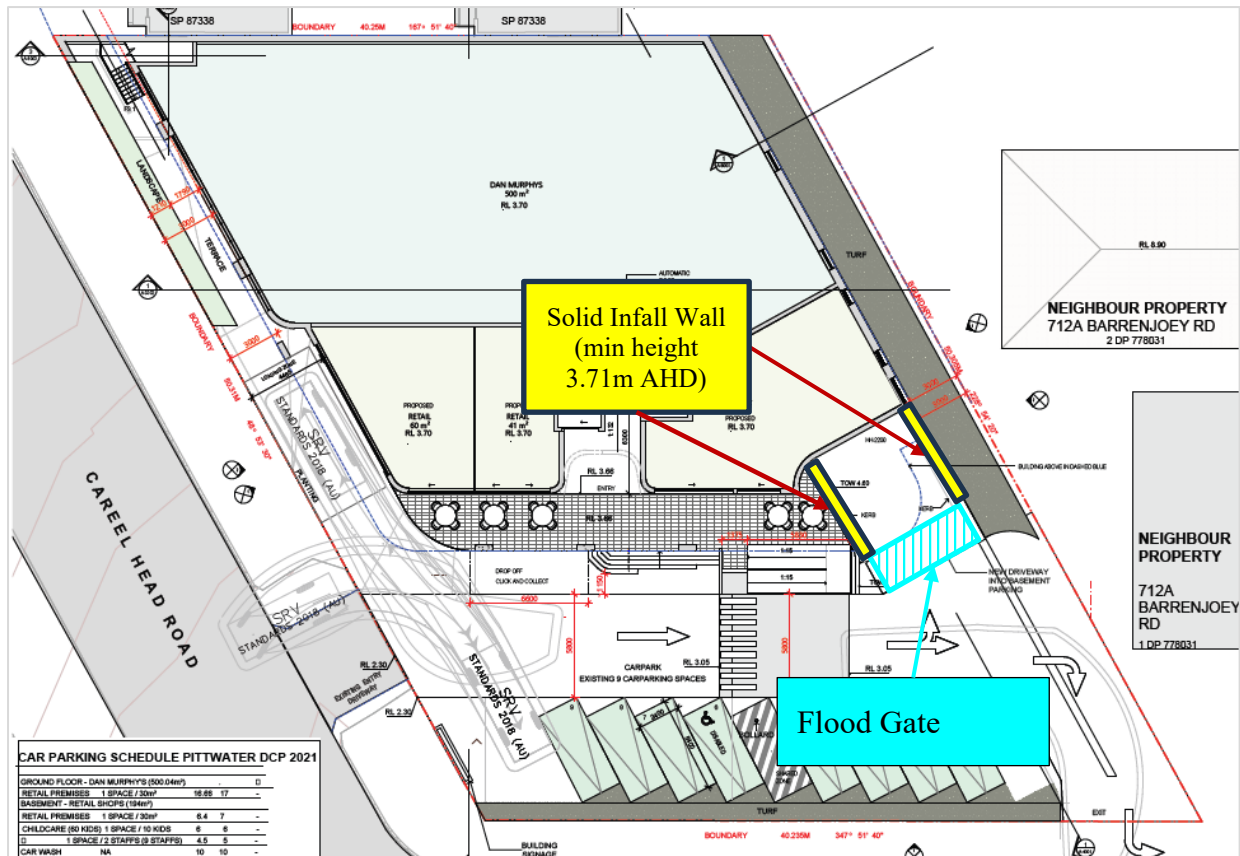


Figure 6-1: Indicative locations for proposed flood gates.

## 7 FLOOD EMERGENCY RESPONSE PLAN

As mentioned in Section 4.2: Flood Risk Assessment, the evacuation route via Careel Head Road will be cutoff both at PMF and 1% AEP flood event. To avoid isolation, early evacuation is required. There are two main forms of flood emergency response:

- Evacuation: Movement out of the floodplain before the property becomes flood affected; and
- Shelter-in-Place Refuge: Occupation in a safe refuge on the property during a flood.

### 7.1 Flood Evacuation and Shelter in Place Refuge

Careel Head Rd has a Rising Road Egress, and the western portion of the road and property is not flood-prone, allowing for evacuation on foot from the northwest part of the property. However, during flooding up to the PMF event, occupants can seek refuge within the building (shelter-in-place refuge) as it is located at a higher land elevation. The western portion of the site and the outdoor area of the childcare facilities are located above the PMF.

As a shelter-in-place refuge, the building must contain at a minimum: sufficient clean water for all occupants, a portable radio with spare batteries, a torch

with spare batteries, a first aid kit, emergency power, and a practical means of medical evacuation.

Early evacuation via vehicle is required before the driveway exit of Careel Head Rd is cut off. During times of heavy rainfall, along with the possible cutoff of Barrenjoey Road, the site warden should advise occupants to evacuate the retail area and the childcare centre. Flood warning signage should be installed in strategic locations near Barrenjoey Road to ensure visibility. This signage will alert residents to rising water levels.

## **7.2 Preparing for a Flood**

The SES is responsible for dealing with floods in NSW. During floods, SES volunteers have the responsibility for issuing flood safety advice, evacuation, rescue and providing essentials to people cut off by floodwaters.

The Bureau of Meteorology (BOM) is provide warnings of heavy rainfall and hail when they are aware of such event, however this does not translate to a flood warning.

Being prepared will allow for occupants to respond quickly when evacuation is required. Occupants can prepare for evacuation by:

- The building occupants must ensure that no movable objects are kept in front of the retail shops. This is to prevent these objects from being carried away during flooding.
- Occupants should locate important papers, valuables, and mementos and place them in an emergency kit.
- Before evacuating, occupants should turn off electricity and gas at the mains. Additionally, they should turn off and secure any gas bottles.
- Waste containers, chemicals, and poisons should be relocated well above predicted flood levels and kept away from the flood hazard area.
- Occupants should familiarize themselves with the flood hazard area to understand the potential risks and safe zones.

## **7.3 Responding During a Flood**

During a flood, occupants are advised to:

- Never drive, ride or walk through floodwater;
- Keep listening to local radio station for further information, updates and advice;
- Keep in contact with neighbours and prepare to evacuate if advised;
- Stay with friends or relatives away from the flood;
- Take emergency kit with them;
- Take your pets with them;

Act early and head to high ground before roads are closed by floodwater. Monitoring relevant NSW SES and Bureau of Meteorology updates and information regarding safety advice.

## **7.4 Recovery after a Flood**

It is recommended by the SES that residents should not return to flood affected areas until emergency services advise it is to do so.

When cleaning up after flood events, ensure that safety advice is followed including discarding all food that has come into contact with floodwater and cleaning and sanitising belongings.

## **8 CONCLUSION**

This Flood Management Report has been prepared to support the proposed development at 1-3 Careel Head Road AVALON BEACH NSW 2107.

This report concluded that

- The proposed development complies with all the relevant flood related development control plans of Pittwater 21 DCP (Section 6).
- The flood mitigation measures are proposed for the basement parking and entry of the building.
- The flood emergency response plan needs to be followed at the time of flooding (Section 7).

## **9 REFERENCES**

1. Australia Government, Bureau of Meteorology Website  
<http://www.bom.gov.au/>
2. Pittwater 21 Development Control Plan, Northern Beaches Council, 2021
3. New South Wales Government – Floodplain Development Manual – The management of flood liable land, April 2005
4. Flood Risk Management Policy, Northern Beaches Council, 2017

## 10 APPENDICES

## Appendix A: Architectural Plan



DRAWING LIST			
	DRAWING No.	DRAWING NAME	REVISION
DA	1001	DRAWING LIST	P2
DA	1002	COMPLIANCE TABLE	
DA	1005	SITE PLAN	
DA	1006	DEMOLITION PLAN	
DA	1100	BASEMENT 1 FLOOR PLAN	P3
DA	1101	GROUND FLOOR PLAN	P3
DA	1102	LEVEL 01 FLOOR PLAN	P3
DA	1103	ROOF PLAN	P3
DA	2001	BUILDING ELEVATION NORTH, EAST	P1
DA	2002	BUILDING ELEVATION - SOUTH, WEST	P1
DA	2003	BUILDING ELEVATION SOUTH, EAST	P1
DA	3001	SECTION A	P1
DA	3002	SECTION B	P1
DA	4001	RAMP SECTION	
DA	6001	SHADOW DIAGRAMS	
DA	6011	SOLAR ACCESS STUDY	
DA	6028	SOLAR SCHEDULE	
DA	7001	GFA CALCULATION	
DA	7011	SOLAR ACCESS PLAN	
DA	7021	VENTILATION DIAGRAMS	
DA	7031	3D VIEW 1	
DA	7032	3D VIEW 2	
DA	7033	3D VIEW 3 - CAREEL HEAD ROAD	
DA	7041	FINISHES SCHEDULE	
DA	7042	SCHEMATIC	
DA	7043	WINDOW SCHEDULE	
DA	7051	DEEP SOIL ZONE	
DA	7061	COMMUNUAL OPEN SPACE DIAGRAM	
DA	7062	EVACUATION DIAGRAM	P1
DA	7071	INTERNAL UNIT STORAGE	
DA	7081	CUT & FILL DIAGRAM	
DA	7091	LEP HEIGHT BLANKET	
DA	8001	DETAIL SECTION - SETBACK	
DA	8003	DETAIL SECTION - FIRE STAIRS	
DA	x5001	PRE + POST ADAPTABLE UNIT LAYOUT	

# DESIGN INTENT STATEMENT

Situated in the picturesque locale of Avalon Beach, our mixed-use development endeavors to redefine coastal living by seamlessly integrating community-centric amenities with modern design sensibilities. At its heart, the project features a dynamic blend of outdoor and indoor childcare facilities, alongside retail spaces and Dan Murphy’s occupying the ground floor.

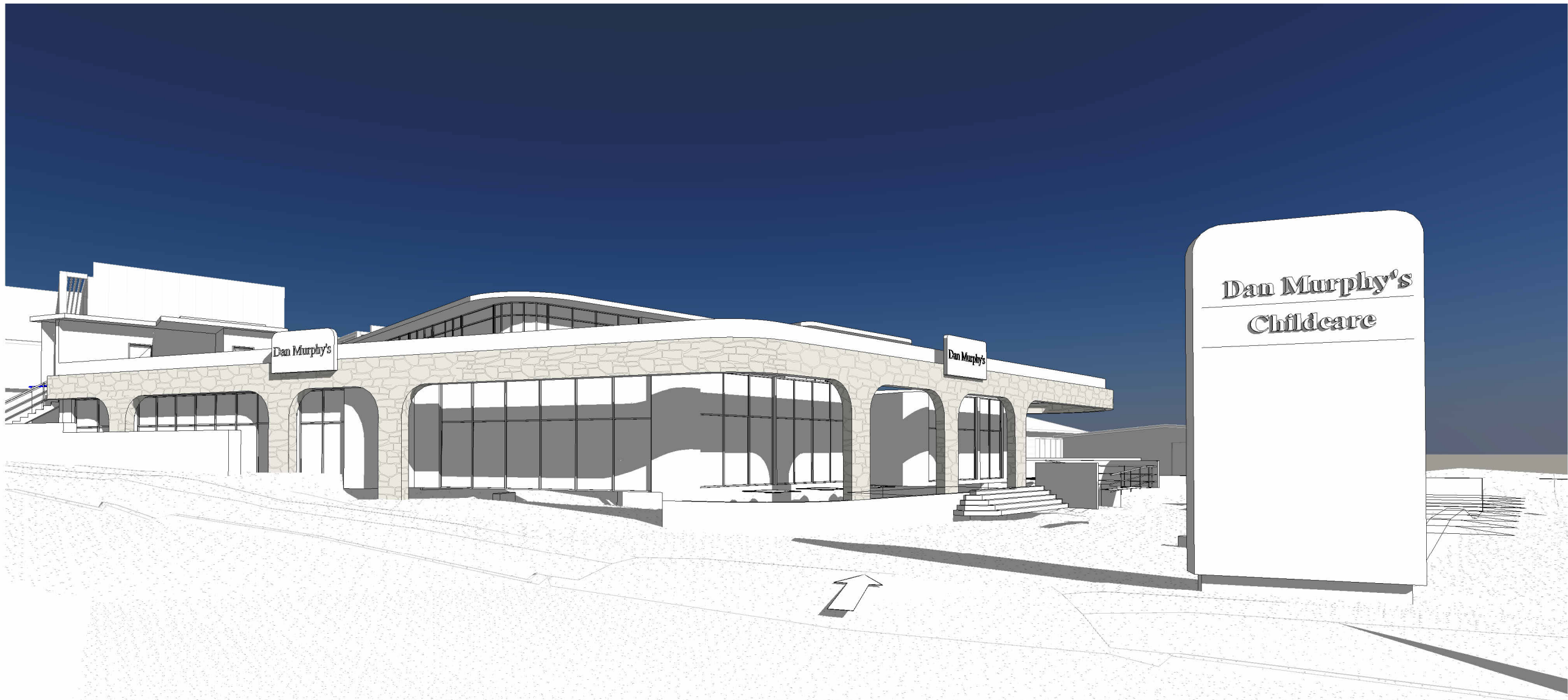
To address parking needs efficiently, the development encompasses both basement and ground-level parking facilities, ensuring convenience for residents and visitors alike.

Architecturally, the project embraces a distinctive aesthetic characterized by a harmonious blend of curved facades, sweeping arches, and angular features. Contemporary tones and carefully curated color palettes imbue the structure with a sense of sophistication, while materials such as white brick and concrete contribute to its timeless appeal.

The design ethos of the development extends beyond mere aesthetics to prioritize functionality and sustainability. Each aspect of the design is meticulously crafted to optimize natural light, ventilation, and spatial efficiency, enhancing the overall living experience for residents.

Landscaping elements play a pivotal role in softening the built environment and fostering a connection with nature. Green spaces are strategically integrated throughout the development, providing residents with serene outdoor retreats and contributing to the overall ecological sensitivity of the project.

Our vision for the Avalon Beach Mixed-Use Development is to create a vibrant and inclusive community hub that not only meets the needs of its residents but also enriches the fabric of the surrounding neighborhood. By blending innovative design with a commitment to sustainability, we aim to set a new benchmark for contemporary coastal living in this idyllic setting.



**References**

Any variations or deviations from approved construction drawings must be reviewed and approved by PCA or nominated certifying authority.

Drawings to be read in conjunction with, but not limited to, all structural engineers, stormwater engineers, landscape architects, fire protection, essential electrical services and mechanical services plans & other associated plans & reports.

Refer to current Basix report for additional requirements to ones noted on plans.

**Notes**

All dimensions and setbacks are to be verified on site and all omissions or any discrepancies to be notified to the architect. Figured dimensions to be used at all times. DO NOT SCALE measurements off drawings.

© Copyright

The copyright of this drawing together with any other documents prepared by CDArchitects remains the property of CDArchitects. CDArchitects grants licence for the use of this document for the purpose for which it is intended. The licence is not transferable without permission from CDArchitects.

Nominated Architect: Liljana Emilova 7887, ABN 24 243 205 327

P2 28.06.2024 Revision 3

P1 28.05.2024 Revision 1

m 1 2 4 6 8

0 1:100 at A1 1:200 at A3

CDArchitects

**Sydney**  
Level 2, 60 Park Street  
Sydney NSW 2000  
AUSTRALIA  
  
P: +61 2 9267 2000  
E: info@cdarchitects.com.au  
W: cdarchitects.com.au

**Dubai**  
ETA Star's Al Manara Tower  
L16, Suite 1612, Marasi Drive  
Business Bay, Dubai, UAE  
  
P: +971 4 576 9747  
E: info@cdarchitects.ae  
W: cdarchitects.ae

**Australian  
Institute of  
Architects**

Project

**PROPOSED MIXED USE  
DEVELOPMENT**

1 & 3 Careel Head Road Avalon Beach

Drawing Title

**DRAWING LIST**

Project Stage

**DA Submission**

Job no.

Drawing no.

Rev.

J23587D

DA1001

P2

Drawn by

Checked by

Approved by

Date

GH

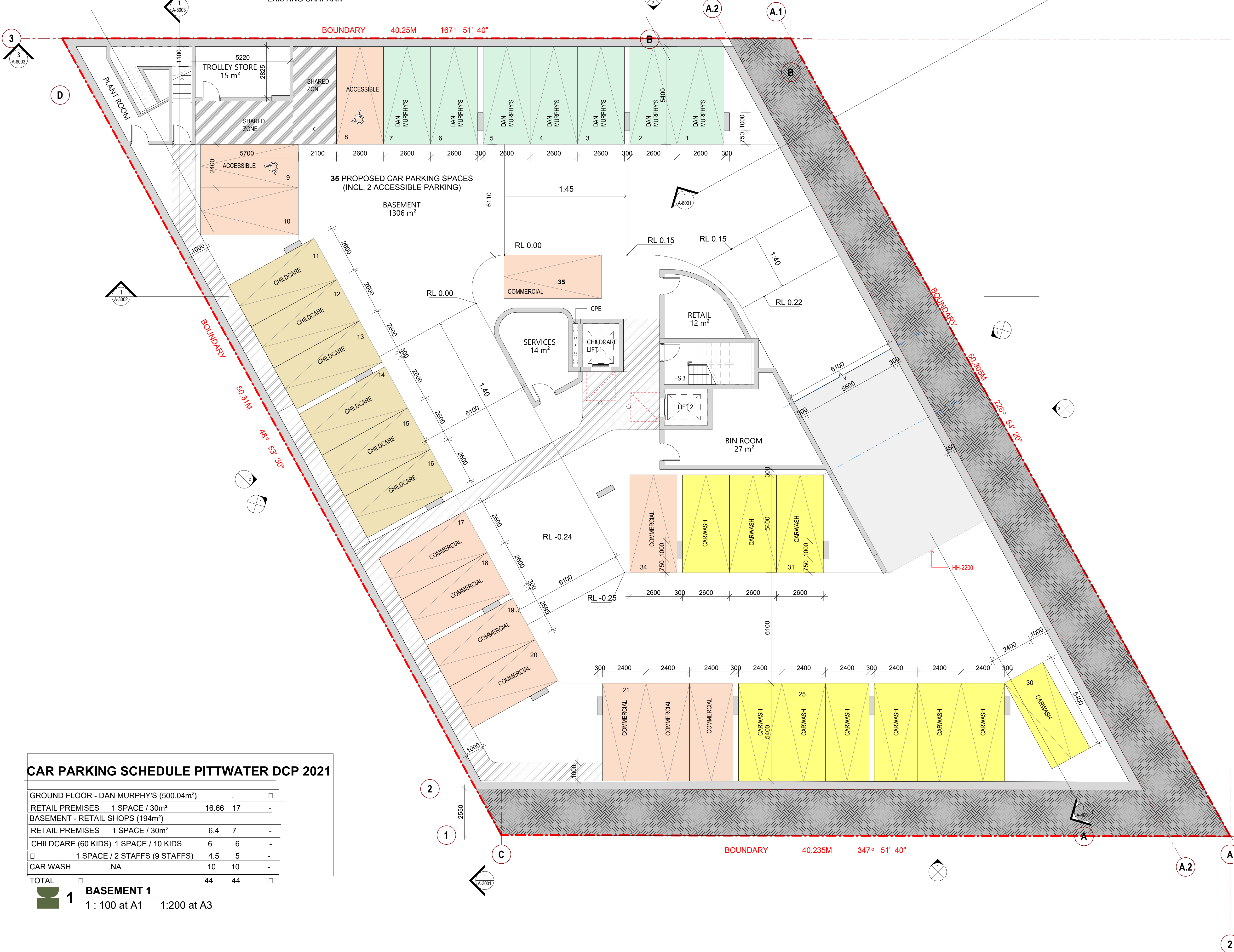
RJ

-

JUN. 2024



NEIGHBOURING PROPERTIES  
5-7 CAREEL HEAD ROAD  
EXISTING CARPARK



**References**  
Any variations or deviations from approved construction drawings must be reviewed and approved by PCA or nominated certifying authority.

Drawings to be read in conjunction with, but not limited to, all structural engineers, stormwater engineers, landscape architects, fire protection, essential electrical services and mechanical services plans & other associated plans & reports.

Refer to current Basix report for additional requirements to ones noted on plans.

**Notes**  
All dimensions and setbacks are to be verified on site and all omissions or any discrepancies to be notified to the architect. Figured dimensions to be used at all times. DO NOT SCALE measurements off drawings.

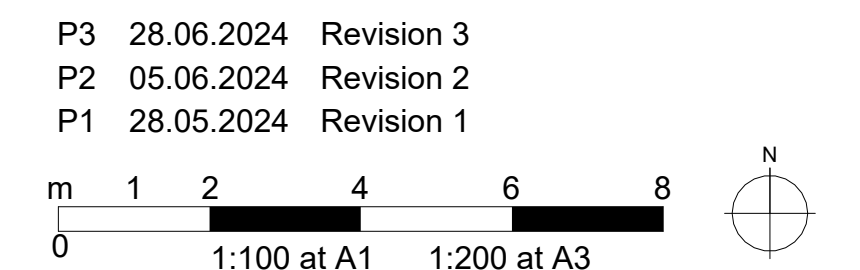
© Copyright

The copyright of this drawing together with any other documents prepared by CDArchitects remains the property of CDArchitects. CDArchitects grants licence for the use of this document for the purpose for which it is intended. The licence is not transferable without permission from CDArchitects.

Nominated Architect: Liljana Emilova 7887, ABN 24 243 205 327

PARKING LEGEND

- CHILDCARE
- COMMERCIAL
- DAN MURPHY'S
- CAR WASH



**Sydney**  
Level 2, 60 Park Street  
Sydney NSW 2000  
AUSTRALIA  
P: +61 2 9267 2000  
E: info@cdarchitects.com.au  
W: cdarchitects.com.au

**Dubai**  
ETA Star's Al Manara Tower  
L16, Suite 1612, Marasi Drive  
Business Bay, Dubai, UAE  
P: +971 4 576 9747  
E: info@cdarchitects.ae  
W: cdarchitects.ae

**Australian Institute of Architects**

CAR PARKING SCHEDULE PITTWATER DCP 2021

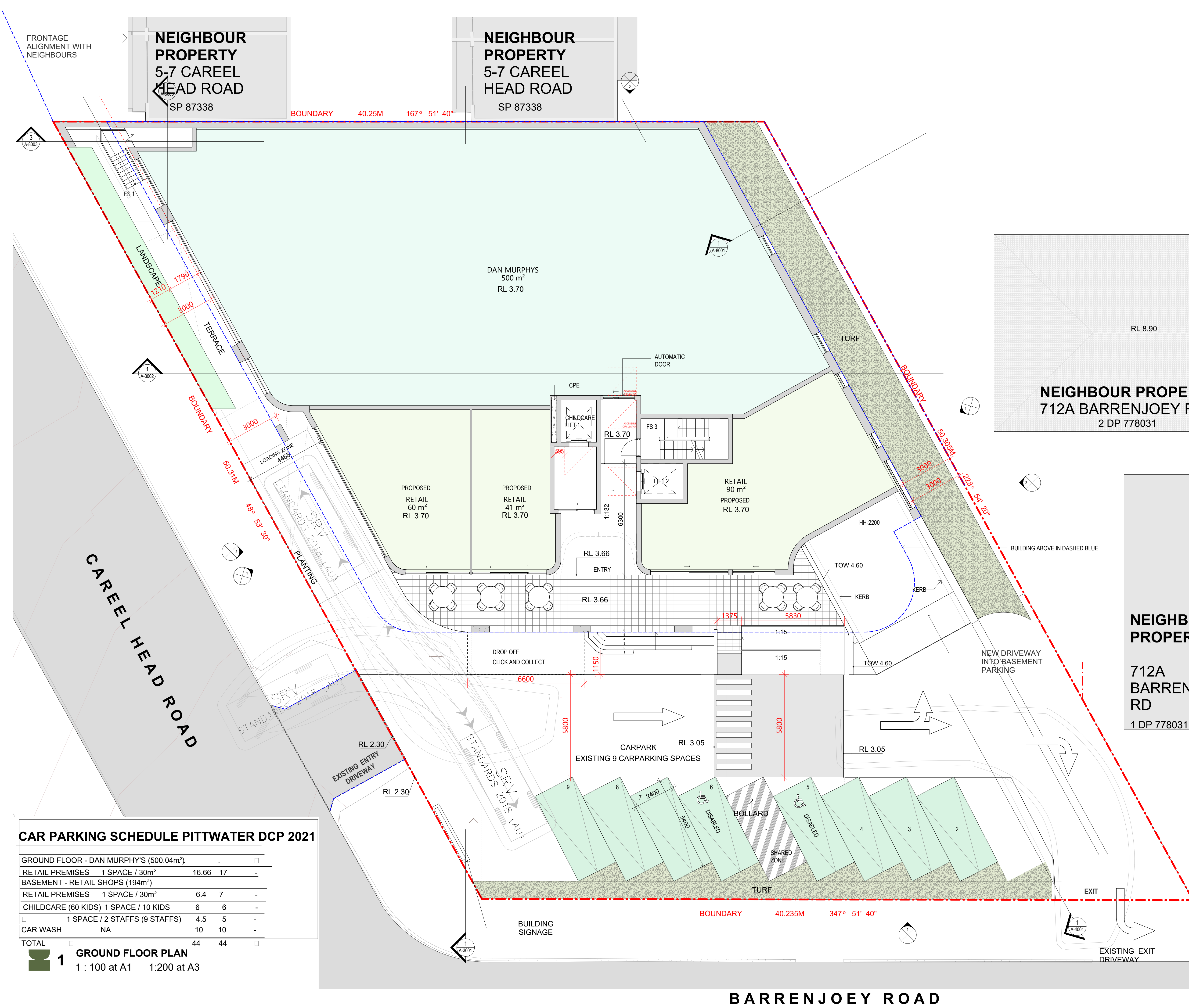
GROUND FLOOR - DAN MURPHY'S (500.04m²)				
RETAIL PREMISES 1 SPACE / 30m²	16.66	17	-	
BASEMENT - RETAIL SHOPS (194m²)				
RETAIL PREMISES 1 SPACE / 30m²	6.4	7	-	
CHILDCARE (60 KIDS) 1 SPACE / 10 KIDS	6	6	-	
1 SPACE / 2 STAFFS (9 STAFFS)	4.5	5	-	
CAR WASH NA	10	10	-	
TOTAL	44	44		

**BASEMENT 1**  
1 : 100 at A1 1 : 200 at A3

Project  
**PROPOSED MIXED USE DEVELOPMENT**  
1 & 3 Careel Head Road Avalon Beach  
Drawing Title  
**BASEMENT 1 FLOOR PLAN**

Project Stage  
**DA Submission**  
Job no. Drawing no. Rev.  
**J23587D DA1100 P3**  
Drawn by Checked by Approved by Date  
GH RJ - JUN. 2024





CAR PARKING SCHEDULE PITTWATER DCP 2021

GROUND FLOOR - DAN MURPHY'S (500.04m <sup>2</sup> )					
RETAIL PREMISES	1 SPACE / 30m <sup>2</sup>	16.66	17	-	
BASEMENT - RETAIL SHOPS (194m <sup>2</sup> )					
RETAIL PREMISES	1 SPACE / 30m <sup>2</sup>	6.4	7	-	
CHILDCARE (60 KIDS)	1 SPACE / 10 KIDS	6	6	-	
1 SPACE / 2 STAFFS (9 STAFFS)					
		4.5	5	-	
CAR WASH	NA	10	10	-	
TOTAL		44	44		

**1 GROUND FLOOR PLAN**  
1 : 100 at A1 1:200 at A3

**References**  
Any variations or deviations from approved construction drawings must be reviewed and approved by PCA or nominated certifying authority.

Drawings to be read in conjunction with, but not limited to, all structural engineers, stormwater engineers, landscape architects, fire protection, essential electrical services and mechanical services plans & other associated plans & reports.

Refer to current Basix report for additional requirements to ones noted on plans.

**Notes**  
All dimensions and setbacks are to be verified on site and all omissions or any discrepancies to be notified to the architect. Figured dimensions to be used at all times. DO NOT SCALE measurements off drawings.

© Copyright

The copyright of this drawing together with any other documents prepared by CDArchitects remains the property of CDArchitects. CDArchitects grants licence for the use of this document for the purpose for which it is intended. The licence is not transferable without permission from CDArchitects.

Nominated Architect: Liljana Emilova 7887, ABN 24 243 205 327

**PARKING LEGEND**

	CHILDCARE
	COMMERCIAL
	DAN MURPHY'S
	CAR WASH

P3 28.06.2024 Revision 3  
P2 05.06.2024 Revision 2  
P1 28.05.2024 Revision 1

m 1 2 4 6 8

0 1:100 at A1 1:200 at A3

CDArchitects

**NEIGHBOUR PROPERTY**  
**712A BARRENJOEY RD**  
1 DP 778031

**Sydney**  
Level 2, 60 Park Street  
Sydney NSW 2000  
AUSTRALIA  
P: +61 2 9267 2000  
E: info@cdarchitects.com.au  
W: cdarchitects.com.au

**Dubai**  
ETA Star's Al Manara Tower  
L16, Suite 1612, Marasi Drive  
Business Bay, Dubai, UAE  
P: +971 4 576 9747  
E: info@cdarchitects.ae  
W: cdarchitects.ae

**Australian Institute of Architects**

Project  
**PROPOSED MIXED USE DEVELOPMENT**  
1 & 3 Careel Head Road Avalon Beach  
Drawing Title  
**GROUND FLOOR PLAN**

Project Stage  
**DA Submission**  
Job no. Drawing no. Rev.  
**J23587D DA1101 P3**  
Drawn by Checked by Approved by Date  
GH RJ - JUN. 2024