

## COLLARROY PROJECTS PTY LTD



# Preliminary Site Investigation



1010-1014 Pittwater Road, Collaroy NSW 2097

# Document Control

**Report Title:** Preliminary Site Investigation; 1010-1014 Pittwater Road, Collaroy NSW 2097

**Report No:** E26053.E01\_Rev1

Copies	Recipient
1 Soft Copy (PDF – Secured, issued by email)	Collaroy Projects Pty Ltd PO Box 456, <b>Pymont NSW 2009</b>
1 Original (Saved to Digital Archives)	EI Australia Pty Ltd Suite 6.01, 55 Miller Street, <b>Pymont NSW 2009</b>

Author		Technical Reviewer	
			
<b>Sean Nolan</b> Environmental Scientist		<b>Pedro Balbachevsky</b> Principal Environmental Engineer SC-CEnvP Cert. No: SCC41198	
Revision	Details	Date	Amended By
0	Original	23 June 2023	-
1	Updated Preliminary DA Plans	20 July 2023	Sean Nolan

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## Executive Summary

EI Australia (EI) was engaged by Collaroy Projects Pty Ltd ('the client') to conduct a Preliminary Site Investigation (PSI) of the property located at 1010-1014 Pittwater Road, Collaroy NSW 2097 ('the site').

The site is located approximately 16km northeast of the Sydney Central Business District (CBD), within the local government area of Northern Beaches Council. It comprises three (3) cadastral allotments, identified as Lot 2 in Deposited Plan (DP) 314645 and Lot 3 & 4 in DP 6777, covering a total area of 1,826m<sup>2</sup>.

At the time of this investigation, the site was being used for commercial/retail and residential purposes. It was comprised of two shop-top, two-storey, residential/commercial buildings and one commercial, one-storey building. Various sheds and detached buildings are located within each of the cadastral allotments.

### **Main Objective**

The main objective of this PSI was to appraise the potential for site contamination on the basis of field observations, historical land uses and other anecdotal and documentary evidence.

### **Key Findings**

- Based on aerial imagery from 1930, the site was previously used for predominantly residential purposes up until the 1950s, when the three structures still standing today were built. Since then, extensions and sheds were constructed along the eastern sides of the buildings. The neighbouring area appears to have always been predominantly used for residential and commercial/retail purposes.
- Site history information indicates that Lot 3 in DP 6777 has been used for retail/commercial purposes since its construction in the 1950s, and has been occupied by Long Reef Surf Shop since 1985 to present day.
- Lot 2 in DP 314645 and Lot 4 in DP 6777 have likely been used for retail/commercial (ground floor units) and residential (first floor apartments) purposes since the construction of the buildings. The ground floor commercial/retail tenants of both lots have likely varied since the buildings construction. Lot 4 in DP 6777 has been occupied by a range of different retail hardware and paint stores.
- No historical owners or tenant records indicate any significantly contaminating activities conducted on the site. However, not all of the tenant activities are provided within the land title information (data gap).
- Suspected hazardous building materials (asbestos-containing materials (ACM) and flaking lead-based paint) were observed throughout the structures on site. Deteriorated corrugated roofing potentially containing ACM was observed within Lot 2 DP 314645 and Lot 3 in DP 6777, which may present an increased risk for asbestos fines impacting the surface site soils.
- Searches of the publicly available NSW EPA records indicated that:
  - The site was free of statutory notices and licencing agreements issued under the *Contaminated Land Management Act 1997* and *Protection of the Environment Operations Act 1997*. No part of the property was included on the *List of NSW Contaminated Sites Notified to the EPA*.
  - There were no entries for the site (or for any properties within a 500m radius of the site) on the Protection of the Environment Operations (POEO) public register.

- Based on local knowledge of the area, the sub-surface conditions are expected to comprise a layer of silty sand filling ( $\leq 1\text{m}$  thickness); overlying natural, residual soils dominated by sand and clay; overlying weathered sandstone bedrock. The potential for ASSs to be present was considered to be low;
- Based on local hydrographic features, groundwater flow direction is inferred to be to the east, towards Fisherman's Beach.
- The CSM established that the site posed a low-medium risk with respect to land contamination, derived from a variety of sources (**Section 4.3**).

Based on the findings of this PSI, and with consideration of EI's *Statement of Limitations* (**Section 7**), it was concluded that there is a low-medium potential for contamination to be present at the site. EI considers the site is suitable for its proposed redevelopment, subject to the implementation of the recommendations outlined in **Section 6**.

# 1. Introduction

## 1.1. Background and Purpose

El Australia (EI) was engaged by Collaroy Projects Pty Ltd ('the client') to conduct a Preliminary Site Investigation (PSI) of the property located at 1010-1014 Pittwater Road, Collaroy NSW 2097 ('the site').

The site is located approximately 16km northeast of the Sydney Central Business District (CBD), within the local government area of Northern Beaches Council (**Figure 1, Appendix A**). It comprises three (3) cadastral allotments, identified as Lot 2 in Deposited Plan (DP) 314645 and Lot 3 & 4 in DP 6777, covering a total area of 1,826m<sup>2</sup> (**Figure 2, Appendix A**).

At the time of this investigation, the site was being used for commercial/retail and residential purposes. It was comprised of two shop-top, two-storey, residential/commercial buildings and one commercial, one-storey building. Various sheds and detached buildings are located within each of the cadastral allotments.

## 1.2. Proposed Development

The following architectural drawings and survey plans were provided and entitled:

- Gartner Trovato Architects (2023) *Long Reef Mixed-Use: 1010-1014 Pittwater Road, Collaroy NSW 2097*, prepared by Gartner Trovato Architects, Project No. 2101, Drawing No. DA-03 – DA-18, dated 17 July 2023.
- SDG (2021) *Detail and Level Survey of Lot 3 and 4 in DP 6777 and Lot 2 in DP 314645*, prepared by SDG Pty Ltd, Reference Job No. 8351, dated 21 January 2021.

Based on the client provided plans (**Appendix B**), the proposed development will involve the demolition of the existing buildings and the construction of:

- A three-storey shop-top housing complex consisting of 22 residential units and three retail tenancies (380m<sup>2</sup> total ground floor area (GFA));
- An area of deep soil retainment along the eastern site boundary; and
- A combination of at-grade and basement level parking areas.

The basement finished floor level (FFL) is proposed to be at 10.23 metres Australian Height Datum (mAHD).

## 1.3. Project Objective

The objectives of this PSI were to:

- Provide a qualitative assessment of the environmental condition of the site, by appraising the potential for contamination on the basis of field observations, historical land uses and other anecdotal and documentary evidence;
- Provide a conclusion about the suitability of the site for its proposed use; and
- Provide recommendations for further investigation of the site (if required).

## 1.4. Scope of Works

In order to achieve the above objective, the following scope of works was completed:

- A review of relevant geological and soil landscape maps for the site area;
- A search for groundwater bore records within close vicinity (500m radius) of the site;
- A site walkover inspection;
- A review of site history, based on land title records, a set of aerial photographs (dating back to 1930) and property files archived by Northern Beaches Council;
- A search of NSW WorkCover (SafeWork NSW) records for information relating to possible underground tank approvals and locations;
- A review of existing underground services on site;
- Searches of public registers maintained by the NSW Environment Protection Authority (NSW EPA) for statutory notices and licensing agreements issued under the *Contaminated Land Management Act 1997* and *Protection of the Environment Operations Act 1997*;
- A search of the *List of NSW Contaminated Sites Notified to the EPA*;
- Presentation of a conceptual site model (CSM); and
- Data interpretation and reporting.

This PSI report was completed with reference to the NSW EPA (2020). It documents the investigation works, with discussion of the findings in regards to potential exposure pathways to human health and the environment. It concludes with a statement concerning the potential for contamination to exist on the land.

## 1.5. Regulatory Framework

The following regulatory framework and guidelines were considered for this PSI:

- *Contaminated Land Management Act 1997* (the CLM Act 1997);
- *Protection of the Environment Operations Act 1997* (the POEO Act 1997);
- *Environmental Planning and Assessment Act 1979* (the EP&A Act 1979);
- *State Environmental Planning Policy (Resilience and Hazards) (2021)*;
- *Warringah Development Control Plan 2011*;
- *Warringah Local Environmental Plan 2011*;
- NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure*;
- NSW EPA (2014) *Waste Classification Guidelines*;
- NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme*; and
- NSW EPA (2020) *Consultants Reporting on Contaminated Land*.

## 2. Site Description

### 2.1. Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**. The site locality and assessment area are shown in **Figures 1** and **2**, **Appendix A**.

**Table 2-1 Site Identification**

Attribute	Description
Street Address	1010-1014 Pittwater Road, Collaroy NSW 2097
Location	16km northeast of the Sydney CBD, bound by residential/commercial properties (north, south), residential properties (east), and Pittwater Road (west).
Geographical Coordinates	North-eastern corner of site (GDA2020-MGA56): <ul style="list-style-type: none"> <li>▪ Easting: 342797.454</li> <li>▪ Northing: 6265658.791</li> </ul> (Source: <a href="http://maps.six.nsw.gov.au">http://maps.six.nsw.gov.au</a> )
Site Area	1,846m <sup>2</sup> (Source: <a href="http://maps.six.nsw.gov.au">http://maps.six.nsw.gov.au</a> )
Lot and DP	Lot 2 in DP 314645 (1014 Pittwater Road) Lot 3 in DP 6777 (1012 Pittwater Road) Lot 4 in DP 6777 (1010 Pittwater Road)
State Survey Marks	Six permanent and four state survey marks are situated within close proximity (<250m) to the site: <ul style="list-style-type: none"> <li>▪ PM3978: on Ocean Grove (approximately 241m west);</li> <li>▪ PM43805D: on Pittwater Road and Ocean Grove intersection (approximately 31m northwest);</li> <li>▪ PM61792D: on Pittwater Road and Ocean Grove intersection (approximately 34m northwest);</li> <li>▪ PM41888D: on Ocean Grove (approximately 64m northeast);</li> <li>▪ PM60581F: on Ocean Grove (approximately 83m east);</li> <li>▪ PM3979: on Ocean Grove and Beach Road intersection (approximately 149m northeast);</li> <li>▪ SS18994D: on Ocean Grove and Hay Street intersection (approximately 142m west);</li> <li>▪ SS40949: on Ocean Grove and Hay Street intersection (approximately 141m west);</li> <li>▪ SS2191D: on Ocean Grove and Hay Street intersection (approximately 140m west);</li> <li>▪ SS197281F: on Pittwater Road and Ocean Grove intersection (approximately 31m north);</li> </ul> (Source: <a href="http://maps.six.nsw.gov.au">http://maps.six.nsw.gov.au</a> )
LGA	Northern Beaches Council (formerly Warringah Council)
Parish	Manly Cove
County	Cumberland
Current Zoning	E1: Local Centre (Warringah Local Environmental Plan 2011)

## 2.2. Local Land Use

The site is situated within a general commercial and residential area. The sensitive receptors within close proximity (<300m) to the site are identified in **Table 2-2**.

**Table 2-2 Local Land Use**

Direction	Land Use Description	Sensitive Receptor (distance from site)
North	Commercial and residential properties Collaroy Medical Centre Warringah Place Retirement Village	Residents/visitors (adjacent) Patients (85m) Residents/visitors (190m)
South	Commercial and residential properties Griffith Park	Residents/visitors (adjacent) Recreation users and ecological habitat (140m)
East	Residential properties Long Reef Aquatic Reserve Fisherman's Beach	Residents (adjacent) Recreation users and ecological habitat (260m) Recreation users and ecological habitat (280m)
West	Residential properties	Residents (30m)

## 2.3. Regional Setting

Regional topography, (hydro)geology and soil landscape information is given in **Table 2-3**.

**Table 2-3 Regional Setting**

Attribute	Description
Topography	The site slopes slightly to the east, with elevations approximately ranging between 14 to 13 mAHD, from the western to the eastern boundaries (SDG, 2021).
Drainage	Site drainage is likely to consist of mostly surface infiltration. Any run off would flow in an easterly direction, following topography, into the municipal stormwater system (via pit and pipe drainage) towards the nearest water feature (Fisherman's Beach/Pacific Ocean).
Geology	According to the Department of Mineral Resources Geological Map Sydney 1:100,000 <i>Geological Series Sheet 9130</i> (DMR, 1991), the site is underlain by the Newport and Garie Formations of the Middle Triassic Narabeen Group, which consists of interbedded laminate, shale and quartz to lithic quartz sandstone.
Soil Landscape	The NSW Government Department of Planning, Industry, and Environment <i>eSPADE v2.2</i> website indicates that the site overlies the <i>Newport Aeolian Landscape (np)</i> . The Newport Aeolian landscape comprises gently undulating plans to rolling rises of Holocene sands (relief and slopes <10%) Soils are identified as shallow Siliceous Sands overlying moderately deep buried sands including yellow Podzolic Soils. Sandy topsoils on crests and gently slopes and deep Podzols on steep slopes, lower slopes and in depressions.
Acid Sulfate Soil (ASS) Risk	The site is not mapped as containing ASS within the Warringah Local Environmental Plan 2011 - Acid Sulfate Soil Planning Map (Sheet ASS_009). Furthermore, the NSW Government Department of Planning, Industry, and Environment <i>eSPADE v2.2</i> website indicates that the site is also situated in an area of <i>No Known Occurrence</i> . Given the information above and the site elevation (14 mAHD), it was concluded that the potential for the presence of ASS is low. Therefore, further assessments on ASS presence were not deemed warranted.
Nearest Surface Water Feature	Fisherman's Beach, approximately 280m east of the site.

Attribute	Description
Groundwater Flow Direction	Inferred to be in an easterly direction, towards Fisherman's Beach, approximately 280m east of the site. Based on groundwater bore records in the area ( <b>Section 2.4</b> ), groundwater could range in between 2.0 and 8.7 mBGL.

## 2.4. Groundwater Bore Records and Local Groundwater Use

An online search for groundwater bores registered with WaterNSW was conducted on 17 April 2023 (Ref. <https://realtimedata.waternsw.com.au/water.stm>). There were six (6) registered bores within a 500m radius of the site (**Appendix E**). A summary of the registered bores is presented in **Table 2-4**.

**Table 2-4 Groundwater Monitoring Bores within 500m**

Bore	Date Drilled	Total Depth (mBGL)	Standing Water Level (mBGL)	Purpose
GW109682	17/12/2007	85.00	5.00	Irrigation, Recreation
GW106547	01/05/2005	102.00	2.00	Irrigation, Recreation
GW111073	09/06/2010	10.50	8.70	Monitoring Bore
GW111072	09/06/2010	10.50	8.40	Monitoring Bore
GW111070	09/06/2010	10.50	5.20	Monitoring Bore
GW111162	09/06/2010	10.50	5.00	Monitoring Bore

Two of the bores (GW109682 and GW106547) were registered for irrigation and recreational purposes. These bores were located within close vicinity to each other, at Griffith Park and Long Reef Golf Course, approximately 250m south-east of the site. All other bores were used for monitoring purposes. Based on local topography, groundwater migrating from site would likely discharge at Fisherman's Beach (east of site), which would then be exposed to recreation users of the water body.

## 2.5. Site Walkover Inspection

Observations were recorded during a walkover inspection of the site, conducted on 5 April 2023. These observations are summarised below. Photographs taken during the inspection are presented in **Appendix C**.

- The site is located in a residential and commercial area. The surrounding commercial activities included; hairdressers, swim/pool shop, legal services, real estate, ski shop, etc;
- At the time of the investigation, the site was divided into three lots; Lot 2 in DP 314645, Lot 3 in DP 6777 and Lot 4 in DP 6777.

### **Lot 2 in DP 314645**

- Lot 2 in DP 314645 (northern lot) consisted of a two-storey commercial and residential brick building on the eastern side, and a detached brick toilet/laundry structure on the rear (east) yard area;
- The external area of the building was observed to be in fair condition, with paint flaking (likely lead-based) observed predominately on the eastern side;



- The first floor contained two residential apartments. The ground floor was separated in half, with the southern section being occupied by DK Design Kitchens and the northern section by Hampton Kitchens, which was observed to be unoccupied and inaccessible;
- The internal area of DK Design Kitchens was observed to have been through modern renovations;
- The eastern yard area consisted of a detached laundry and toilet brick structure. Suspected corrugated ACM roofing was evident, observed to be in fair conditions (**Photograph 4**);
- Aerial imagery shows that the suspected ACM roofing may also be present on the main building;
- Grassed surfaces were observed to be generally well kept. However, overgrown areas were observed along the concrete slabs (**Photograph 5**);
- Suspected ACM formwork sheeting was observed along the external northern vertical brick staircase wall, which leads up to the residential apartments (**Photograph 6**);
- DK Design Kitchens continues along the southern boundary into the northern section of the building at Lot 3 in DP 6777.
- No visual evidences of infrastructure associated with underground petroleum storage systems (UPSS) were observed on the lot.

#### **Lot 3 in DP 6777**

- Lot 3 in DP 6777 (central lot) was occupied by a one-storey commercial brick building on the eastern side, and multiple metal sheds and shipping containers on the rear (east) yard area;
- The main southern portion of the commercial brick building was occupied by Long Reef Surf Shop (established in 1985), while the northern portion was occupied by DK Design Kitchens, which connects into Lot 2 in DP 314645 (**Photograph 7**);
- Multiple metal sheds and storage containers were used for shop storage of various surf equipment and gear for the Long Reef Surf Shop (**Photograph 9**);
- The eastern section of the site was covered predominantly by grass, which was generally well kept, excluding areas along the eastern site boundary (**Photograph 11**);
- Brick and concrete pavement was evident under the shed footprints and central section of the site, which was observed to be in fair condition;
- Suspected ACM roofing/gutters/capping and walls were observed on the detached shed on the northern side of the lot. Minor cracks and signs of deterioration were noted (**Photograph 13**);
- An unknown stockpile was observed on the south-eastern site boundary, which was covered predominantly by vegetation. Minor bare patches indicate the stockpile consists of silty sand soil, with anthropogenic material such as concrete. Anecdotal information from the tenant suggests it may have been generated by the previous tenant through gardening activities (lawn clippings) (**Photograph 12**);
- A sewer maintenance pit was observed on the north-eastern side of the lot;
- No visual evidences of infrastructure associated with underground petroleum storage systems (UPSS) were observed on the lot.

#### **Lot 4 in DP 6777**

- Lot 4 in DP 6777 (southern lot) was occupied by a two-storey residential and commercial brick/metal building on the eastern side (**Photograph 14**), and two green metal sheds on the rear (east) yard area (**Photograph 15**);

- The top floor comprised two apartments and the ground floor was separated by two units; the southern unit was occupied by 'Miller Stone & Co', and the northern unit was vacant at the time of inspection (sign indicating previous retail shop 'Imperfect Nutritionist') (**Photograph 14**);
- Furthermore, the western shop front had deteriorated signage indicating that the units were previously occupied by a paint shop;
- Two large metal green sheds were adjacent to the eastern side of the building, and centrally located within the property. These were inaccessible at the time of the inspection (**Photograph 18**);
- The ground surface was covered by concrete and brick pavement within building footprints, and by grassed surfaces on the eastern yard area;
- The grass and vegetation was observed to be in fair condition. A gravelly fill material was observed within areas of bare patches;
- An overgrown vegetated area was noted on the south-eastern corner of the lot. The ground surface was not visible (**Photograph 16**);
- No visual evidences of infrastructure associated with an underground petroleum storage systems (UPSS) were observed on the lot.



Year	Registered Proprietor(s) and Occupations
1955 to 1955	John Barry Clunies (Manager)
1955 to 1957	Miriam Webb (Married Woman) John Tulich (Builder)
1957 to 1971	John Tulich (Builder)
1971 to 1980	Philip Colin Douglas (Chartered Accountant) John Ross Wilkins (Solicitor) Maurice Karl Segedin (Tiler)
1980 to 2015	Maria Lucia Tulich (Clerk) Katherine Vicki Tulich (Clerk)
2015 to Date	Collaroy Projects Pty Ltd
<b>Lot 4 in DP 6777</b>	
1923 to 1923	Matilda McGinty (Married Woman)
1923 to 1924	Maggy Eliza Bristow (Married Woman)
1924 to 1941	Charles Bristow (Wool Buyer)
1941 to 1945	Robert Walter Hardie (Gentleman)
1945 to 1950	Henry Delahunt Matthews (Medical Practitioner)
1950 to 1967	Eileen Maude Field (Married Woman)
1967 to 1980	Jack Musgrove (Hardware Shop Proprietor)
1980 to 1982	Donald George Wormald (Company Director) Handleigh Building Company Pty Ltd
1982 to 2021	Harmonu Pty Ltd
2021 to Date	Collaroy Projects Pty Ltd

### 3.2. Historical Aerial Photograph Review

The historical aerial photographs reviewed as part of this PSI were obtained from on-line resources and included:

- 1930, 1950, 1964, 1970, 1977, 1985, 1997, and 2004: via Spatial Service NSW (<https://portal.spatial.nsw.gov.au/portal/apps/sites/#/homepage/pages/map-viewers>);
- 2005 to 2023: via Google Earth.

A summary of the findings is given in **Table 3-2**.

**Table 3-2 Summary of Aerial Photograph Observations**

Year	Onsite Land Use	Adjacent Land Use
1930	Potentially two buildings (difficult to ascertain due to picture quality) within the site boundary.	<b>North</b> – Unknown corner building (potentially commercial); <b>East</b> – Residential buildings; <b>South</b> – Residential buildings; <b>West</b> – Pittwater Road.
1950	Two buildings observed on Lot 2 in DP 314645 and Lot 3 in DP 6777. Lot 4 in DP 6777 is observed to be vacant land with multiple trees.	<b>North</b> – Multiple structures on the property adjacent to the site boundary; <b>East</b> – No significant change in imagery;

Year	Onsite Land Use	Adjacent Land Use
		<b>South</b> – No significant change in imagery; <b>West</b> – No significant change in imagery.
1964	Two previous buildings observed to be demolished. Three main structures now located on the western side of the site. Small structures located on the eastern side of each building. The eastern section of site appears to be mostly vacant and grassed over.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – No significant change in imagery; <b>West</b> – No significant change in imagery.
1970	No significant change in imagery.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – No significant change in imagery; <b>West</b> – More residential housing developed on the other side of Pittwater Road.
1977	More detached sheds/structures observed on the eastern side of the building at Lot 4 in DP 6777.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – Residential properties observed to be removed and cleared for redevelopment. <b>West</b> – No significant change in imagery.
1985	Additional shed/structure observed to be building along the northern site boundary.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – No significant change in imagery; <b>West</b> – No significant change in imagery.
1997	Additional structures observed within the central sections of Lot 3 in DP 6777 and Lot 4 in DP 6777.	<b>North</b> – No significant change in imagery; <b>East</b> – Building to the north-east observed to be demolished and a new residential building constructed; <b>South</b> – Residential property directly to the south demolished and land is now part of new development still undergoing construction. <b>West</b> – No significant change in imagery.
2004	Significantly more trees and vegetation in Lot 3 in DP 314645.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – New development has been constructed (commercial and residential); <b>West</b> – No significant change in imagery.
2005-2023	No significant change in imagery.	<b>North</b> – No significant change in imagery; <b>East</b> – No significant change in imagery; <b>South</b> – No significant change in imagery; <b>West</b> – No significant change in imagery.

### 3.3. Council Information

A request to access property files archived by Northern Beaches Council was submitted on 30 May 2023. At the time of writing this report, a response from council was yet to be received. When records become available to EI, and if any potential contaminating sources are identified,

an addendum to this report will be prepared. Based on the information obtained during this investigation, it is not expected that the lack of data would impact the assessment.

### 3.4. Before You Dig (BYD)

A review of BYD information indicates the following services:

- a disused 150 vitreous clay (150 VC) sewer main (Sydney Water) runs along the eastern side of the site;
- a sewer maintenance hole is also situated on the north-western corner of Lot 3 in DP 6777;
- a Jemena gas service line also leads into the western side of Lot 2 in DP 314645 from Pittwater Rd;
- Multiple Telstra and NBN service lines.

### 3.5. SafeWork NSW Dangerous Goods Register Records

A search of SafeWork NSW records for information relating to the on-site storage of hazardous chemicals, including possible UPSS approvals and locations, was requested by EI during the course of this PSI (requested on 31 May 2023). A response was issued by SafeWork NSW on 26 June 2023, indicating that the search did not locate any records pertaining to the site.

### 3.6. NSW EPA Online Records

Searches of public registers maintained by the NSW EPA for statutory notices and licensing agreements issued under the *Contaminated Land Management Act 1997* (CLM Act 1997) and *Protection of the Environment Operations Act 1997* (POEO Act 1997) were conducted by EI for this PSI.

#### **Record of Notices Under Section 58 of CLM Act 1997**

An on-line search of the contaminated land public record was conducted on 18 April 2023. The contaminated land public record is a searchable database of:

- Orders made under Part 3 of the CLM Act 1997;
- Notices available to the public under Section 58 of the CLM Act 1997;
- Approved voluntary management proposals under the CLM Act 1997 that have not been fully carried out and where the approval of the EPA has not been revoked;
- Site audit statements provided to the EPA under Section 53B of the CLM Act 1997 that relate to significantly contaminated land;
- Where practicable, copies of anything formerly required to be part of the public record; and
- Actions taken by the EPA under Section 35 or 36 of the *Environmentally Hazardous Chemicals Act 1985* (EHC Act 1985).

The search confirmed that neither the site nor the surrounding lands within close proximity ( $\leq 250\text{m}$ ) were subject to any regulatory notices relevant to the above legislations.

#### **List of NSW Contaminated Sites Notified to EPA**

A search through the *List of NSW Contaminated Sites Notified to the EPA* under Section 60 of the CLM Act 1997 was conducted on 31 May 2023. This list is maintained by the NSW EPA and includes properties on which contamination has been identified, but not deemed to be impacted significantly enough to warrant regulation.

The search confirmed that neither the site nor the surrounding lands within close proximity ( $\leq 250\text{m}$ ) had been notified as contaminated to the NSW EPA (i.e. none were included on the list).

***POEO Public Register***

A search of the *Protection of the Environment Operations Act 1997* public register was conducted on 31 May 2023. This register contains records relating to environmental protection licences, applications, notices, audits, pollution studies and reduction programs.

The search confirmed that neither the site nor the surrounding lands within close proximity ( $\leq 250\text{m}$ ) were subject to any licensing agreements / notices / programs relevant to the above legislation.



## 4. Conceptual Site Model

In accordance with the NEPC (2013) *Schedule B2 - Guideline on Site Characterisation*, a CSM was developed as part of the contamination appraisal, which assessed plausible linkages between potential contamination sources, migration pathways and receptors. It is hereby presented, taking into account the findings from the walkover inspection and the historical search information.

### 4.1 Rationale

The primary purpose of this PSI was to appraise the potential for contamination to exist on the site. If such a potential was suspected, the environmental and human-health risks associated with contamination were to be evaluated.

This appraisal did not involve intrusive sampling and laboratory analysis of soils, soil vapours or groundwater. Instead, the potential for contamination was based on a desktop study, collating information from history searches and government-maintained databases, as well as a walkover inspection. Professional judgement was then applied, based on previous experience.

#### 4.1. Summary of Site History

Based on the available historical information and walkover inspection (**Sections 2 and 3**), the majority of the site was used for residential purposes up until the early 1950s, when the two residential premises were demolished and three new residential and commercial buildings were constructed.

#### 4.2. Predicted Subsurface Conditions

Based on previous investigations completed by EI within close proximity to the site, the inferred subsurface profile expected at the site is shown in **Table 4-1**.

**Table 4-1 Subsurface Conditions**

Unit	Material	Comment
1	Hardstand	Concrete/Brick pavement
2	Fill	Silty SAND; combination of natural sand and imported top soil material.
3	Residual/Natural soils	Clayey SAND and silty CLAY
4	Sandstone	Newport and Garie Formations of the Narrabeen Group; Sandstone is expected to be initially of very low strength and extremely weathered, with the strength generally increasing and weathering generally decreasing with depth.
5	Groundwater	The depth to groundwater is inferred to be between 2.0 – 8.7 mBGL based on groundwater monitoring bore records within the vicinity of the site ( <b>Section 2.4</b> ). Groundwater is inferred to flow towards Fisherman's beach to the east.

### 4.3. Potential Contamination Sources

Initial assessment indicated that there was potential for contamination to exist on the site, derived from the following sources:

- The weathering of hazardous materials (including asbestos and lead-based paints), present within former and existing structures;
- Former and current on-site storage of hardware, building materials, paints and thinners;
- Imported fill materials of unknown origin and quality (used to grade paved / building areas);
- Application of pesticides around building (footing) perimeters;
- Leakage from vehicles within the parking areas.

#### **Emerging Chemicals**

The NSW EPA uses Chemical Control Orders (CCOs) as a primary legislative tool under the *Environmentally Hazardous Chemicals Act 1985* to manage chemicals of concern and limit their potential impact on the environment. Considerations for chemicals controlled by CCOs, and other potential emerging chemicals, are outlined in **Table 4-2**. In this instance, the potential for an emerging chemical of concern to be present on-site was deemed low, with the exceptions of PCB and pesticides (in near-surface fill).

**Table 4-2 Potential for Contamination by an Emerging or Controlled Chemical**

Chemicals of Concern (CCO or emerging)	Decision
Were aluminium smelter wastes used or stored on site (CCO, 1986)?	No
Do dioxin contaminated wastes (CCO, 1986) have the potential to impact the site? <sup>1</sup>	No
Were organotin products (CCO, 1989) used or stored on site? <sup>2</sup>	No
Were polychlorinated biphenyls (PCBs) used or PCB wastes (CCO, 1997) stored on-site? <sup>3</sup>	Possibility for PCBs to be present in fill of unknown quality imported to the site.
Were scheduled chemical or wastes (CCO, 2004) used or stored? <sup>4</sup>	Possibility for pesticides to have been applied to building footprints for termite control and/or present in imported fill.
Are other emerging chemicals suspected? <sup>5</sup>	No
If Yes to any questions, has site sampling suite been optimised to include sampling for these chemicals of concern?	Yes

Note 1 From burning of certain chemicals, smelting or chemical manufacturing or fire on or near the site.

Note 2 From anti-fouling paints used or removed at boat and ship yards and marinas.

Note 3 From older transformer oils and electrical capacitors

Note 4 Twenty-four mostly organochlorine pesticides and industrial by-products

Note 5 Other chemicals considered as emerging (e.g. 1,4 dioxane; associated with some CVOC).

## Per- and Poly- Fluoroalkyl Substances (PFAS) Assessment

NSW EPA (2017) requires that PFAS are considered when investigating land contamination. An assessment of the probability for PFAS occurrence is provided in **Table 4-3**. This was based on considerations outlined in the *PFAS National Environmental Management Plan* (HEPA, 2020) and the EnRisk (2016) decision tree. In this instance, the potential for PFAS to be present on-site was considered to be low and PFAS sampling / analysis of soil and water was deemed unwarranted.

**Table 4-3 Potential for PFAS Contamination**

Preliminary Screening	Probability of Occurrence <sup>1</sup>
Is the past or present site activity listed in HEPA (2020) <sup>2</sup> as being an activity associated with PFAS contamination? If so, list activity. <b>Potentially from previous paint shop.</b>	L
Is the past or present off-site activity up-gradient or adjacent to the site listed in HEPA (2020) <sup>2</sup> as being an activity associated with PFAS contamination? If so, list activity.	L
Did fire training involving the use of suppressants occur on-site between 1970 and 2010?	L
Did fire training occur upgradient of or adjacent to the site between 1970 and 2010? <sup>3</sup>	L
Have "fuel" fires ever occurred on-site between 1970 and 2010? e.g. ignition of fuel (solvent, petrol, diesel, kero) tanks	L
Have PFAS been used in manufacturing or stored on-site? <sup>4</sup>	L
Could PFAS have been imported to the site in fill material from a site with activity listed in HEPA (2020)?	L
Could PFAS-contaminated groundwater or run-off have migrated on to the site?	L
Is the site or adjacent sites listed in the NSW EPA PFAS Investigation Program? <sup>5</sup>	L
If the probability is medium or high in any of the rows, does the site analytical suite need to be optimised to include sampling and testing for PFAS in soil (including ASLP testing) and waters?	No
<p>Note 1 Probability: L – low (documentation has been reviewed and there is no recorded instance or compelling rationale), M – moderate (documentation has been reviewed and there is potential for an instance with compelling rationale); H – high (all documentation has been reviewed and there is strong evidence of a recorded instance)</p> <p>Note 2 Activities listed in Appendix B of HEPA (2020). Refer also to <a href="https://www.oecd.org/env/ehs/risk-management/PFC_FINAL-Web.pdf">https://www.oecd.org/env/ehs/risk-management/PFC_FINAL-Web.pdf</a></p> <p>Note 3 Runoff from up-gradient PFAS use may impact surface water, soil, sediment and groundwater</p> <p>Note 4 PFAS used in wide range of industrial processes and consumer products, including the manufacture of non-stick cookware, specialised garments and textiles, Scotchguard™ and similar products (used to protect fabric, furniture, leather and carpets from oils and stains), metal plating and in fire-fighting foams (<a href="https://www.nicnas.gov.au/chemical-information/factsheets/chemical-name/perfluorinated-chemicals-pfas">https://www.nicnas.gov.au/chemical-information/factsheets/chemical-name/perfluorinated-chemicals-pfas</a>)</p> <p>Note 5 <a href="https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program">https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program</a></p>	

#### 4.4. Contaminants of Potential Concern (COPCs)

Based on the sources listed in **Section 4.3**, the COPCs for this site were considered to be:

- Priority Metals (PM) - arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc;
- Total Recoverable Hydrocarbons (TRH);
- Monocyclic aromatic hydrocarbons Benzene, Toluene, Ethylbenzene, Xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Organochlorine and Organophosphorus Pesticides (OCP / OPP);
- Polychlorinated Biphenyls (PCB);
- Asbestos.

#### 4.5. Risk Assessment

A qualitative assessment of the potential risks for the site relating to the identified sources of contamination is summarised in **Table 4-4**.

**Table 4-4 Assessment of Potential Contamination**

Potential Source	Impacted Medium	COPC	Risk of Contamination
Hazardous building materials	Near surface soil	PM (lead in particular), asbestos	<b>Moderate</b> Lead-based paint likely to be present. No fragments of ACM were observed on the site surface, however, suspected ACM roofing showed signs of deterioration which may have impacted surface soils.
Former storage of potentially contaminating goods/products	Soil	PM (lead), TRH, BTEX	<b>Low- Moderate</b> Potential contamination may exist within surface soils due to storage of miscellaneous building materials.
Importation of fill of unknown origin and quality	Near-surface soil (≤1m below ground level)	PM, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos	<b>Low- Moderate</b> Unknown stockpile presence and bare patches identified potential fill.
Application of pesticides	Near surface soil (building footing areas)	PM (arsenic and copper), OCP, OPP	<b>Low</b> If present, likely to be limited to shallow and within current/former building footprint soils.
Leakage from vehicles	Near surface soil	PM (lead), TRH, BTEX, PAH	<b>Low</b> If present, likely to be limited to shallow and within current/former building footprint soils.

A summary of the CSM, including complete or potentially complete source-pathway-receptor (SPR) linkages is presented in **Table 4-5**.

#### 4.6. Potential Receptors

The following potential receptors of site contamination were identified:

- Current and future site users;
- On-site demolition, excavation and construction workers (during future redevelopment);
- Users of the adjacent land (during future redevelopment and future intrusive works);

- Ecological receptors in areas of exposed soil / landscaping;
- Downgradient ecological receptors at Fisherman's Beach (280m east).

#### 4.7. Uncertainties & Data Gaps

The CSM derived for the site was used to qualitatively assess the risks posed to site receptors as a result of complete or potentially complete exposure pathways that may exist within the site. Uncertainties and data gaps remaining for the site were considered to be:

- The condition of surficial soil materials (both fill and natural) across site, which may be impacted by hazardous materials from site structures and formerly demolished structures;
- The internal area of the building and sheds of Lot 4 in DP 6777 was not accessible at the time of the inspection;
- No historical owners or tenant records indicate any significantly contaminating activities conducted on the site. However, not all of the tenant activities are provided within the land title information.

**Table 4-5 Summary of the CSM**

Potential Source	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor	Source-Pathway-Receptor (SPR) Linkage
Hazardous building materials  Former storage of potentially contaminating goods/products  Importation of fill of unknown origin and quality	Soil	PM, TRH, BTEX, PAH, OCP, OPP, PCB, PFAS and asbestos	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment	Ingestion Dermal contact Inhalation of particulates	Current and future site users Demolition / construction workers Adjacent site users Future intrusive workers	<b>Potentially complete.</b> However, the use of personal protective equipment (PPE) is mandatory for construction workers.
			Atmospheric dispersion from soil to outdoor and indoor air spaces			
			Volatilisation of contamination from soil and diffusion to indoor air spaces.	Inhalation of vapours		
Application of pesticides		PM, TRH, BTEX, PAH, OCP, OPP, PCB and PFAS.	Roots absorption of bioavailable compounds from impacted soils.	Biota uptake	Ecological receptors in areas of exposed soil/landscaping	<b>Potentially complete.</b>
Leakage from vehicles	Groundwater	Dissolved PM, TRH, BTEX and PAH	Volatilisation of contamination from groundwater to indoor or outdoor air spaces (onsite and offsite)	Inhalation of vapours	Current and future site users Demolition / construction workers Adjacent site users Future intrusive workers	<b>Potentially complete.</b> However, the use of personal protective equipment (PPE) is mandatory for construction workers.
			Disturbance of surface soils during site redevelopment, future site maintenance and future use of the site post redevelopment	Ingestion Dermal contact		
			Migration of dissolved phase impacts in groundwater via diffusion and advection	Biota uptake	Fisherman's Beach	<b>Potentially complete.</b> Fisherman's Beach is less than 500 m away from the site.

## 5. Conclusion

The site identified as 1010-1014 Pittwater Rd, Collaroy NSW 2097 was the subject of a PSI, with the main objective of appraising the potential for contamination. The key findings of this PSI were as follows:

- Based on aerial imagery from 1930, the site was previously used for predominantly residential purposes up until the 1950s, when the three structures still standing today were built. Since then, extensions and sheds were constructed along the eastern sides of the buildings. The neighbouring area appears to have always been predominantly used for residential and commercial/retail purposes.
- Site history information indicates that Lot 3 in DP 6777 has been used for retail/commercial purposes since its construction in the 1950s, and has been occupied by Long Reef Surf Shop since 1985 to present day.
- Lot 2 in DP 314645 and Lot 4 in DP 6777 have likely been used for retail/commercial (ground floor units) and residential (first floor apartments) purposes since the construction of the buildings. The ground floor commercial/retail tenants of both lots have likely varied since the buildings construction. Lot 4 in DP 6777 has been occupied by a range of different retail hardware and paint stores.
- No historical owners or tenant records indicate any significantly contaminating activities conducted on the site. However, not all of the tenant activities are provided within the land title information (data gap).
- Suspected hazardous building materials (asbestos-containing materials (ACM) and flaking lead-based paint) were observed throughout the structures on site. Deteriorated corrugated roofing potentially containing ACM was observed within Lot 2 DP 314645 and Lot 3 in DP 6777, which may present an increased risk for asbestos fines impacting the surface site soils.
- Searches of the publicly available NSW EPA records indicated that:
  - The site was free of statutory notices and licencing agreements issued under the *Contaminated Land Management Act 1997* and *Protection of the Environment Operations Act 1997*. No part of the property was included on the *List of NSW Contaminated Sites Notified to the EPA*.
  - There were no entries for the site (or for any properties within a 500m radius of the site) on the Protection of the Environment Operations (POEO) public register.
- Based on local knowledge of the area, the sub-surface conditions are expected to comprise a layer of silty sand filling ( $\leq 1\text{m}$  thickness); overlying natural, residual soils dominated by sand and clay; overlying weathered sandstone bedrock. The potential for ASSs to be present was considered to be low;
- Based on local hydrographic features, groundwater flow direction is inferred to be to the east, towards Fisherman's Beach.
- The CSM established that the site posed a low-medium risk with respect to land contamination, derived from a variety of sources (**Section 4.3**).

Based on the findings of this PSI, and with consideration of EI's *Statement of Limitations* (**Section 7**), it was concluded that there is a low-medium potential for contamination to be present at the site. EI considers the site is suitable for its proposed redevelopment, subject to the implementation of the recommendations outlined in **Section 6**.



## 6. Recommendations

EI provides the following recommendations in relation to the future redevelopment of the site:

- Before commencement of demolition works, a hazardous materials survey (HMS) should be completed by a suitably qualified consultant, to identify any hazardous materials present within the existing building fabrics;
  - All identified hazardous materials must be appropriately managed, to maintain worker health and safety during demolition works and to prevent the spread of potentially hazardous substances onto the site and soil surfaces.
  - An asbestos clearance inspection and certificate should be completed by a suitably qualified professional (e.g. SafeWork NSW Licensed Asbestos Assessor or competent person) following the removal of all ACM from the site (if present).
  - Where clearance inspection indicates the presence of hazardous materials remaining on the site, further removal and validation or further clearance inspection works must be undertaken.
- Following demolition of all structures on site, engage an environmental consultant to conduct an inspection of the ground surfaces for any potential contamination sources;
- A Construction Environmental Management Plan (CEMP) for the excavation, waste classification, and handling of all soils from the site should be developed. The CEMP should be prepared in accordance with relevant Northern Beaches Council DCPs and development consent conditions. The CEMP should include provisions for the management of waste soils including, but not limited to:
  - Typical concerns to take into consideration during development, such as, but not limited to, dust, noise, odour, vibration, safety and traffic;
  - Waste management of soils (including fill) to ensure that these are appropriately classified for disposal in accordance with NSW EPA (2014);
  - Unexpected Finds Protocols (UFP), should any unexpected contamination or hazardous materials are identified during the site earthworks.

## 7. Statement of Limitations

This report has been prepared for the exclusive use of Collaroy Projects Pty Ltd, whom is the only intended beneficiary of EI's work. The scope of the investigation carried out for the purpose of this report is limited to that agreed with Collaroy Projects Pty Ltd.

No other party should rely on this document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia, as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this report must be read in conjunction with the whole of this report, including its appendices.

The conclusion presented in this report is based on a limited assessment of historical and current uses of the site. Due to the preliminary nature of this investigation, findings are not based on actual samples collected or testing conducted. EI has relied upon information provided by the client and other third parties to prepare this document, some of which could not be verified by EI due to the anecdotal or historical nature of the information.

EI's professional opinions are reasonable and based on its professional judgment, experience and training.

EI's professional opinions contained in this document are subject to modification if additional information is obtained through the data searches that have been initiated with government authorities.

Technical opinions may also be amended in the light of further investigation, observations, or validation testing and analysis during remedial activities. In some cases, further testing and analysis may be required, which may result in a further report with different conclusions.

## References

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NSW EPA (2022b) *Sampling Design Part 2 - Interpretation: Contaminated Land Guidelines*, Environment Protection Authority of New South Wales, EPA 2022P3916, August 2022.

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Warringah Local Environmental Plan 2011. Retrieved from <http://legislation.nsw.gov.au>

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## Appendix A - Figures

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**LEGEND**

- Approximate site boundary
- Lot Boundary



Drawn:	S.N.
Approved:	-
Date:	31-05-23

**Collaroy Projects Pty Ltd**  
Preliminary Site Investigation  
1010-1014 Pittwater Rd, Collaroy NSW  
Site Location Plan

Figure:  
**2**  
Project: E26053.E01\_Rev0



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## Appendix B – Proposed Development Plans

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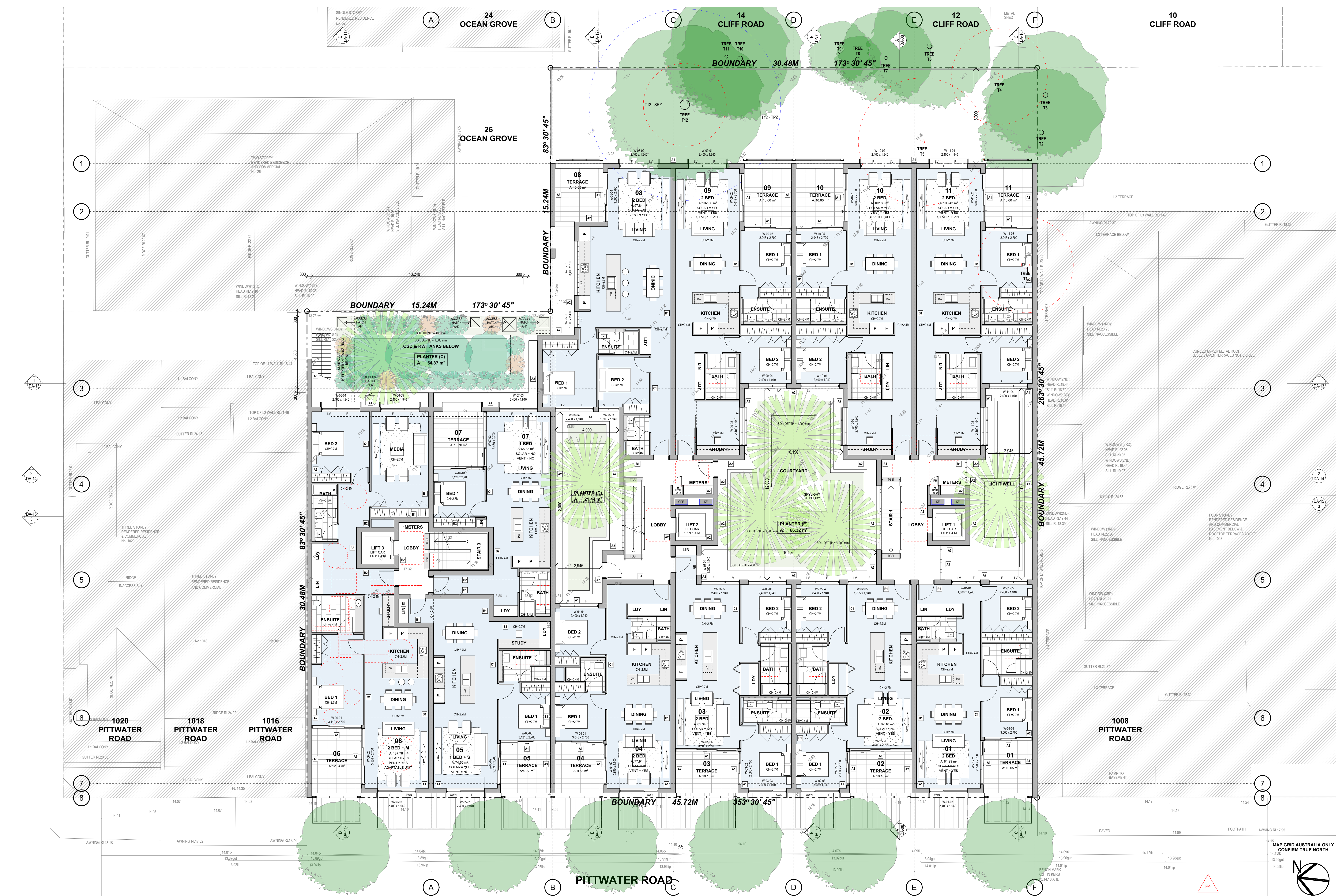












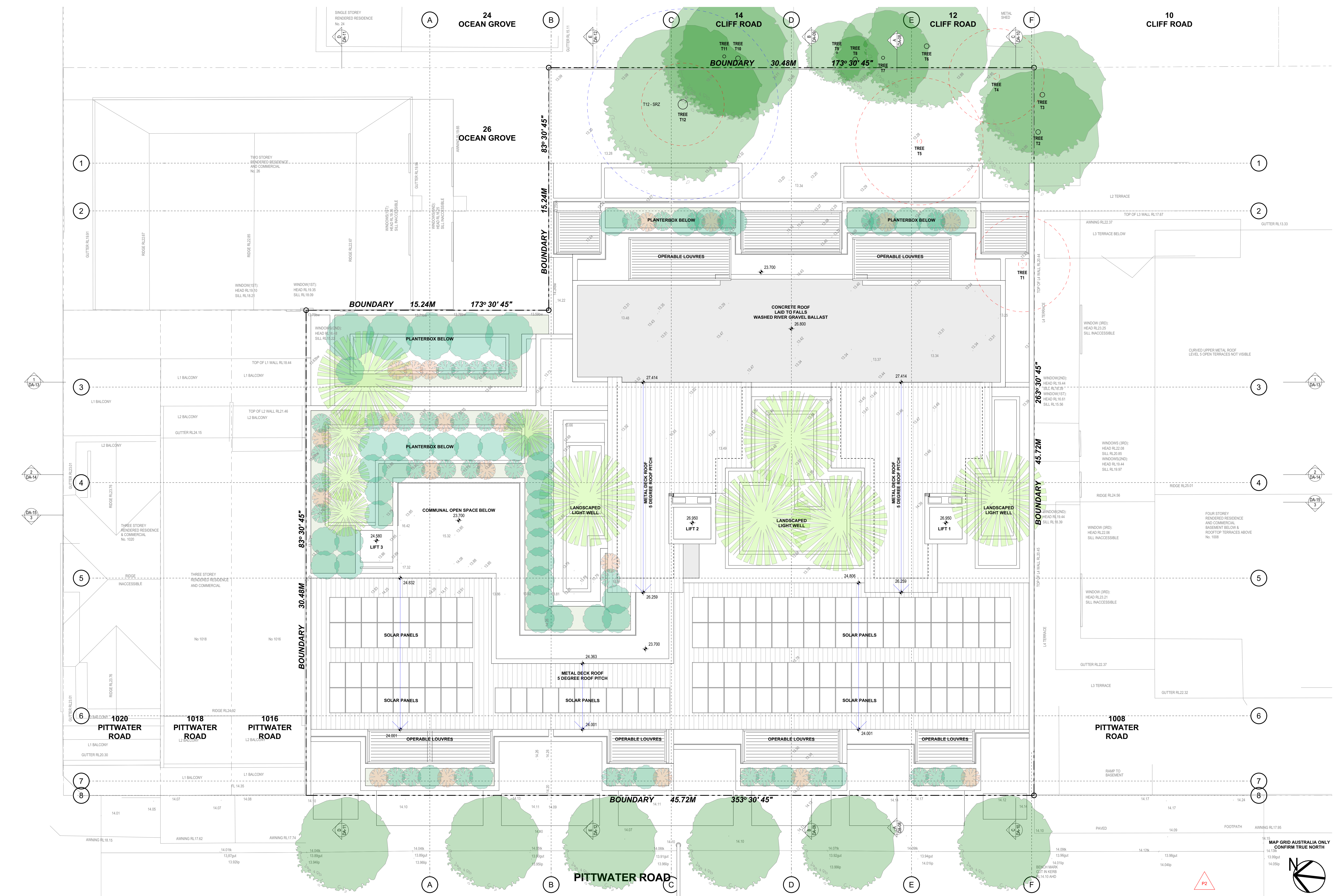




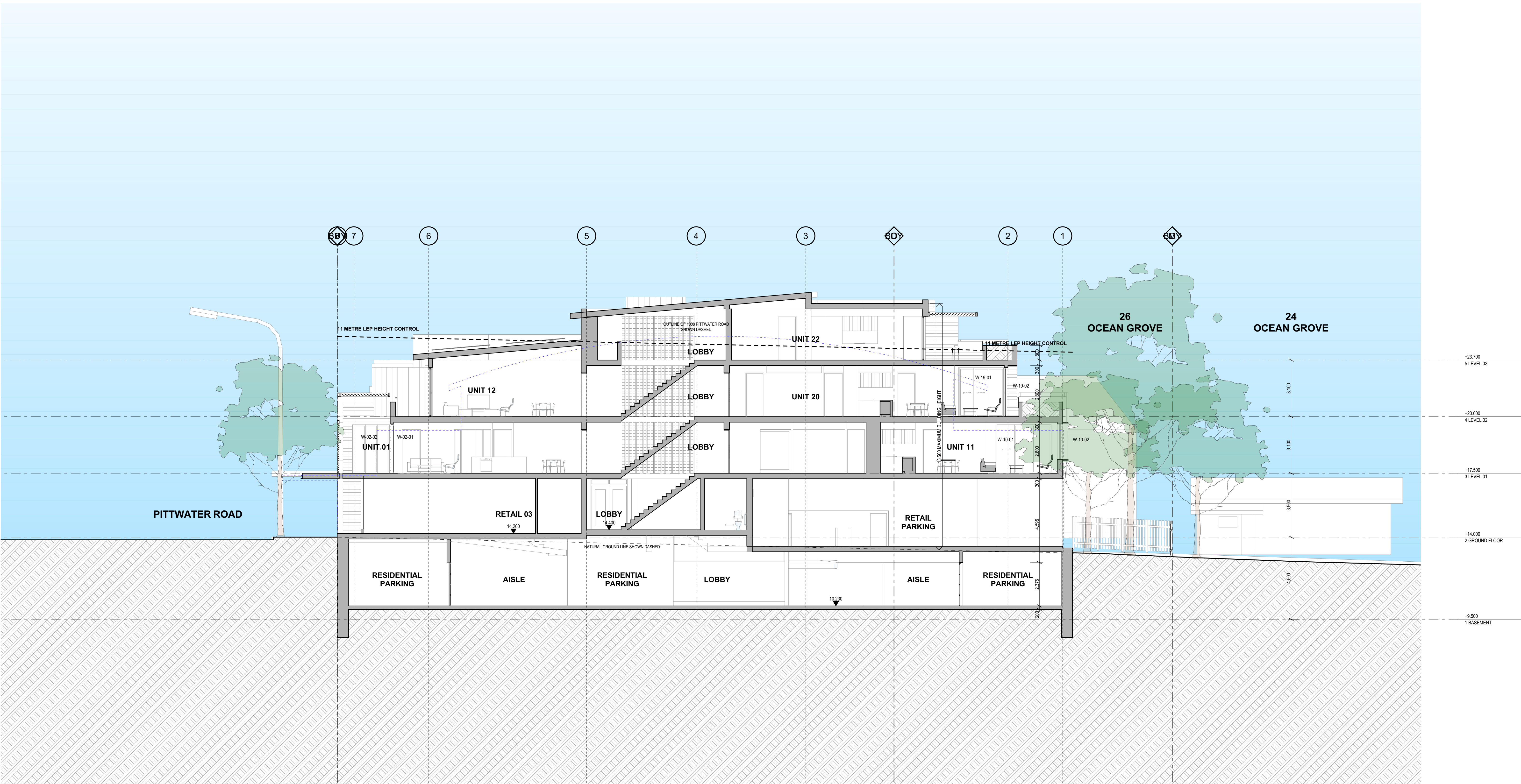








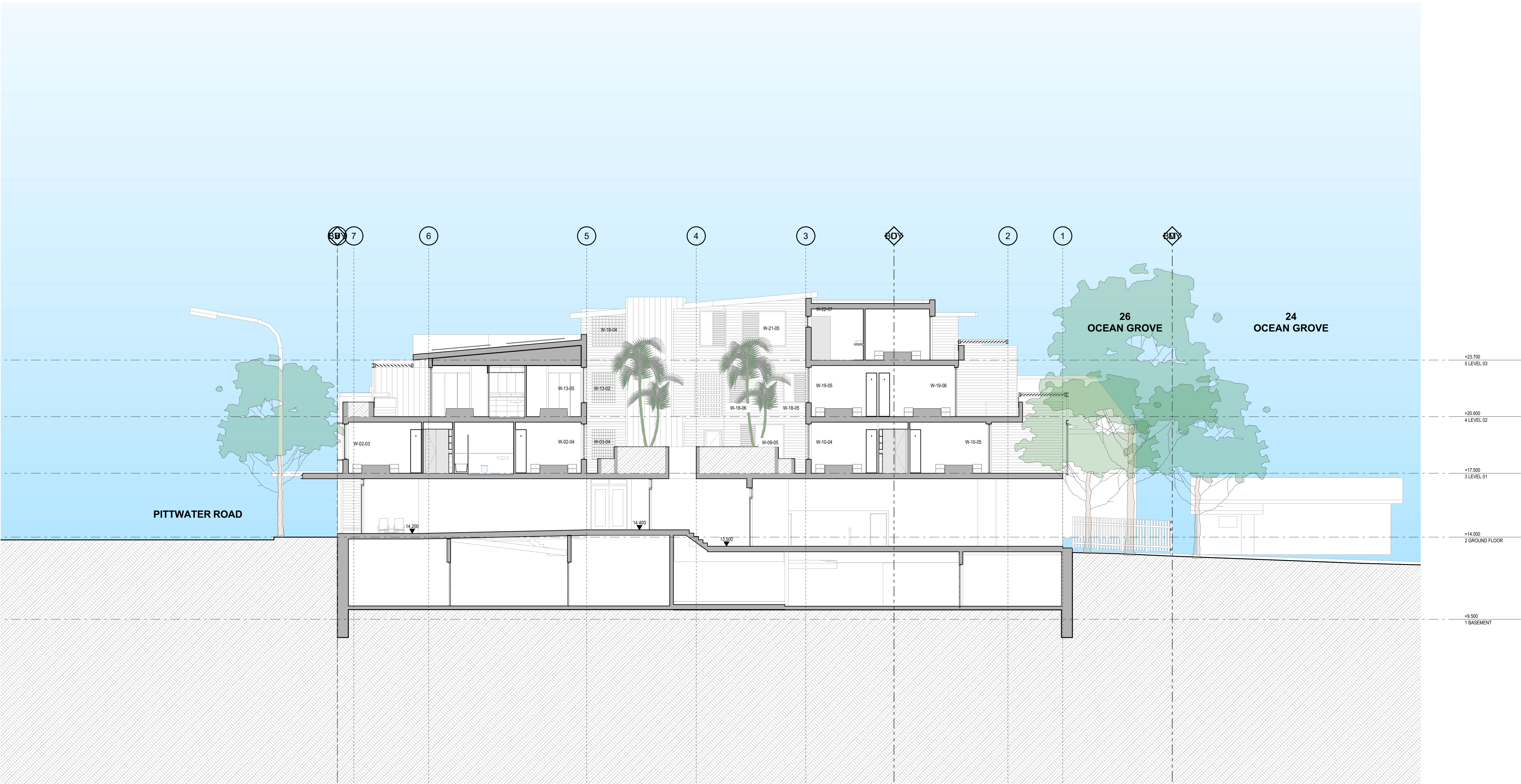




SECTION A

1:100





SECTION B

1:100

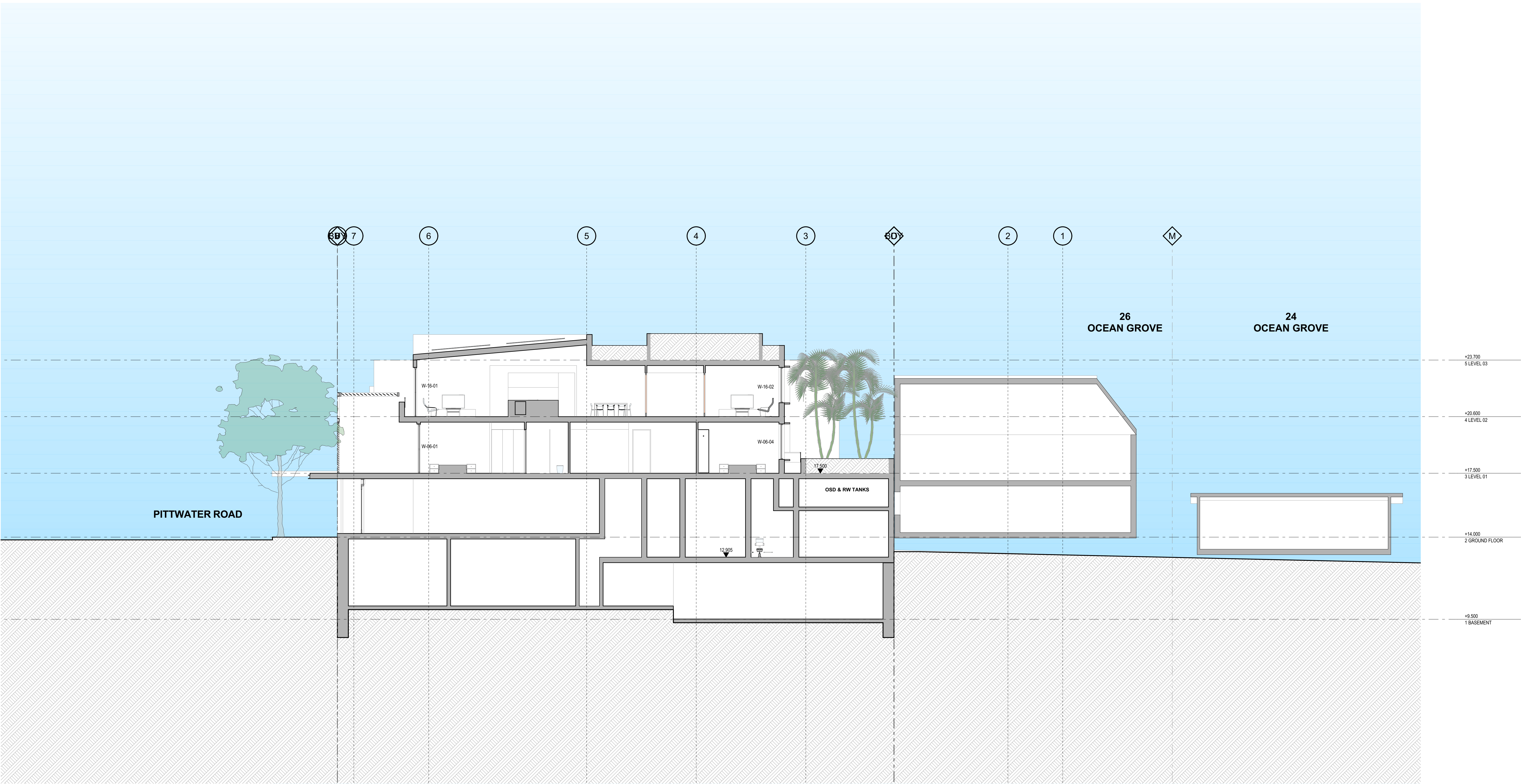




SECTION C

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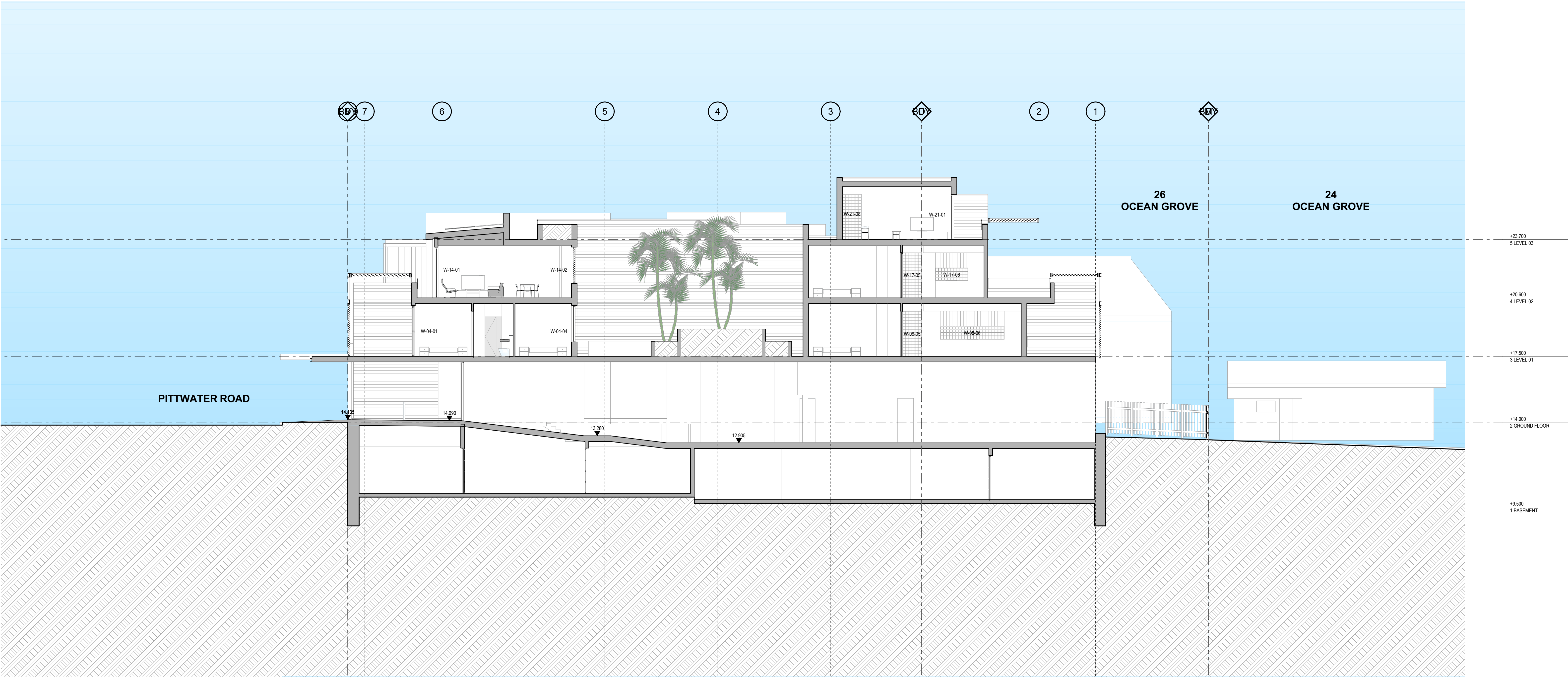




SECTION D

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SECTION E

1:100





















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## Appendix C - Site Photographs

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**Photograph 1:** Image looking north along Pittwater Rd, directly adjacent Lot 4 DP 6777 (photographed 9/6/2023).



**Photograph 2:** Image looking south along Pittwater Rd, directly adjacent Lot 2 DP 314645 (photographed 9/6/2023).



**Photograph 3:** Image of the eastern yard area on Lot 2 DP 314645 (photographed 9/6/2023).



**Photograph 4:** Image of the suspected corrugated ACM roof of the detached laundry on Lot 2 DP 314645 (photographed 9/6/2023).





**Photograph 5:** Image of remnant shed footprint concrete slab on Lot 2 DP 314645 (photographed 9/6/2023).



**Photograph 6:** Image of suspected ACM sheeting attached to brick formwork on Lot 2 DP 314645 (photographed 9/6/2023).



**Photograph 7:** Image of the western (front) side of Lot 3 DP 6777.



**Photograph 8:** Image of the internal area of the Long Reef Surf Shop at Lot 3 DP 6777.





**Photograph 9:** Image of the eastern yard and storage area of the Long Reef Surf Shop at Lot 3 DP 6777.



**Photograph 10:** Image of the eastern yard and shed at Lot 3 DP 6777.





**Photograph 11:** Image of the eastern boundary at Lot 3 DP 6777.



**Photograph 12:** Image of stockpiled material along south-eastern boundary at Lot 3 DP 6777.



**Photograph 13:** Image of suspected ACM roofing on the north-western shed at Lot 3 DP 6777.



**Photograph 14:** Image of western (front) side of Lot 4 DP 6777.





**Photograph 15:** Image of northern walkway of Lot 4 DP 6777.



**Photograph 16:** Image of eastern yard area of Lot 4 DP 6777.



**Photograph 17:** Image looking west towards structures of Lot 4 DP 6777.



**Photograph 18:** Image of sheds within Lot 4 DP 6777.



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## Appendix D - Historical Property Title Search

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ABN: 36 092 724 251  
Ph: 02 9099 7400  
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney  
Sydney 2000  
GPO Box 4103 Sydney NSW 2001  
DX 967 Sydney

**Summary of Owners Report**

**Address: - 1010-1014 Pittwater Road, Collaroy, NSW**

**Description: - Lot 2 D.P. 314645 & Lots 3 & 4 Section 1 D.P. 6777**

**As regards to Lot 2 D.P. 314645: -**

<b><u>Date of Acquisition and term held</u></b>	<b><u>Registered Proprietor(s) &amp; Occupations where available</u></b>	<b><u>Reference to Title at Acquisition and sale</u></b>
29.10.1920 (1920 to 1923)	Henrietta Brown (Married Woman)	Volume 3118 Folio 117
28.02.1923 (1923 to 1935)	Edith Bannister (Married Woman)	Volume 3118 Folio 117 Now Volume 4476 Folio 209
26.06.1935 (1935 to 1950)	Augustine Solomon (Married Woman)	Volume 4476 Folio 209
29.11.1950 (1950 to 1951)	Minnie Thomson (Married Woman) (Transmission Application not investigated)	Volume 4476 Folio 209
07.06.1951 (1951 to 1953)	Doris Louise Maye (Married Woman)	Volume 4476 Folio 209
05.05.1953 (1953 to 1954)	Joseph Raymond Leslie Moore (Chemist)	Volume 4476 Folio 209
09.04.1954 (1954 to 1970)	John Tulich (Builder)	Volume 4476 Folio 209 Now Volume 10408 Folio 197
23.04.1970 (1970 to 2015)	Veronica Tulich (Widow) (Transmission Application not investigated)	Volume 10408 Folio 197 Now 2/314645
24.03.2015 (2015 to Date)	# Collaroy Projects Pty Ltd	2/314645

**# Denotes current registered proprietor**

**Leases, excluding premises: -**

- Various leases were found from 27.03.1990 that have since been surrendered or expired by effluxion of time – not investigated.

**Easements: - NIL**



ABN: 36 092 724 251  
Ph: 02 9099 7400  
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney  
Sydney 2000  
GPO Box 4103 Sydney NSW 2001  
DX 967 Sydney

**As regards to Lot 3 Section 1 D.P. 6777: -**

<b><u>Date of Acquisition and term held</u></b>	<b><u>Registered Proprietor(s) &amp; Occupations where available</u></b>	<b><u>Reference to Title at Acquisition and sale</u></b>
10.04.1919 (1919 to 1946)	Zelie Bristow (Spinster now Married Woman) (Now Zelie Appel)	Volume 2928 Folio 200
14.03.1946 (1946 to 1955)	Jack Clunies Ross (Master Mariner)	Volume 2928 Folio 200
26.08.1955 (1955 to 1955)	John Barry Clunies (Manager) (Transmission Application not investigated)	Volume 2928 Folio 200
06.09.1955 (1955 to 1957)	Miriam Webb (Married Woman) John Tulich (Builder)	Volume 2928 Folio 200 Now Volume 7099 Folios 107 & 108
28.03.1957 (1957 to 1971)	John Tulich (Builder)	Volume 7099 Folios 107 & 108 Now Volume 7279 Folio 218
28.01.1971 (1971 to 1980)	Philip Colin Douglas (Chartered Accountant) John Ross Wilkins (Solicitor) Maurice Karl Segedin (Tiler) (Section 93 Application not investigated)	Volume 7279 Folio 218
11.11.1980 (1980 to 2015)	Maria Lucia Tulich (Clerk) Katherine Vicki Tulich (Clerk)	Volume 7279 Folio 218 Then Volume 15540 Folio 109 Now 3/1/6777
24.03.2015 (2015 to Date)	# Collaroy Projects Pty Ltd	3/1/6777

**# Denotes current registered proprietor**

**Leases, excluding premises: -**

- Various leases were found from 18.10.1990 that have since been surrendered or expired by effluxion of time – not investigated.

**Easements: - NIL**



ABN: 36 092 724 251  
Ph: 02 9099 7400  
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney  
Sydney 2000  
GPO Box 4103 Sydney NSW 2001  
DX 967 Sydney

**As regards to Lot 4 Section 1 D.P. 6777: -**

<b><u>Date of Acquisition and term held</u></b>	<b><u>Registered Proprietor(s) &amp; Occupations where available</u></b>	<b><u>Reference to Title at Acquisition and sale</u></b>
17.01.1923 (1923 to 1923)	Matilda McGinty (Married Woman)	Volume 3409 Folio 6
16.05.1923 (1923 to 1924)	Maggy Eliza Bristow (Married Woman)	Volume 3409 Folio 6
29.05.1924 (1924 to 1941)	Charles Bristow (Wool Buyer)	Volume 3409 Folio 6
14.03.1941 (1941 to 1945)	Robert Walter Hardie (Gentleman)	Volume 3409 Folio 6
18.12.1945 (1945 to 1950)	Henry Delahunt Matthews (Medical Practitioner)	Volume 3409 Folio 6
12.07.1950 (1950 to 1967)	Eileen Maude Field (Married Woman)	Volume 3409 Folio 6
11.07.1967 (1967 to 1980)	Jack Musgrove (Hardware Shop Proprietor)	Volume 3409 Folio 6 Now Volume 13928 Folio 20
24.11.1980 (1980 to 1982)	Donald George Wormald (Company Director) Handleigh Building Company Pty. Limited	Volume 13928 Folio 20
07.12.1982 (1982 to 2021)	Harmonu Pty. Ltd.	Volume 13928 Folio 20 Now 4/1/6777
27.05.2021 (2021 to Date)	# Collaroy Projects Pty Ltd	4/1/6777

**# Denotes current registered proprietor**

**Leases, excluding premises: -**

- 10.07.1952 (F752741): Lease to Jack Musgrove (Commercial Traveller) and Edith Mary Musgrove (Married Woman). Expired by effluxion of time 01.08.1967.
- Various leases were found from 03.09.1993 that have since been surrendered or expired by effluxion of time – not investigated.

**Easements: - NIL**

---

Yours Sincerely,  
Taylor Wilson  
8<sup>th</sup> June 2023

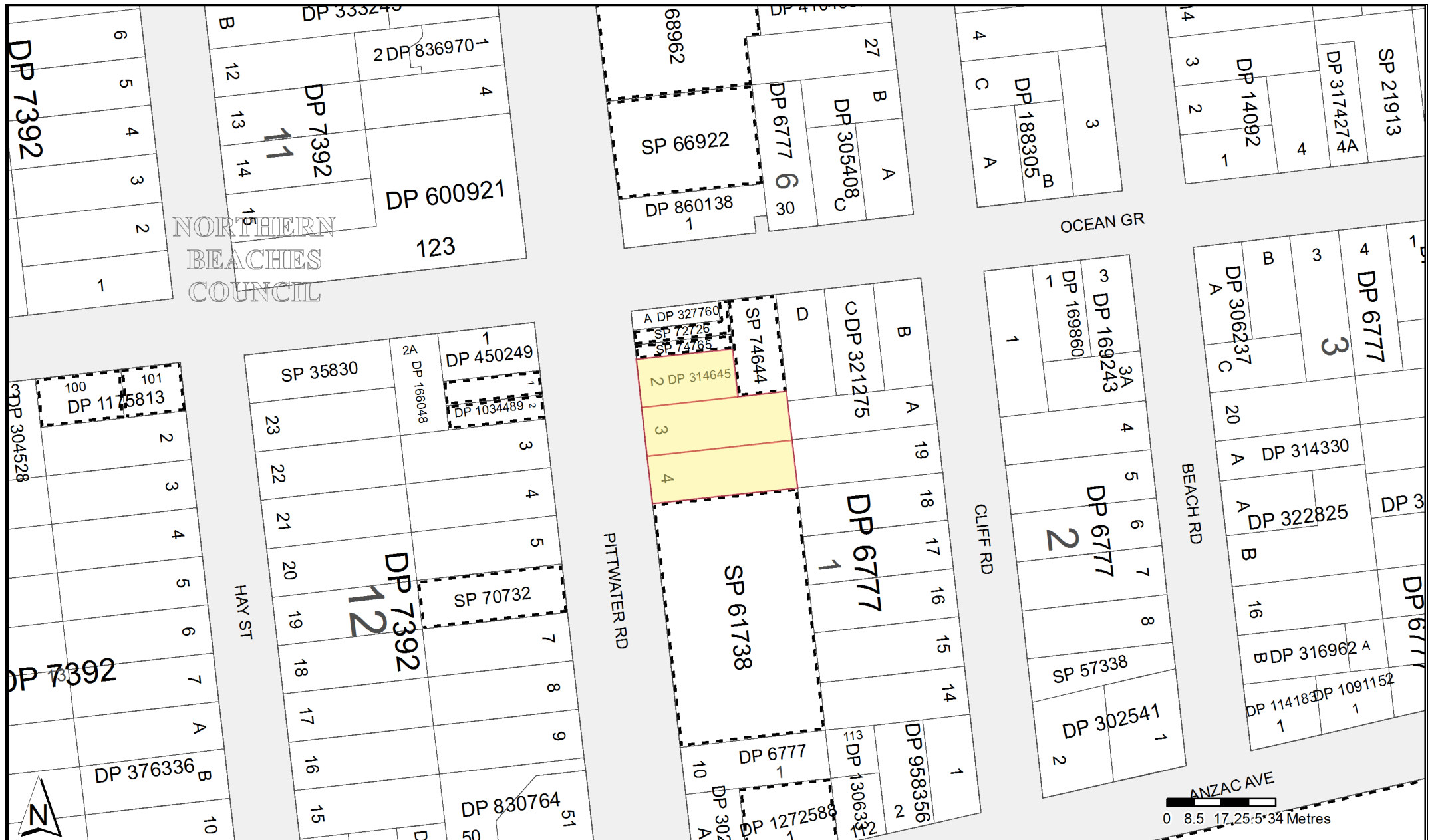


**Locality :** COLLAROY

**Parish :** MANLY COVE

**LGA : NORTHERN BEACHES**

**County :** CUMBERLAND



(Page 1) Vol. 10408 Fol. 197

NEW SOUTH WALES

Appln. No. 14163

Prior Title Vol. 4476 Fol. 209

**CERTIFICATE OF TITLE**  
PROPERTY ACT, 1900, as amended.



10408197

Vol. 10408 Fol. 197

Edition issued 28-9-1966

DM. K410409

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness *S. Vandine*

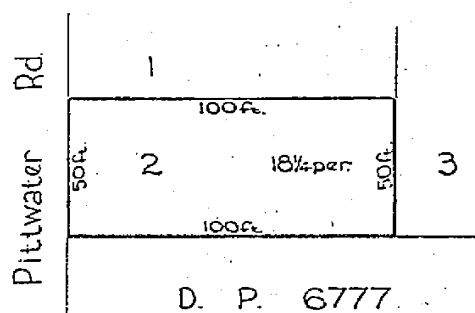
*Jawatson*  
Registrar General.



PLAN SHOWING LOCATION OF LAND

**CANCELLED**

**SEE AUTO FOLIO**



K410409 *SA*

Scale: 50 feet to one inch.

*S*

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in plan lodged with Transfer No. B351709 (Filed as F.P. 314645) in the Shire of Warringah, Parish of Manly Cove and County of Cumberland being part of Portion 1218 granted to William Cossar on 31-8-1819.

*Jawatson*  
Registrar General.

FIRST SCHEDULE (continued overleaf).

*JOHN TULICH of the Why, Builder.*

*Jawatson*  
Registrar General.

SECOND SCHEDULE (continued overleaf).

GRY  
CV

1. Reservations and conditions, if any, contained in the Crown Grant above referred to
2. Covenant created by Transfer No. A632510.
3. ~~Mortgage No. C885275 to the Australasian Temperance and General Mutual Life Assurance Society Limited. Entered 3-2-1958. DISCHARGED 14/11/52~~
4. ~~Lease No. J703068 of the lock-up shop known as No. 1014A Pittwater Road, Collaroy (with consent of Mortgagee) to Mervyn Thomas Henry Bellingham of Elanora Heights, storekeeper and Ivy May Bellingham of Elanora Heights, Married Woman. Entered 13-7-1964. Discharged 28-1-1971~~
5. ~~Lease No. J703069 of lock-up shop known as 1014 Pittwater Road Collaroy, (with consent of Mortgagee) to Joseph Raymond Leslie Moore of Collaroy, Chemist. Entered 13-7-1964. Discharged 28-1-1971~~
6. ~~Mortgage No. J825605 to Beneficial Finance Corporation Limited. Entered 24-11-1964. Discharged K410408~~

*Jawatson*  
Registrar General.

Jonathan

*Handwritten signature*

\_\_\_\_\_

16

10

Shaw

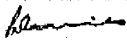

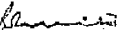




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Blair

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

W 739410  
 R 2

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						
<del>1764939</del>	<del>Lease to Adler Nominees Pty. Limited of premises known as 1014A Pittwater Road, Collaroy</del>	<del>together with option of renewal. Expires 30-4-1985. Registered 24-10-1983</del>	<del></del>	<del></del>	<del></del>	<del>Expired</del>	<del>12-2-1987</del>	<del></del>
<del>1764940</del>	<del>Lease to Adler Nominees Pty. Limited of premises known as 1014 Pittwater Road, Collaroy,</del>	<del>together with option of renewal. Expires 30-4-1985. Registered 24-10-1983</del>	<del></del>	<del></del>	<del></del>	<del>Expired</del>	<del>12-2-1987</del>	<del></del>
L	W739410	Lease to Adler Nominees Pty Limited of premises being Flat 1/1014 Pittwater Road, Collaroy Expires 17-3-1988 with an option of renewal for 3 years Registered 12-2-1987.						
L	W739411	Lease to Adler Nominees Pty Limited of premises being 1014A Pittwater Road, Collaroy Expires 30-4-1988 with an option of renewal for 3 years Registered 12-2-1987.						
L	W739412	Lease to Adler Nominees Pty Limited of premises being 1014B Pittwater Road, Collaroy Expires 30-4-1988 with an option of renewal for 3 years Registered 12-2-1987.						
<div data-bbox="682 901 966 998" data-label="Text"> <p>CANCELLED</p> </div> <div data-bbox="703 1055 913 1128" data-label="Text"> <p>SEE AUTO FOLIO</p> </div>								

**SECOND SCHEDULE (continued)**[illegible]





SEARCH DATE

8/6/2023 1:03PM

FOLIO: 2/314645

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10408 FOL 197

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
4/11/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
27/3/1990	Y909817	LEASE	
27/3/1990	Y909818	LEASE	EDITION 1
3/4/1990		AMENDMENT: CT DELIVEREE	
8/11/1993	I779306	LEASE	EDITION 2
25/8/1997		AMENDMENT: LOCAL GOVT AREA	
15/7/1998	5128522	LEASE	EDITION 3
26/3/2003	9482782	LEASE	EDITION 4
25/2/2004	AA446828	LEASE	EDITION 5
22/2/2006	AC97067	TRANSFER OF LEASE	
21/4/2010	AF444717	LEASE	EDITION 6
13/4/2011	AG176030	LEASE	EDITION 7
7/2/2014	AI313725	LEASE	EDITION 8
24/3/2015	AJ353107	DISCHARGE OF MORTGAGE	
24/3/2015	AJ353108	TRANSFER	
24/3/2015	AJ353110	MORTGAGE	EDITION 9
8/9/2018	AN695391	DEPARTMENTAL DEALING	EDITION 10 CORD ISSUED
18/9/2019	AP514089	LEASE	EDITION 11 CORD ISSUED
21/10/2020	AQ448377	LEASE	EDITION 12

END OF PAGE 1 - CONTINUED OVER

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH  
-----

SEARCH DATE  
-----

8/6/2023 1:03PM

FOLIO: 2/314645  
-----

PAGE 2

Recorded -----	Number -----	Type of Instrument -----
-------------------	-----------------	-----------------------------

C.T. Issue  
-----

CORD ISSUED

\*\*\* END OF SEARCH \*\*\*

1010-1014 Pittwater Road, Collaroy

PRINTED ON 8/6/2023



FOLIO: 2/314645

SEARCH DATE	TIME	EDITION NO	DATE
8/6/2023	1:01 PM	12	21/10/2020

LAND

LOT 2 IN DEPOSITED PLAN 314645

LOCAL GOVERNMENT AREA NORTHERN BEACHES

PARISH OF MANLY COVE COUNTY OF CUMBERLAND

TITLE DIAGRAM DP314645

FIRST SCHEDULE

COLLAROY PROJECTS PTY LTD

(T AJ353108)

SECOND SCHEDULE (5 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A632510 COVENANT
- 3 AJ353110 MORTGAGE TO WESTPAC BANKING CORPORATION
- 4 AP514089 LEASE TO SCANDI DESIGN STUDIO PTY LTD OF 1014A  
PITTWATER ROAD, COLLAROY. EXPIRES: 25/9/2022. OPTION  
OF RENEWAL: 3 YEARS.
- 5 AQ448377 LEASE TO HAMPTON KITCHENS & INTERIORS PTY LTD OF  
1014B PITTWATER ROAD, COLLAROY. EXPIRES: 31/8/2023.  
OPTION OF RENEWAL: 3 YEARS.

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

# CERTIFICATE OF TITLE

NEW SOUTH WALES

PROPERTY ACT, 1900



15540109

First Title Old System

Prior Title Vol. 7279 Fol. 218



Vol. 15540 Fol. 109

EDITION ISSUED

21 2 1989

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

SEE AUTO FILED

Registrar General.



S

## LAND REFERRED TO

Lot 3 of Section 1 in DP6777 at Collaroy in the Shire of Warringah Parish of Manly Cove County of Cumberland.

Title Diagram: DP6777

## FIRST SCHEDULE

MARIA LUCIA TULICH and KATHERINE VICKI TULICH, as Tenants in Common in Equal Shares. S148501

GRT

## SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. V380080<sup>P</sup> Lease to Jill Falinski of premises being 1012 Pittwater Road, Collaroy. Expires 30-6-1986. Option of renewal 3 years.
3. X172927<sup>P</sup> Lease to Peter Ford of premises being 1012A Pittwater Road Collaroy. Expires 31-5-1990. Option of renewal 3 years.
4. Y4595<sup>P</sup> Lease to Bramyl Pty Limited of part premises being shop 1012C Pittwater Road, Collaroy. Expires 31-12-1989. Option of renewal 3 years.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

(Page 1) Vol.

15540 109



FIRST SCHEDULE (continued)  
REGISTERED PROPRIETOR

Registrar General

**CANCELLED**  
**SEE AUTO FOLIO**

SECOND SCHEDULE (continued)  
PARTICULARS

Registrar General CANCELLATION

NOTATIONS AND UNREGISTERED DEALINGS

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Reg:R693095 /Doc:CT 15540-109 CT /Rev:23-Dec-2010 /NSW LRS /Pgs:ALT /Prt:08-Jun-2023 13:04 /Seq:2 of 2  
© Office of the Registrar-General /Src:InfoTrack /Ref:1010-1014 Pittwater Road Collaroy



SEARCH DATE

8/6/2023 1:03PM

FOLIO: 3/1/6777

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 15540 FOL 109

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
9/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
5/10/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
18/10/1990	Z186952	LEASE	EDITION 1
2/8/1991	Z743888	LEASE	EDITION 2
30/4/1993	I294891	SURRENDER OF LEASE	
30/4/1993	I294892	LEASE	EDITION 3
17/12/1993	I885348	MORTGAGE	EDITION 4
23/8/1996	2405416	LEASE	EDITION 5
25/3/1997	2930025	LEASE	EDITION 6
27/8/1997		AMENDMENT: LOCAL GOVT AREA	
12/6/1998	5050128	DISCHARGE OF MORTGAGE	EDITION 7
21/1/1999	5539998	LEASE	
21/1/1999	5539999	LEASE	EDITION 8
5/11/2001	8082136	LEASE	
5/11/2001	8082137	LEASE	EDITION 9
2/4/2002	8469755	TRANSFER OF LEASE	EDITION 10
2/5/2003	9572582	LEASE	EDITION 11
11/11/2004	AB88442	LEASE	EDITION 12
23/11/2009	AF134582	LEASE	EDITION 13
10/6/2011	AG57574	LEASE	EDITION 14
28/9/2011	AG57573	WITHDRAWN - LEASE	

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE

8/6/2023 1:03PM

FOLIO: 3/1/6777

PAGE 2

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
9/1/2012	AG496451	REJECTED - REQUEST	
19/4/2012	AG809702	REQUEST	EDITION 15
21/8/2013	AH858217	LEASE	EDITION 16
24/3/2015	AJ353109	TRANSFER	
24/3/2015	AJ353110	MORTGAGE	EDITION 17
8/9/2018	AN695391	DEPARTMENTAL DEALING	EDITION 18 CORD ISSUED
12/6/2019	AP313047	LEASE	EDITION 19 CORD ISSUED
18/9/2019	AP514089	LEASE	EDITION 20 CORD ISSUED
14/9/2021	AR425667	LEASE	EDITION 21 CORD ISSUED

\*\*\* END OF SEARCH \*\*\*



FOLIO: 3/1/6777

SEARCH DATE	TIME	EDITION NO	DATE
8/6/2023	1:01 PM	21	14/9/2021

LAND

LOT 3 OF SECTION 1 IN DEPOSITED PLAN 6777

AT COLLAROY

LOCAL GOVERNMENT AREA NORTHERN BEACHES

PARISH OF MANLY COVE COUNTY OF CUMBERLAND

TITLE DIAGRAM DP6777

FIRST SCHEDULE

COLLARROY PROJECTS PTY LTD

(T AJ353109)

SECOND SCHEDULE (4 NOTIFICATIONS)

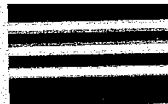
- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 AJ353110 MORTGAGE TO WESTPAC BANKING CORPORATION
- 3 AP514089 LEASE TO SCANDI DESIGN STUDIO PTY LTD OF SHOPS,  
1012C PITTWATER ROAD, COLLAROY. EXPIRES: 25/9/2022.  
OPTION OF RENEWAL: 3 YEARS.
- 4 AR425667 LEASE TO FULLY CHILLED PTY LTD OF SHOPS 1012A &  
1012B PITTWATER ROAD, COLLAROY NSW 2097. EXPIRES:  
30/11/2022. OPTION OF RENEWAL: 4 YEARS.

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*





# CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900



13928020

NEW SOUTH WALES

Vol. **13928** Fol. **20**

Appln No 14163

Prior Title Vol. 3409 Fol. 6



EDITION ISSUED

26 9 1979

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule

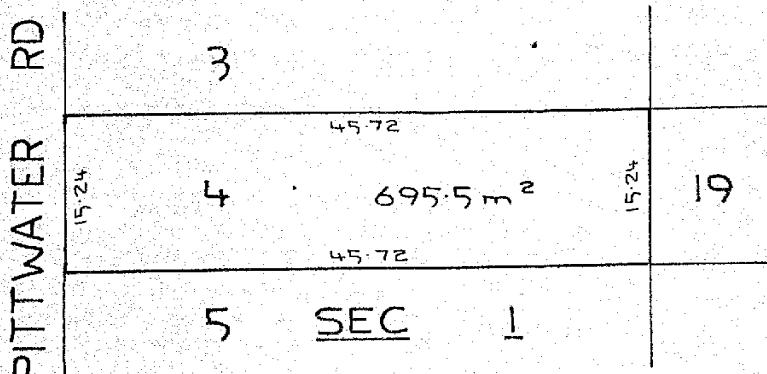
**CANCELLED**

Registrar General.  
SEE AUTO FOLIO



## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



R 278099 *g/s*  
*GRY*

## REDUCTION RATIO 1:500

### ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 4 of Section 1 in Deposited Plan 6777 in the Shire of Warringah Parish of Manly Cove County of Cumberland being part of Portion 1218 granted to William Cossar on 31-8-1819.

### FIRST SCHEDULE

~~JACK MUSGROVE of Dee Why, Landware Shop Proprietor.~~

### SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown grant above referred to.
2. A893607 Covenant.
3. ~~880870 Lease to Surf Dive 'n' Ski (Sydney) Pty. Limited of premises known as lock-up shop 1040a Pittwater Road Collaroy. Expires 26-3-1981. Expired 7-12-1982.~~
4. ~~R278099 Lease to Donald George Wormald of Collaroy, Storekeeper of premises known as lock-up shop 1040 Pittwater Road, Collaroy (together with option of renewal). Expires 21-3-1981. Expired 7-12-1982.~~

## SECOND SCHEDULE (continued)

[illegible]

**NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED**



SEARCH DATE

8/6/2023 1:03PM

FOLIO: 4/1/6777

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 13928 FOL 20

Recorded	Number	Type of Instrument	C.T. Issue
9/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
19/9/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
28/6/1991	Z616114	SURRENDER OF LEASE	
28/6/1991	Z616115	SURRENDER OF LEASE	
28/6/1991	Z616116	LEASE	EDITION 1
3/9/1993	I622187	LEASE	EDITION 2
12/2/1997	2831735	LEASE	EDITION 3
27/8/1997		AMENDMENT: LOCAL GOVT AREA	
1/7/1999	5949903	SURRENDER OF LEASE	
1/7/1999	5949904	LEASE	EDITION 4
27/2/2004	AA454795	LEASE	EDITION 5
31/8/2007	AD383697	SURRENDER OF LEASE	
31/8/2007	AD383698	LEASE	EDITION 6
8/7/2013	AH862129	LEASE	EDITION 7
9/8/2013	AH909345	TRANSFER OF LEASE	
9/8/2013	AH909346	VARIATION OF LEASE	EDITION 8
27/3/2017	AM263268	LEASE	
27/3/2017	AM263269	LEASE	EDITION 9
29/5/2020	AP976193	VARIATION OF LEASE	
29/5/2020	AP998003	REQUEST	
29/5/2020	AP998004	LEASE	EDITION 10
27/5/2021	AR86308	TRANSFER	
27/5/2021	AR86309	MORTGAGE	EDITION 11 CORD ISSUED

\*\*\* END OF SEARCH \*\*\*

1010-1014 Pittwater Road, Collaroy

PRINTED ON 8/6/2023



FOLIO: 4/1/6777

SEARCH DATE	TIME	EDITION NO	DATE
8/6/2023	1:01 PM	11	27/5/2021

LAND

LOT 4 OF SECTION 1 IN DEPOSITED PLAN 6777

LOCAL GOVERNMENT AREA NORTHERN BEACHES  
PARISH OF MANLY COVE COUNTY OF CUMBERLAND  
TITLE DIAGRAM DP6777

FIRST SCHEDULE

COLLAROY PROJECTS PTY LTD

(T AR86308)

SECOND SCHEDULE (5 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 A893607 COVENANT
- 3 AM263269 LEASE TO DULUXGROUP (AUSTRALIA) PTY LTD OF SHOP 1,  
1010 PITTWATER ROAD, COLLAROY. EXPIRES: 30/9/2019.  
OPTION OF RENEWAL: 3 YEARS.  
AP976193 VARIATION OF LEASE AM263269 EXPIRY DATE NOW  
30/9/2022. OPTION OF RENEWAL: PRESERVED.
- 4 AP998004 LEASE TO IMPERFECT NUTRITIONIST PTY LTD OF SHOP 2,  
1010 PITTWATER ROAD, COLLAROY. EXPIRES: 22/3/2023.  
OPTION OF RENEWAL: 3 YEARS.
- 5 AR86309 MORTGAGE TO WESTPAC BANKING CORPORATION

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*



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## Appendix E – Groundwater Bore Search Records

---

# WaterNSW

## Work Summary

GW109682

Licence: 10CA107757

Licence Status: CURRENT

**Authorised Purpose(s):** IRRIGATION,RECREATION  
(GROUNDWATER),RECREATION - LOW SECURITY

**Intended Purpose(s):** IRRIGATION, RECREATION - LOW

**Work Type:** Bore

**Work Status:**

**Construct.Method:** Down Hole Hamm

**Owner Type:** Private

**Commenced Date:**

**Completion Date:** 17/12/2007

**Final Depth:** 85.00 m

**Drilled Depth:** 85.00 m

**Contractor Name:** HIGHLAND DRILLING PTY LTD

**Driller:** Brett Delamont

**Assistant Driller:**

**Property:** LONG REEF GOLF CLUB  
LTD Anzac Ave COLLAROY  
2097 NSW

**GWMA:** 603 - SYDNEY BASIN

**GW Zone:** 999 - (blank)

**Standing Water Level (m):** 5.000

**Salinity Description:**  
**Yield (L/s):** 3.000

## Site Details

**Site Chosen By:**

Form A:	County	Parish	Cadastre
Licensed: CUMBERLAND	CUMBERLAND	NARRABEEN MANLY COVE	1 64163 Whole Lot 1//1144187

**Region:** 10 - Sydney South Coast

**CMA Map:**

**River Basin:** - Unknown

**Grid Zone:**

**Scale:**

**Area/District:**

**Elevation:** 0.00 m (A.H.D.)

**Northing:** 6265430.000

**Latitude:** 33°44'22.4"S

**Elevation Source:** Unknown

**Easting:** 342978.000

**Longitude:** 151°18'17.7"E

**GS Map:** -

**MGA Zone:** 56

**Coordinate Source:** Unknown

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	30.00	254			Down Hole Hammer

1		Hole	Hole	30.00	85.00	200			Down Hole Hammer
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	85.00	160			Seated on Bottom, Screwed and Glued
1	1	Casing	Steel	0.00	30.00	219			Driven into Hole, Welded
1	1	Opening	Slots - Diagonal	36.00	60.00	160		0	PVC Class 9, SL: 24.0mm, A: 2.00mm
1	1	Opening	Slots - Diagonal	72.00	78.00			0	SL: 6.0mm, A: 2.00mm

## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
47.00	48.00	1.00	Unknown	5.00		1.00			
53.00	54.00	1.00	Unknown			3.00			

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	26.00	26.00	CLAY	Clay	
26.00	30.00	4.00	SHALE	Shale	
30.00	36.00	6.00	CLAY WHITE	Clay Loam	
36.00	72.00	36.00	CLAYSSTONE RED	Claystone	
72.00	85.00	13.00	SHALE, GREY/GREEN	Shale	

## Remarks

17/12/2007: Form A Remarks:  
Gravel Pack: Quantity: 2 tonne.  
Pump test recommended.  
06/04/2009: Previous Lic No:10BL602267

\*\*\* End of GW109682 \*\*\*

**Warning To Clients:** This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

# WaterNSW

## Work Summary

GW111073

Licence:	Licence Status:
	Authorised Purpose(s): Intended Purpose(s): MONITORING BORE
Work Type: Bore	
Work Status: Equipped	
Construct.Method: Auger	
Owner Type: Private	
Commenced Date:	Final Depth: 10.50 m
Completion Date: 09/06/2010	Drilled Depth: 10.50 m
Contractor Name: Macquarie Drilling	
Driller: Douglas Stephen Miller	
Assistant Driller:	
Property:	Standing Water Level 8.700 (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

### Site Details

Site Chosen By:	County Form A: CUMBERLAND Licensed:	Parish MANLY COV	Cadastre 202/1100018
Region: 10 - Sydney South Coast	CMA Map:		
River Basin: - Unknown	Grid Zone:	Scale:	
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6265956.000	Latitude: 33°44'05.3"S	
Elevation Unknown	Easting: 342866.000	Longitude: 151°18'13.7"E	
Source:			
GS Map: -	MGA Zone: 56	Coordinate Unknown	Source:

### Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	10.50	120			Auger
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	6.00	65			Seated on Bottom, Screwed
1	1	Opening	Screen	6.00	10.50	65		0	PVC, Screwed, A: 0.40mm



## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
8.90	10.50	1.60	Unknown	8.70					

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	FILL, TOPSOIL, SILTY SAND	Fill	
0.30	2.10	1.80	SILTY CLAY, MEDIUM PLASTICITY, PALE BROWN	Silty Clay	
2.10	3.00	0.90	SILTY CLAY M/PLASTICITY, RED TO GREY	Silty Clay	
3.00	4.30	1.30	SILTY CLAY GREY TO BROWN WITH SOME PURPLE	Silty Clay	
4.30	5.60	1.30	SILTY CLAY M/PLASTICITY, GREY TO RED BROWN	Silty Clay	
5.60	7.30	1.70	SILTY CLAY, M/PLASTICITY, MINOR YELLOW TO ORANGE	Silty Clay	
7.30	10.50	3.20	SILTY CLAY, M/PLASTICITY, GREY, SATURATED	Silty Clay	

\*\*\* End of GW111073 \*\*\*

**Warning To Clients:** This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

# WaterNSW

## Work Summary

GW111072

Licence:	Licence Status:
	Authorised Purpose(s): Intended Purpose(s): MONITORING BORE
Work Type: Bore	
Work Status: Equipped	
Construct.Method: Auger	
Owner Type: Private	
Commenced Date:	Final Depth: 10.50 m
Completion Date: 09/06/2010	Drilled Depth: 10.50 m
Contractor Name: Macquarie Drilling	
Driller: Douglas Stephen Miller	
Assistant Driller:	
Property:	Standing Water Level 8.400 (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

### Site Details

Site Chosen By:			
	County Form A: CUMBERLAND Licensed:	Parish MANLY COV	Cadastre 202/1100018
Region: 10 - Sydney South Coast	CMA Map:		
River Basin: - Unknown	Grid Zone:	Scale:	
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6265961.000	Latitude: 33°44'05.1"S	
Elevation Unknown	Easting: 342860.000	Longitude: 151°18'13.5"E	
Source:			
GS Map: -	MGA Zone: 56	Coordinate Unknown	Source:

### Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	10.50	120			Auger
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	6.00	65			Seated on Bottom, Screwed
1	1	Opening	Screen	6.00	10.50	65		0	PVC Class 18, Screwed, A: 0.40mm

## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
8.60	10.50	1.90	Unknown	8.40					

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	FILL, TOPSOIL, SILTY SAND, FINE GRAINED	Fill	
0.20	1.80	1.60	SILTY CLAY, M/PLASTICITY, PALE BROWN TO GREY	Silty Clay	
1.80	3.00	1.20	SILTY CLAY M/PLASTICITY, RED TO GREY	Silty Clay	
3.00	3.90	0.90	SILTY CLAY GREY TO BROWN, SOME PURPLE	Silty Clay	
3.90	5.70	1.80	SILTY CLAY M/PLASTICITY GREY TO RED BROWN	Silty Clay	
5.70	6.30	0.60	SILTY CLAY M/PLASTICITY YELLOW TO ORANGE	Silty Clay	
6.30	10.50	4.20	SILTY CLAY, M/PLASTICITY, GREY	Silty Clay	

\*\*\* End of GW111072 \*\*\*

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# WaterNSW

## Work Summary

GW111070

<b>Licence:</b>	<b>Licence Status:</b>
	<b>Authorised Purpose(s):</b>
	<b>Intended Purpose(s):</b> MONITORING BORE
<b>Work Type:</b> Bore	
<b>Work Status:</b> Equipped	
<b>Construct.Method:</b> Auger	
<b>Owner Type:</b> Private	
<b>Commenced Date:</b>	<b>Final Depth:</b> 10.50 m
<b>Completion Date:</b> 09/06/2010	<b>Drilled Depth:</b> 10.50 m
<b>Contractor Name:</b> Macquarie Drilling	
<b>Driller:</b> Douglas Stephen Miller	
<b>Assistant Driller:</b>	
<b>Property:</b>	<b>Standing Water Level</b> 5.200 (m):
<b>GWMA:</b>	<b>Salinity Description:</b>
<b>GW Zone:</b>	<b>Yield (L/s):</b>

## Site Details

Site Chosen By:			
		County	Parish
		Form A: CUMBERLAND	MANLY COV
		Licensed:	Cadastre 202/1100018
Region: 10 - Sydney South Coast		CMA Map:	
River Basin: - Unknown		Grid Zone:	
Area/District:		Scale:	
Elevation: 0.00 m (A.H.D.)		Northing: 6265959.000	Latitude: 33°44'05.2"S
Elevation Unknown		Easting: 342874.000	Longitude: 151°18'14.0"E
Source:			
GS Map: -		MGA Zone: 56	Coordinate Unknown
		Source:	

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	10.50	120			Auger
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	Pvc Class 18	0.00	7.50	65			Seated on Bottom, Screwed
1	1	Opening	Screen	7.50	10.50	65		0	PVC Class 18, Screwed, A: 0.40mm

## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
8.60	10.50	1.90	Unknown	5.20					

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	FILL, TOPSOIL SILTY SAND	Fill	
0.20	2.00	1.80	SILTY CLAY MEDIUM PLASTICITY	Silty Clay	
2.00	2.60	0.60	SILTY CLAY, M/PLASTICITY, RED/PALE BROWN	Silty Clay	
2.60	4.00	1.40	SILTY CLAY GREY TO PURPLE	Silty Clay	
4.00	5.80	1.80	SILTY CLAY, GREY TO RED BROWN	Silty Clay	
5.80	7.00	1.20	SILTY CLAY LOW TO MED. PLASTICITY	Silty Clay	
7.00	10.50	3.50	SILTY CLAY, M/PLASTICITY, GREY	Silty Clay	

\*\*\* End of GW111070 \*\*\*

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# WaterNSW

## Work Summary

GW111071

Licence:	Licence Status:
	Authorised Purpose(s): Intended Purpose(s): MONITORING BORE
Work Type: Bore	
Work Status: Equipped	
Construct.Method: Auger	
Owner Type: Private	
Commenced Date:	Final Depth: 10.50 m
Completion Date: 09/06/2010	Drilled Depth: 10.50 m
Contractor Name: Macquarie Drilling	
Driller: Douglas Stephen Miller	
Assistant Driller:	
Property:	Standing Water Level 5.000 (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

## Site Details

Site Chosen By:	County Form A: CUMBERLAND Licensed:	Parish MANLY COV	Cadastre 202/1100018
Region: 10 - Sydney South Coast	CMA Map:		
River Basin: - Unknown	Grid Zone:	Scale:	
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6265966.000	Latitude: 33°44'05.0"S	
Elevation Unknown	Easting: 342869.000	Longitude: 151°18'13.8"E	
Source:			
GS Map: -	MGA Zone: 56	Coordinate Unknown	Source:

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	10.50	120			Auger
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	P.V.C.	0.00	7.50	65			Seated on Bottom.



									Screwed
1	1	Opening	Screen	7.50	10.50	65		0	PVC Class 18, Screwed, A: 0.40mm

## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
8.40	10.50	2.10	Unknown	5.00					

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.20	0.20	FILL, TOPSOIL, SILTY SAND	Fill	
0.20	2.00	1.80	SILTY CLAY M/PLASTICITY PALE BROWN TO GREY	Silty Clay	
2.00	3.20	1.20	SILTY CLAY M/PLASTICITY RED/ BROWN	Silty Clay	
3.20	4.10	0.90	SILTY CLAY GREY TO PURPLE	Silty Clay	
4.10	5.80	1.70	SILTY CLAY,M/PLASTICITY GREY TO RED BROWN	Silty Clay	
5.80	7.30	1.50	SILTY CLAY LOW TO MED,PLASTICITY	Silty Clay	
7.30	10.40	3.10	SILTY CLAY,M/PLASTICITY,GREY	Silty Clay	
10.40	10.50	0.10	SANDSTONE,FINE GRAINED,GREY	Sandstone	

\*\*\* End of GW111071 \*\*\*

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# WaterNSW

## Work Summary

GW106547

Licence: 10CA107757

Licence Status: CURRENT

Authorised IRRIGATION,RECREATION  
Purpose(s): (GROUNDWATER),RECREATION - LOW  
SECURITY

Intended RECREATION (GROU, IRRIGATION  
Purpose(s):

Work Type: Bore

Work Status:

Construct.Method: Rotary

Owner Type:

Commenced Date:

Completion Date: 01/05/2005

Final Depth: 102.00 m

Drilled Depth: 102.00 m

Contractor Name: HIGHLAND DRILLING PTY  
LTD

Driller: Brett Delamont

Assistant Driller:

Property: LONG REEF GOLF CLUB  
LTD Anzac Ave COLLAROY  
2097 NSW

GWMA: -

GW Zone: -

Standing Water 2.000  
Level (m):

Salinity  
Description:  
Yield (L/s): 1.000

## Site Details

Site Chosen  
By:

County	Parish	Cadastre
Form A: CUMBERLAND	NARRABEEN	1 64163
Licensed: CUMBERLAND	MANLY COVE	Whole Lot 1//1144187

Region: 10 - Sydney South Coast

CMA Map: 9130-1S

River Basin: 213 - SYDNEY COAST -  
GEORGES RIVER

Grid Zone:

Scale:

Area/District:

Elevation: 0.00 m (A.H.D.)

Northing: 6265304.000

Latitude: 33°44'26.5"S

Elevation (Unknown)

Easting: 343042.000

Longitude: 151°18'20.1"E

Source:

GS Map: -

MGA Zone: 56

Coordinate Unknown  
Source:

## Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
------	------	-----------	------	-------------	-----------	-----------------------------	----------------------------	----------	---------

1		Hole	Hole	0.00	20.00	250			Down Hole Hammer
1		Hole	Hole	20.00	102.00	200			Down Hole Hammer
1		Annulus	Waterworn/Rounded	0.00	0.00				Graded
1	1	Casing	Pvc Class 9	0.00	102.00	160			Seated on Bottom, Screwed and Glued
1	1	Casing	Steel	0.00	20.00	219			Driven into Hole, Welded
1	1	Opening	Slots - Diagonal	30.00	42.00	160		0	Sawn, PVC Class 9, SL: 12.0mm, A: 2.00mm
1	1	Opening	Slots - Diagonal	48.00	54.00			0	Sawn, SL: 6.0mm, A: 2.00mm
1	1	Opening	Slots - Diagonal	60.00	66.00			0	Sawn, SL: 6.0mm, A: 2.00mm
1	1	Opening	Slots - Diagonal	78.00	84.00			0	Sawn, PVC Class 9, SL: 6.0mm, A: 2.00mm
1	1	Opening	Slots - Diagonal	90.00	96.00			0	Sawn, SL: 6.0mm, A: 2.00mm

## Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
29.00	30.00	1.00	Unknown	2.00		2.50	31.00		460.00
50.00	51.00	1.00	Unknown			1.50	52.00		480.00
65.00	66.00	1.00	Unknown			1.00	67.00		490.00

## Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	4.00	4.00	SANDY CLAY, GREY	Invalid Code	
4.00	6.00	2.00	SANDY LOAM, WHITE, ORANGE, MOTTLED	Invalid Code	
6.00	18.00	12.00	CLAYEY SAND, ORANGE, RED	Invalid Code	
18.00	21.00	3.00	SANDY LOAM, GREY ORANGE, CLAYEY	Invalid Code	
21.00	47.50	26.50	SHALE, INTERBEDDED GREY TO RED BROWN	Shale	
47.50	51.00	3.50	SHALE, GREY AND SANDSTONE	Shale	
51.00	69.00	18.00	SHALE, INTERBEDDED GREY TO RED BROWN	Shale	
69.00	72.00	3.00	SHALE RED AND SANDSTONE	Shale	
72.00	76.50	4.50	SANDSTONE, QUARTZ, LITHIC, GREY	Sandstone	
76.50	78.00	1.50	SHALE, INTERBEDDED RED BROWN, FISSILE	Shale	
78.00	102.00	24.00	SHALE, GREY, FISSILE, FRIABLE	Shale	

## Remarks

01/05/2005: Form A Remarks:  
Pump test recommended.  
14/11/2005: Previous Lic No: 10BL164944

\*\*\* End of GW106547 \*\*\*

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