

**GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1 – To be submitted with Development Application**

Development Application for _____
Name of Applicant

Address of site 23-25 Bassett Street, Mona Vale

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Declaration made by geotechnical engineer or engineering geologist or coastal engineer (where applicable) as part of a geotechnical report

I, Ben White on behalf of White Geotechnical Group Pty Ltd
(Insert Name) (Trading or Company Name)

on this the 21/7/20 certify that I am a geotechnical engineer or engineering geologist or coastal engineer as defined by the Geotechnical Risk Management Policy for Pittwater - 2009 and I am authorised by the above organisation/company to issue this document and to certify that the organisation/company has a current professional indemnity policy of at least \$10million.

I:

Please mark appropriate box

- have prepared the detailed Geotechnical Report referenced below in accordance with the Australia Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- am willing to technically verify that the detailed Geotechnical Report referenced below has been prepared in accordance with the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007) and the Geotechnical Risk Management Policy for Pittwater - 2009
- have examined the site and the proposed development in detail and have carried out a risk assessment in accordance with Section 6.0 of the Geotechnical Risk Management Policy for Pittwater - 2009. I confirm that the results of the risk assessment for the proposed development are in compliance with the Geotechnical Risk Management Policy for Pittwater - 2009 and further detailed geotechnical reporting is not required for the subject site.
- have examined the site and the proposed development/alteration in detail and I am of the opinion that the Development Application only involves Minor Development/Alteration that does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements.
- have examined the site and the proposed development/alteration is separate from and is not affected by a Geotechnical Hazard and does not require a Geotechnical Report or Risk Assessment and hence my Report is in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009 requirements.
- have provided the coastal process and coastal forces analysis for inclusion in the Geotechnical Report


Geotechnical Report Details:

Report Title: Geotechnical Report <u>23-25 Bassett Street, Mona Vale</u>
Report Date: <u>20/7/20</u>
Author: <u>BEN WHITE</u>
Author's Company/Organisation: <u>WHITE GEOTECHNICAL GROUP PTY LTD</u>

Documentation which relate to or are relied upon in report preparation:

<u>Australian Geomechanics Society Landslide Risk Management March 2007.</u>
<u>White Geotechnical Group company archives.</u>

I am aware that the above Geotechnical Report, prepared for the abovementioned site is to be submitted in support of a Development Application for this site and will be relied on by Pittwater Council as the basis for ensuring that the Geotechnical Risk Management aspects of the proposed development have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.

Signature 
Name Ben White
Chartered Professional Status MScGEOLAusIMM CP GEOL
Membership No. 222757
Company White Geotechnical Group Pty Ltd

GEOTECHNICAL RISK MANAGEMENT POLICY FOR PITTWATER
FORM NO. 1(a) - Checklist of Requirements for Geotechnical Risk Management Report for
Development Application

Development Application for _____	Name of Applicant
Address of site <u>23-25 Bassett Street, Mona Vale</u>	

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Management Geotechnical Report. This checklist is to accompany the Geotechnical Report and its certification (Form No. 1).


Geotechnical Report Details:

Report Title: Geotechnical Report <u>23-25 Bassett Street, Mona Vale</u>
Report Date: <u>20/7/20</u>
Author: <u>BEN WHITE</u>
Author's Company/Organisation: <u>WHITE GEOTECHNICAL GROUP PTY LTD</u>

Please mark appropriate box

- Comprehensive site mapping conducted 27/12/19
(date)
- Mapping details presented on contoured site plan with geomorphic mapping to a minimum scale of 1:200 (as appropriate)
- Subsurface investigation required
 - No Justification _____
 - Yes Date conducted 27/12/19
- Geotechnical model developed and reported as an inferred subsurface type-section
- Geotechnical hazards identified
 - Above the site
 - On the site
 - Below the site
 - Beside the site
- Geotechnical hazards described and reported
- Risk assessment conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
 - Consequence analysis
 - Frequency analysis
- Risk calculation
- Risk assessment for property conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- Risk assessment for loss of life conducted in accordance with the Geotechnical Risk Management Policy for Pittwater - 2009
- Assessed risks have been compared to "Acceptable Risk Management" criteria as defined in the Geotechnical Risk Management Policy for Pittwater - 2009
- Opinion has been provided that the design can achieve the "Acceptable Risk Management" criteria provided that the specified conditions are achieved.
- Design Life Adopted:
 - 100 years
 - Other _____
specify
- Geotechnical Conditions to be applied to all four phases as described in the Geotechnical Risk Management Policy for Pittwater - 2009 have been specified
- Additional action to remove risk where reasonable and practical have been identified and included in the report.
- Risk assessment within Bushfire Asset Protection Zone.

I am aware that Pittwater Council will rely on the Geotechnical Report, to which this checklist applies, as the basis for ensuring that the geotechnical risk management aspects of the proposal have been adequately addressed to achieve an "Acceptable Risk Management" level for the life of the structure, taken as at least 100 years unless otherwise stated, and justified in the Report and that reasonable and practical measures have been identified to remove foreseeable risk.


Signature _____
Name Ben White
Chartered Professional Status MScGEOLAusIMM CP GEOL
Membership No. 222757
Company White Geotechnical Group Pty Ltd

GEOTECHNICAL INVESTIGATION:

Proposed Aged Care Centre at 23-25 Bassett Street, Mona Vale

1. Proposed Development

- 1.1** Demolish the existing two houses and aged care centre and construct a new aged care centre with basement parking by excavating to a maximum depth of ~2.0m into the slope.
- 1.2** Details of the proposed development are shown on 3 drawings prepared by Gartner Trovato Architects, Project number 1816, drawings numbered A-03, 04, and 08, Revision B, dated 17/7/20.

2. Site Description

- 2.1** The site was inspected on the 27th December, 2019 and on the 14th July, 2020.
- 2.2** These residential properties are on the S side of the road. They are positioned on the near-level terrain at the base of a hillslope that rises to the N.
- 2.3** **23 Bassett Street** - At the road frontage, a concrete and gravel driveway runs to a parking area on the W side of the house (Photo 1). Between the road frontage and the house is a near-level lawn (Photo 2). Another near-level lawn extends off the S side of the house, past two garages, to the S common boundary (Photos 3, 4, and 5). The house and both garages will be demolished and the site will be cleared as part of the proposed works.
- 2.5** **25 Bassett Street (Residential)** – At the road frontage, a concrete driveway runs to a garage attached to the W side of the house (Photo 6). Between the road frontage and the house is a near-level lawn and garden area (Photo 7). Another near-level lawn extends off the S side of the house to the S common boundary (Photo 8).

The house will be demolished and the site will be cleared as part of the proposed works.

2.6 25 Bassett Street (Aged Care Centre) – At the E end of the road frontage, a concrete and brick driveway runs along the N side of the building to a drop-off and pick-up area before running back to the road frontage (Photos 9 & 10). Between the road frontage and the driveway is a gently sloping lawn and garden area. The E end of the driveway also diverts down the E side of the building to a large concrete parking area on the S side of the property (Photo 11). The parking area is cut into the slope. The cut is supported by a concrete block retaining wall. A portion of the parking area has a suspended tennis court over. The driveway runs back along the W side of the building to the road frontage (Photo 12). The building and tennis court will be demolished and the site will be cleared as part of the proposed works.

3. Geology

The Sydney 1:100 000 Geological sheet indicates the site is underlain by the Narrabeen Group of Rocks with the contact point of Alluvial Stream and Estuarine Sediment (Qha) in close proximity to the S of the property. Ground testing indicates the Alluvial Stream and Estuarine Sediment underlies the proposed works. These are described as silty to peaty quartz sand, silt and clay with ferruginous and humic cementation in places and common shell layers.

4. Subsurface Investigation

Two auger holes were put down to identify the soil materials. Six Dynamic Cone Penetrometer (DCP) tests were put down to determine the relative density of the overlying soil and the depth to weathered rock. The locations of the tests are shown on the site plan. It should be noted that a level of caution should be applied when interpreting DCP test results. The test will not pass through hard buried objects so in some instances it can be difficult to determine whether refusal has occurred on an obstruction in the profile or on the natural rock surface. This is expected to have occurred in DCPs 4 & 6. Excavation and foundation budgets should

always allow for the possibility that the interpreted ground conditions in this report vary from those encountered during excavations. See the appended "Important information about your report" for a more comprehensive explanation. The results are as follows:

AUGER HOLE 1 (~RL4.1) – AH1 (Photo 7)

Depth (m)	Material Encountered
0.0 to 1.3	FILL , disturbed clayey soil, white, brown, and dark brown, very soft to stiff, dry, fine to coarse grained with fine trace organic matter, trace shale, and rock fragments.
1.3 to 1.6	SANDY SOIL , dark brown, medium dense to dense, dry, fine to medium grained with fine trace organic matter.
1.6 to 2.0	SAND , yellow and brown, dense, dry, coarse grained.

End of hole @ 2.0m in dense sand. No watertable encountered.

AUGER HOLE 2 (~RL3.9) – AH2 (Photo 8)

Depth (m)	Material Encountered
0.0 to 1.0	FILL , disturbed sand, brown, dense, dry, coarse grained with fine trace organic matter and rock fragments.

End of hole @ 1.0m in sand fill. No watertable encountered.

DCP TESTING ON NEXT PAGE

DCP TEST RESULTS – Dynamic Cone Penetrometer						
Equipment: 9kg hammer, 510mm drop, conical tip.				Standard: AS1289.6.3.2 - 1997		
Depth(m) Blows/0.3m	DCP 1 (~RL4.0)	DCP 2 (~RL4.1)	DCP 3 (~RL3.9)	DCP 4 (~RL4.5)	DCP 5 (~RL3.7)	DCP 6 (~RL3.8)
0.0 to 0.3	10	F	10	15	5	31
0.3 to 0.6	10	10	31	#	7	37
0.6 to 0.9	4	13	29		11	40
0.9 to 1.2	12	14	20		7	#
1.2 to 1.5	19	9	26		9	
1.5 to 1.8	17	41	21		9	
1.8 to 2.1	16	#	27		11	
2.1 to 2.4	18		10		9	
2.4 to 2.7	12		16		14	
2.7 to 3.0	22		26		21	
3.0 to 3.3	40		40		24	
3.3 to 3.6	#		#		21	
3.6 to 3.9					27	
3.9 to 4.2					40	
4.2 to 4.5					#	
	End of Test @ 3.3m	End of Test @ 1.8m	End of Test @ 3.3m	Refusal @ 0.3m	End of Test @ 4.2m	Refusal @ 0.9m

#refusal/end of test. F = DCP fell after being struck showing little resistance through all or part of the interval.

DCP Notes:

DCP1 – End of test @ 3.3m, DCP still very slowly going down, yellow sand on damp tip.

DCP2 – End of test @ 1.8m, DCP still very slowly going down, white shale fragments on dry tip, brown clay in collar above tip (interpreted to be fill as encountered in AH1).

DCP3 – End of test @ 3.3m, DCP still very slowly going down, yellow sand on wet muddy tip.

DCP4 – Refusal @ 0.3m on unknown obstruction in profile, DCP bouncing, grey shale fragments on dry tip.

DCP5 – End of test @ 4.2m, DCP still very slowly going down, yellow sand on wet muddy tip.

DCP6 – Refusal @ 0.9m on unknown obstruction in profile, DCP bouncing, white impact dust on dry tip.

5. Geological Observations/Interpretation

The site is underlain by manmade fill across the property over sands that were encountered to the extent of the testing. The property has been levelled with manmade filling to a maximum depth of ~1.3m. The fill overlies loose sands to a maximum depth of ~2.4m over medium dense sands to a maximum depth of ~3.9m before quickly becoming dense. Rock was not encountered to the extent of the tests at 4.2m. See the Type Section attached for a diagrammatical representation of the expected ground materials.

6. Groundwater

The water table was encountered a depth of ~2.2m below the current surface (~RL1.8). This is below the base of the proposed bulk excavation and, as such, dewatering will not be required. It should be noted the water table fluctuates with the tide and climatic changes.

7. Surface Water

No evidence of significant surface flows were observed on the property during the inspection. Normal sheet wash that is generated on the property will be quickly be absorbed into the sandy soil where surfaces are unsealed.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed above, below, or beside the property. The proposed excavation is a potential hazard until the retaining walls are in place (**Hazard One**).

Geotechnical Hazards and Risk Analysis - Risk Analysis Summary

HAZARDS	Hazard One
TYPE	The excavation for the basement parking collapsing onto the work site before retaining walls are in place.
LIKELIHOOD	'Likely' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (35%)
RISK TO PROPERTY	'High' (2×10^{-3})
RISK TO LIFE	2.3×10^{-4} /annum
COMMENTS	'UNACCEPTABLE' level of risk to life and property. To move risk to 'ACCEPTABLE' levels, the recommendations in Section 13 are to be followed.

(See Aust. Geomech. Jnl. Mar 2007 Vol. 42 No 1, for full explanation of terms)

9. Suitability of the Proposed Development for the Site

The proposed development is suitable for the site. No geotechnical hazards will be created by the completion of the proposed development provided it is carried out in accordance with the requirements of this report and good engineering and building practice.

10. Stormwater

There is fall to Bassett Street. Roof water from the proposed development is to be piped to the street drainage system through any tanks that may be required by the regulating authorities.

11. Excavations

An excavation to a maximum depth of ~2.0m will be required to install the basement parking for the proposed aged care centre. The excavation is expected to be through a manmade fill over Loose Sands. It is envisaged that excavations through fill and sand can be carried out with an excavator and bucket.

12. Vibrations

It is expected the proposed excavation will be carried out with an excavator and bucket and the vibrations produced will be below the threshold limit for building damage.

13. Excavation Support Requirements

The proposed excavation will reach a maximum depth of ~2.0m. The excavation will be sufficiently set back from the common boundaries. However, heavy ground support is recommended due to the presence of deep manmade fill, sand, and the proximity of the water table.

The proposed excavation requires support installed along all sides before excavations commence. In this instance, due to the manmade fill, sand, and watertable encountered secant or contiguous piers are suitable support. Secant piers are the preferred option but if contiguous piers are used, the gaps between the piers are to be grouted closed as the excavation is lowered so no sand moves through the wall. The piers can be temporarily supported by embedment below the base of the excavation and/or propping but are to be tied into the floor and ceiling slabs of the garage structure during construction.

It is recommended a piling rig capable of drilling through Medium Strength Rock be used for this job as the ground testing did not extend to the likely required depth of the piles. Additionally, the rig will need to be a CFA rig (capable of grout injection during the drilling process due to the presence of the water table in sand - wet sand). Alternatively, exploration drilling is to be carried out prior to the structural design.

The geotechnical consultant is to inspect the drilling process of the entire first pile and the ground materials at the base of all the piers before any steel or concrete is placed. Additionally, during this work the water table depth is to be confirmed.

All excavation spoil is to be removed from site following the current Environmental Protection Agency (EPA) waste classification guidelines.

14. Retaining Walls

For cantilever or singly-propped retaining walls, it is suggested the design be based on a triangular pressure distribution of lateral pressures using the parameters shown in Table 1.

Table 1 – Likely Earth Pressures for Retaining Walls

Unit	Earth Pressure Coefficients			
	Unit weight (kN/m ³)	'Active' K _a	'At Rest' K ₀	Passive
Fill and Loose Sands	20	0.45	0.60	'Ultimate' K _p = 3
Dense Sands	20	0.40	0.55	'Ultimate' K _p = 4.5

For rock classes refer to Pells et al "Design Loadings for Foundations on Shale and Sandstone in the Sydney Region". Australian Geomechanics Journal 1978.

It is to be noted that the earth pressures in Table 1 assume a level surface above the wall, do not account for any surcharge loads and assume retaining walls are fully drained. It should be noted that passive pressure is an ultimate value and should have an appropriate safety factor applied. No passive resistance should be assumed for the top 0.4m to account for any disturbance from the excavation. Rock strength and relevant earth pressure coefficients are to be confirmed on site by the geotechnical consultant.

All retaining walls are to have sufficient back-wall drainage and be backfilled immediately behind the wall with free-draining material (such as gravel). This material is to be wrapped in a non-woven Geotextile fabric (i.e. Bidim A34 or similar), to prevent the drainage from becoming clogged with silt and clay. If no back-wall drainage is installed in retaining walls, the likely hydrostatic pressures are to be accounted for in the structural design.

15. Foundations

It is recommended the proposed aged care centre be supported off screw piles due to the presence of fill and sand and the proximity of the base of the excavation to the water table. It is envisaged these will need to go to depths of at least 4.2m from the current surface into the dense sands. We can provide a list of screw pile contractors upon request who have successfully carried out similar works in the past and who can certify the foundations.

Note that we do not certify screw pile foundations. Screw pile design varies between contractors and we are not privy to the details of individual design or how the screw pile contractor converts torque to bearing pressure. As such, the screw pile contractor is totally responsible for ensuring the screw piles can support the loads on the piles and that these are within acceptable settlement limits.

For preliminary design purposes for the piles of the piled wall, assume a maximum allowable end bearing pressure of 400kPa for a 0.45m diameter pile embedded at least 2.5m below the base of the excavation into dense sand.

16. Inspections

The client and builder are to familiarise themselves with the following required inspections as well as council geotechnical policy. We cannot provide certification for the regulating authorities if the following inspections have not been carried out during the construction process.

- The geotechnical consultant is to inspect the ground materials while the first pile for the pile wall is being dug to assess the ground strength and to ensure it is in line with our expectations. All finished pier holes are to be inspected and measured before concrete is placed.
- Any conventional foundations other than screw piles are to be inspected and approved by the geotechnical consultant while the excavation equipment is still onsite and before steel reinforcing is placed or concrete is poured.

White Geotechnical Group Pty Ltd.



Ben White M.Sc. Geol.,
AusIMM., CP GEOL.
No. 222757
Engineering Geologist



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11

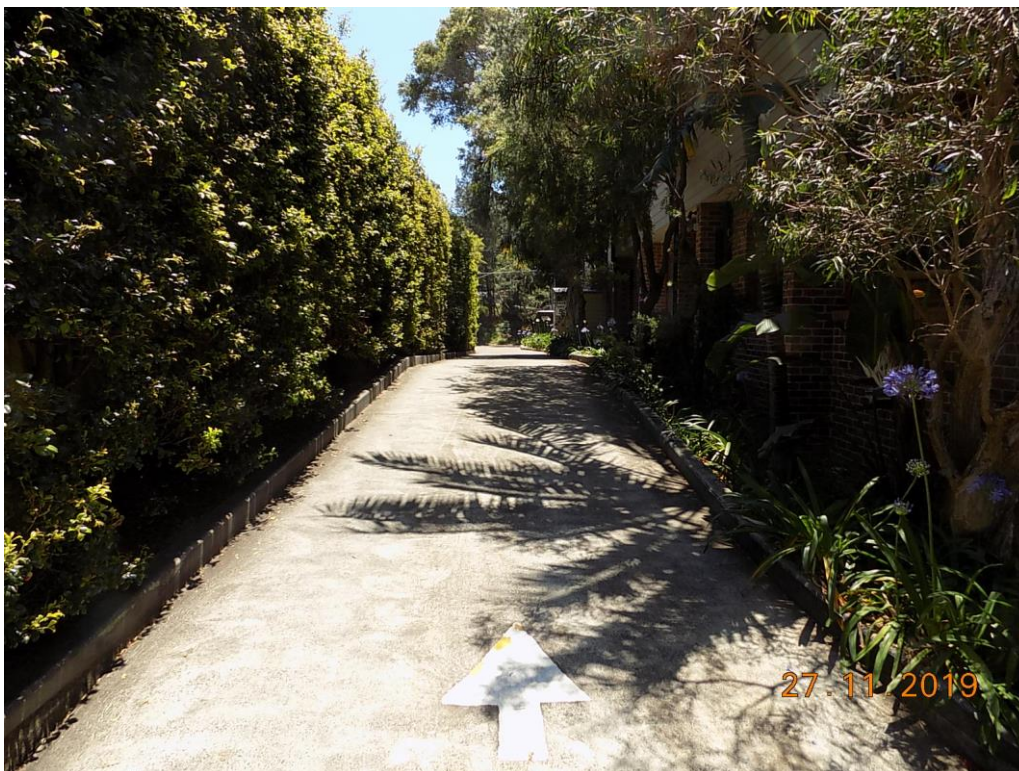


Photo 12



Photo 13: AH1 – Downhole is from left to right



Photo 14: AH2 – Downhole is from left to right

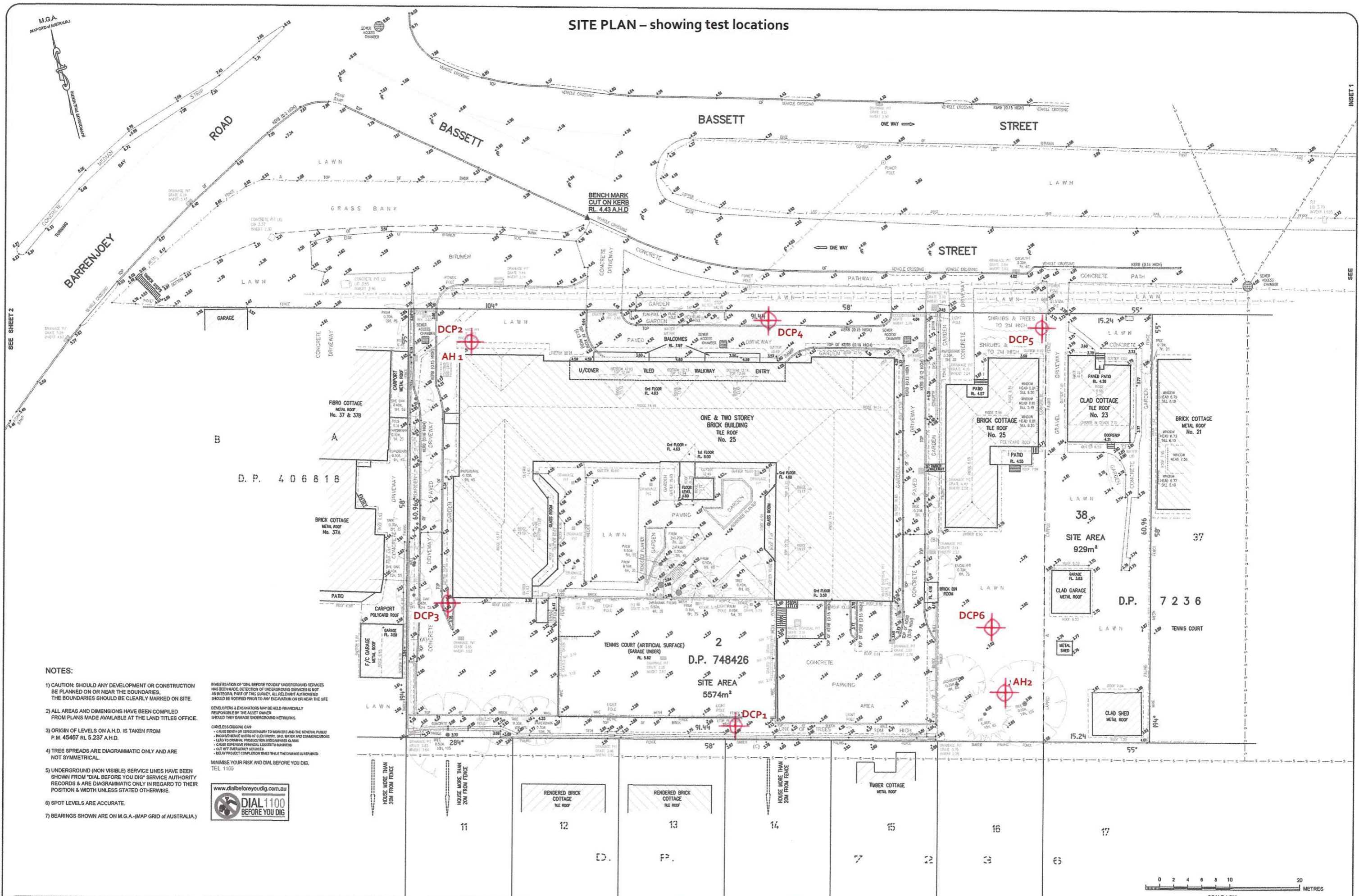
Important Information about Your Report

It should be noted that Geotechnical Reports are documents that build a picture of the subsurface conditions from the observation of surface features and testing carried out at specific points on the site. The spacing and location of the test points can be limited by the location of existing structures on the site or by budget and time constraints of the client. Additionally, the test themselves, although chosen for their suitability for the particular project, have their own limiting factors. The testing gives accurate information at the location of the test, within the confines of the test's capability. A geological interpretation or model is developed by joining these test points using all available data and drawing on previous experience of the geotechnical consultant. Even the most experienced practitioners cannot determine every possible feature or change that may lie below the earth. All of the subsurface features can only be known when they are revealed by excavation. As such, a Geotechnical report can be considered an interpretive document. It is based on factual data but also on opinion and judgement that comes with a level of uncertainty. This information is provided to help explain the nature and limitations of your report.

With this in mind, the following points are to be noted:

- If upon the commencement of the works the subsurface ground or ground water conditions prove different from those described in this report, it is advisable to contact White Geotechnical Group immediately, as problems relating to the ground works phase of construction are far easier and less costly to overcome if they are addressed early.
- If this report is used by other professionals during the design or construction process, any questions should be directed to White Geotechnical Group as only we understand the full methodology behind the report's conclusions.
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.
- This report should not be applied to any other project other than that outlined in section 1.0.
- This report is to be read in full and should not have sections removed or included in other documents as this can result in misinterpretation of the data by others.
- It is common for the design and construction process to be adapted as it progresses (sometimes to suit the previous experience of the contractors involved). If alternative design and construction processes are required to those described in this report, contact White Geotechnical Group. We are familiar with a variety of techniques to reduce risk and can advise if your proposed methods are suitable for the site conditions.

SITE PLAN – showing test locations



- NOTES:**
- CAUTION: SHOULD ANY DEVELOPMENT OR CONSTRUCTION BE PLANNED ON OR NEAR THE BOUNDARIES, THE BOUNDARIES SHOULD BE CLEARLY MARKED ON SITE.
 - ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT THE LAND TITLES OFFICE.
 - ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM P.M. 45467 RL 5.237 A.H.D.
 - TREE SPREADS ARE DIAGRAMMATIC ONLY AND ARE NOT SYMMETRICAL.
 - UNDERGROUND (NON VISIBLE) SERVICE LINES HAVE BEEN SHOWN FROM "DIAL BEFORE YOU DIG" SERVICE AUTHORITY RECORDS & ARE DIAGRAMMATIC ONLY IN REGARD TO THEIR POSITION & WIDTH UNLESS STATED OTHERWISE.
 - SPOT LEVELS ARE ACCURATE.
 - BEARINGS SHOWN ARE ON M.G.A.-(MAP GRID of AUSTRALIA)

INVESTIGATION OF "DIAL BEFORE YOU DIG" UNDERGROUND SERVICES HAS BEEN MADE. DETECTION OF UNDERGROUND SERVICES IS NOT AN INTEGRAL PART OF THIS SURVEY. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE.

DEVELOPERS & EXCAVATORS MAY BE HELD FINANCIALLY RESPONSIBLE BY THE ASSET OWNER SHOULD THEY DAMAGE UNDERGROUND NETWORKS.

CARELESS DIGGING CAN:

- CAUSE DEATH OR SERIOUS INJURY TO WORKERS AND THE GENERAL PUBLIC
- INCORPORATE USES OF ELECTRICITY, GAS, WATER AND COMMUNICATIONS
- LEAD TO CRIMINAL PROSECUTION AND DAMAGE CLAIMS
- CAUSE EXPENSIVE FINANCIAL LOSSES TO BUSINESS
- CAUSE OFF EMBARRASSING SERVICES
- DELAY PROJECT COMPLETION TIMES WHILE THE DAMAGE IS REPAIRED

MINIMISE YOUR RISK AND DIAL BEFORE YOU DIG.
TEL 1100



LEGEND

SEE PLAN	BOARDS SEWER
SEE PLAN	OVERHEAD ELECTRIC LINES
SEE PLAN	UNDERGROUND ELECTRIC LINES
SEE PLAN	TELEPHONE LINES
SEE PLAN	WATER LINES
SEE PLAN	CABLE LINES

TOTAL SITE AREA
6503m²

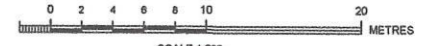
PLAN SHOWING BOUNDARIES, RELATIVE HEIGHTS & PHYSICAL FEATURES OVER LOT 2 IN D.P. 748426 & LOT 38 IN D.P. 7236 KNOWN AS Nos 23-25 BASSETT STREET, MONA VALE.
L.G.A.: PITTWATER

CLIENT	THOMPSON HEALTH CARE PTY LTD	REF No.	15006
PROPERTY	Nos 23-25 BASSETT STREET, MONA VALE	DATUM	A.H.D.
DRAWN	R.P./J.M.	SCALE	1:200 @ B1
DWG No.	15006A	DATE	04/03/2016
SHEET No.	1 of 1	SURVEYED	A.M./B.W.
REV No.	00		

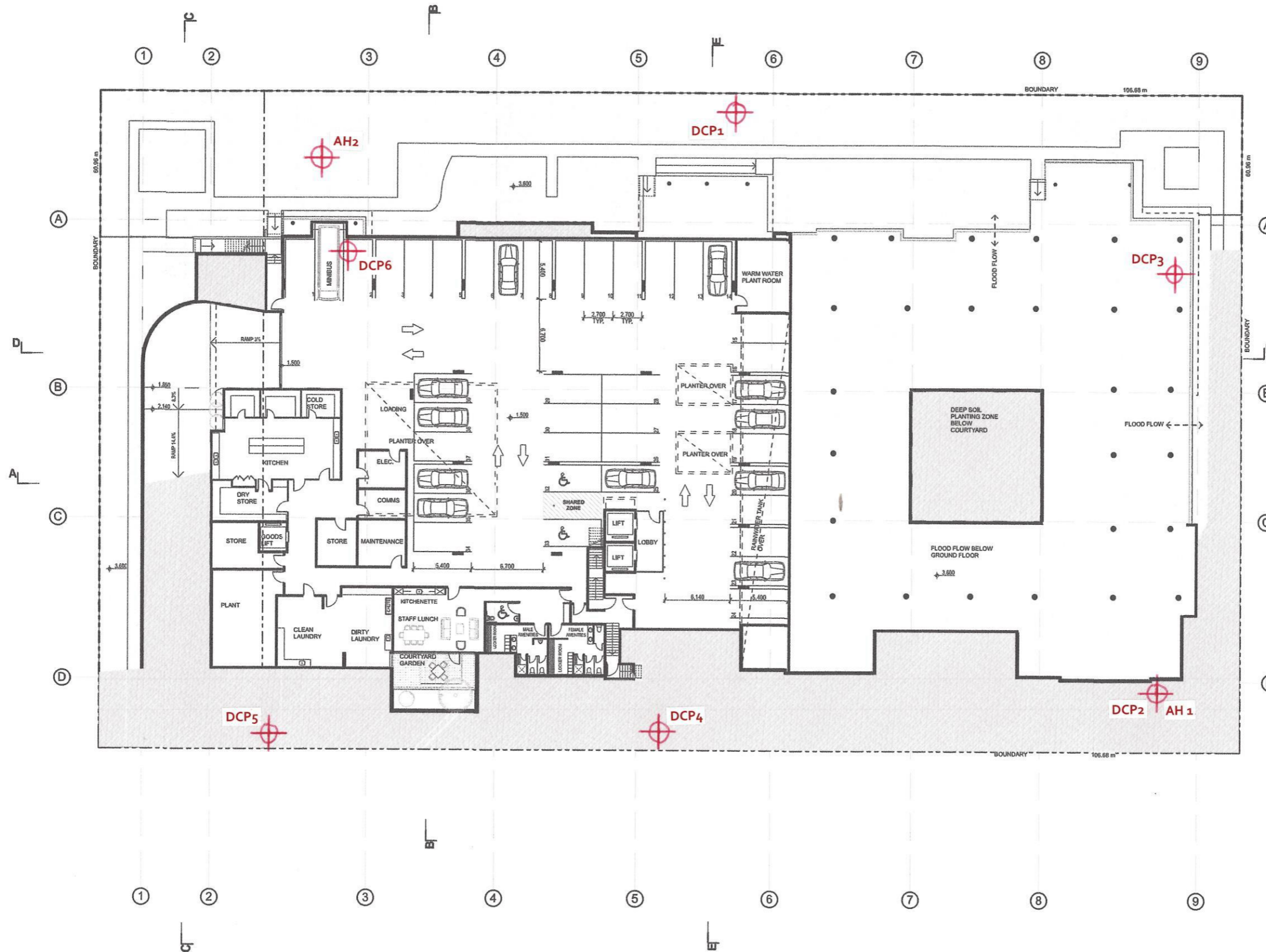
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Quality Surveying & Development Solutions

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ABN: 13 003 194 447
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(A) EASEMENT TO DRAIN WATER 1 WIDE
(B) EASEMENT TO DRAIN WATER 1 WIDE
(C) EASEMENT TO DRAIN WATER 1 WIDE



SITE PLAN – showing test locations

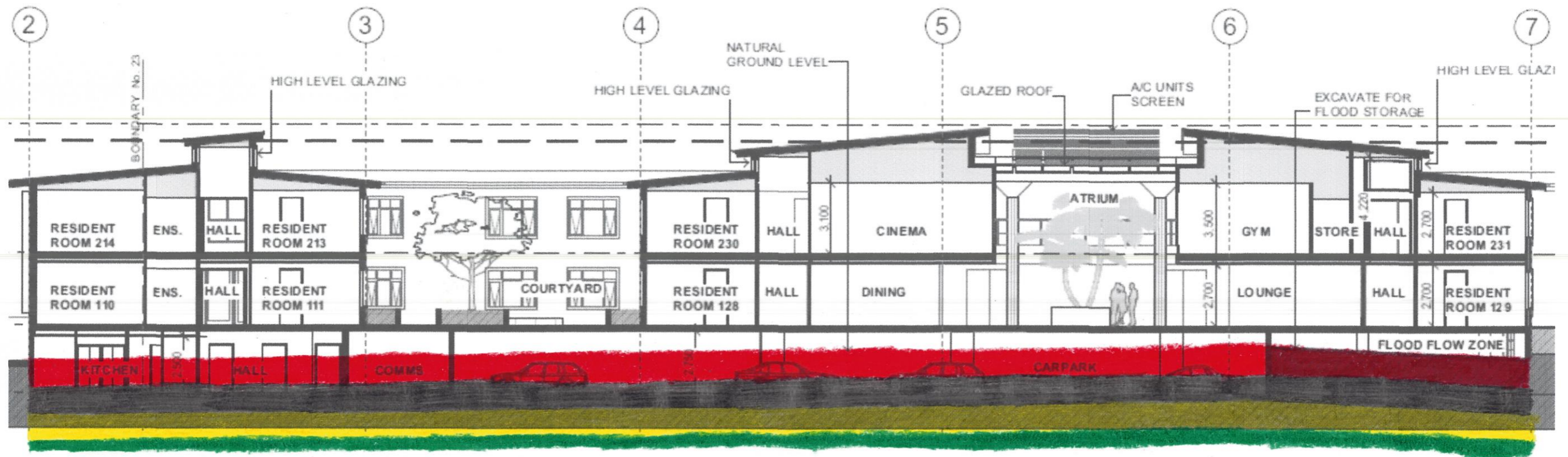


AREAS	
SITE AREA	6503 m ²
G.F.A	6150 m ² (0.95:1)
DEEP SOIL PLANTING	2300 m ² (35%)
LANDSCAPED AREA	2807 m ² (43%) (24 m ² /BED)

PARKING REQUIREMENTS	
50 STAFF	25 SPACES
RESIDENTS	11.8 SPACES
TOTAL	37 SPACES (39 PROPOSED)



TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



- Fill
- Sand - Loose
- Sand - Medium Dense
- Sand - Dense