

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

Development Application for Helen Owens  
Name of Applicant

Address of site 23 Park Avenue, Avalon Beach

*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 16/12/24 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 23 Park Avenue, Avalon Beach  
Report Date: 16/12/24  
  
Author: BEN WHITE  
  
Author's Company/Organisation: WHITE GEOTECHNICAL GROUP PTY LTD

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

Australian Geomechanics Society Landslide Risk Management March 2007.  
White Geotechnical Group company archives.

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 Park Avenue, Avalon Beach</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 Park Avenue, Avalon Beach</u>
Report Date: <u>16/12/24</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 6/12/24  
(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 6/12/24
- ☒ 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:**

### **Alterations and Additions at 23 Park Avenue, Avalon Beach**

#### **1. Proposed Development**

- 1.1** Construct an extension to the downhill side of the house by excavating to a maximum depth of ~0.6m.
- 1.2** Details of the proposed development are shown on 9 drawings by Sobi Wing Slingsby Architect, project number 923/21, drawings numbered 000, 100, 110, 111, 120, 200, 210, 220, and 300, dated 12.9.2024.

#### **2. Site Description**

- 2.1** The site was inspected on the 6<sup>th</sup> December, 2024, and previously on the 17<sup>th</sup> September, 2021.
- 2.2** This residential property is on the high side of the road and has a SW aspect. It is located on the gently graded upper reaches and crest of a NW-SE trending ridgeline. The slope rises to the house then falls across the property at angles averaging ~5°. The slope below continues at increasing angles and the slope above levels at the crest of the ridgeline.
- 2.3** At the road frontage, a gravel driveway runs across the slope to a timber framed carport on the uphill side of the property (Photo 1). The part two-storey brick and timber clad house is supported on brick walls and brick piers. The brick walls show no significant signs of movement and the brick piers stand vertical (Photo 2). Some of the supporting piers were observed to be supported directly onto outcropping Medium Strength Sandstone (Photo 3). A gently sloping lawn extends from the downhill side of the house to the lower common boundary (Photo 4). Sandstone can be seen outcropping through the slope in several places (Photo 5).

### 3. Geology

The Sydney 1:100 000 Geological Sheet indicates the site is underlain by the Newport Formation of the Narrabeen Group. This is described as interbedded laminite, shale and quartz to lithic quartz sandstone. A band of Medium Strength Sandstone underlies the location of the proposed works and extends through the otherwise shale-dominated profile.

### 4. Subsurface Investigation

One hand Auger Hole (AH) was put down to identify the ground materials. Four 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 attached. 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 not expected to be an issue for the testing on this site. However, 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 (~RL37.8) – AH1 (Photo 6)

Depth (m)	Material Encountered
0.0 to 0.15	<b>SILTY SOIL</b> , dark brown, orange, grey, fine to coarse grained, loose to medium dense, dry.
0.15 to 0.3	<b>CLAYEY SAND</b> , brown, rock fragments, fine to medium grained, medium dense, dry.

Refusal on rock @ 0.3m. No water table encountered.

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 (~RL37.8)	DCP 2 (~RL38.5)	DCP 3 (~RL38.9)	DCP 4 (~RL39.9)
0.0 to 0.3	6	11	5	8
0.3 to 0.6	#	13	16	10
0.6 to 0.9		21	#	#
0.9 to 1.2		#		
	Refusal on Rock @ 0.3m	Refusal on Rock @ 0.9m	Refusal on Rock @ 0.6m	Refusal on Rock @ 0.4m

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

### DCP Notes:

DCP1 – Refusal on rock @ 0.3m, DCP bouncing off rock surface, white impact dust on dry tip.

DCP2 – Refusal on rock @ 0.9m, DCP bouncing off rock surface, orange and white impact dust on dry tip.

DCP3 – Refusal on rock @ 0.6m, DCP bouncing off rock surface, orange clay on dry tip.

DCP4 – Refusal on rock @ 0.4m, DCP bouncing off rock surface, white impact on dry tip.

## 5. Geological Observations/Interpretation

Sandstone bedrock outcrops under the house and through the slope below the property. This is an unusually thick sandstone bed within the Narrabeen Group of Rocks. The rock is overlain by silty soils and clayey sands that fill the bench-step formation. In the test locations, the depth to Medium Strength Sandstone ranged between 0.3 to 0.9m below the current surface, being deeper due to the stepped nature of the underlying bedrock. The sandstone underlying the area of the proposed development is estimated to be medium strength. See Type Section attached for a diagrammatical representation of the expected ground materials.

## 6. Groundwater

Normal ground water seepage is expected to move over the buried surface of the rock and through the cracks. Due to the slope and elevation of the block, the water table is expected to be many metres below the area of the proposed works.

## 7. Surface Water

No evidence of surface flows were observed on the property during the inspection. As the property encompasses the crest of the hill, any surface flows will be generated on the property and will flow away from the property.

## 8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed above or beside the property. The gently graded land surface that falls across the property and continues below is a potential hazard (**Hazard One**). The vibrations from the proposed excavation is a potential hazard (**Hazard Two**). The proposed excavation is a potential hazard until retaining walls are in place (**Hazard Three**). The proposed excavations undercutting the footings for the house is a potential hazard (**Hazard Four**).

**RISK ANALYSIS SUMMARY ON THE NEXT PAGE**

## Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two
TYPE	The gentle slope that falls across the property and continues below failing and impacting on the proposed works.	The vibrations produced during the proposed excavation impacting on the surrounding structures.
LIKELIHOOD	'Unlikely' ( $10^{-4}$ )	'Possible' ( $10^{-3}$ )
CONSEQUENCES TO PROPERTY	'low' (5%)	'Medium' (15%)
RISK TO PROPERTY	'Low' ( $2 \times 10^{-5}$ )	'Moderate' ( $2 \times 10^{-4}$ )
RISK TO LIFE	$5.5 \times 10^{-7}$ /annum	$5.3 \times 10^{-7}$ /annum
COMMENTS	This level of risk is 'ACCEPTABLE'.	This level of risk to property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in <b>Section 12</b> are to be followed.

HAZARDS	Hazard Three	Hazard Four
TYPE	The excavation (to a maximum depth of ~0.6m) collapsing onto the work site before retaining walls are in place.	The proposed excavation undercutting the footings of the house causing failure.
LIKELIHOOD	'Unlikely' ( $10^{-4}$ )	'Possible' ( $10^{-3}$ )
CONSEQUENCES TO PROPERTY	'low' (10%)	'Medium' (35%)
RISK TO PROPERTY	'Moderate' ( $2 \times 10^{-4}$ )	'Moderate' ( $2 \times 10^{-4}$ )
RISK TO LIFE	$8.3 \times 10^{-6}$ /annum	$5.3 \times 10^{-5}$ /annum
COMMENTS	This level of risk to property is 'TOLERABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in <b>Section 13 and 14</b> are to be followed.	This level of risk to life and property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in <b>Section 13</b> 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**

The fall is away from the street. The stormwater engineer is to refer to council stormwater policy for suitable options for stormwater disposal.

## **11. Excavations**

An excavation to a maximum depth of ~0.6m is required for the proposed extension to the downhill side of the house.

The excavation is expected to be through soil and sand with Medium Strength Sandstone expected at depths of between 0.3m and 0.9m below the surface in the area of the proposed excavation.

It is envisaged that excavations through shallow soil and sand can be carried out with an excavator and bucket, and excavations through rock will require grinding or rock sawing and breaking.

## **12. Vibrations**

Possible vibrations generated during excavations through soil and sand will be below the threshold limit for building damage. It is expected that the majority of the excavations will be through Medium Strength Sandstone or better.

Excavations through rock should be carried out to minimise the potential to cause vibration damage to the existing subject house and neighbouring structures to the NW and SE. Allowing for 0.5m of backwall drainage, the setbacks from the proposed excavation to the existing structures/boundaries are as follows:



- Flush with the supporting posts of the subject deck.
- ~1.0m from the NW common boundary.
- ~3.4m from the SE common boundary.
- ~3.8m from the NW neighbouring garage.
- ~4.8m from the SE neighbouring shed.
- ~6.5m from the SE neighbouring house.

Close controls by the contractor over rock excavation are recommended so excessive vibrations are not generated.

Excavation methods are to be used that limit peak particle velocity to 5 mm/sec at the subject house. Vibration monitoring will be required to verify this is achieved. The vibration monitoring equipment must include a light/alarm so the operator knows if vibration limits have been exceeded. It also must log and record vibrations throughout the excavation works.

In Medium Strength Rock or better techniques to minimise vibration transmission will be required. These include:

- Rock sawing the excavation perimeter to at least 1.0m deep prior to any rock breaking with hammers, keeping the saw cuts below the rock to be broken throughout the excavation process.
- Limiting rock hammer size.
- Rock hammering in short bursts so vibrations do not amplify.
- Rock breaking with the hammer angled away from the nearby sensitive structures.
- Creating additional saw breaks in the rock where vibration limits are exceeded, as well as reducing hammer size as necessary.
- Use of rock grinders (milling head).

Should excavation induced vibrations exceed vibration limits after the recommendations above have been implemented, excavation works are to cease immediately and our office is to be contacted.

It is worth noting that vibrations that are below thresholds for building damage may be felt by the occupants of the neighbouring houses.

### **13. Excavation Support Requirements**

The excavation for the proposed extension will reach a maximum depth of ~0.6m. Allowing 0.5m for back wall drainage, the setbacks from the proposed excavation to the existing structures/boundaries are as follows:

- Flush with the supporting posts of the subject deck.
- ~1.0m from the NW common boundary.
- ~3.4m from the SE common boundary.
- ~3.8m from the NW neighbouring garage.
- ~4.8m from the SE neighbouring shed.
- ~6.5m from the SE neighbouring house.

As such, the supporting posts of the subject deck will lie within the zone of influence of the proposed excavation. In this instance, the zone of influence is the area above a theoretical 30° line from the base of the excavation or top of Medium Strength Rock, whichever is encountered first, towards the surrounding structures and boundaries.

Given the shallow depth to rock, we think it is likely the deck is supported on rock. However, to be sure, Where the posts fall within the zone of influence of the excavation, exploration pits next to the posts will need to be put down by the builder to determine the foundation depth and material. These are to be inspected by the geotechnical consultant.

If the foundations are confirmed to be supported on rock, the excavation may commence. If they are not, the supporting posts of the deck will need to be underpinned to rock prior to the excavation commencing. See the site plan attached for the minimum extent of the required exploration pits/underpinning.

During the excavation process, the geotechnical consultant is to inspect the excavations as they approach no less than 0.5m horizontally from the foundations of the deck to confirm the stability of the cut to go flush with the footings.

The sides of the excavation are expected to stand at near-vertical angles for a short period of time until the retaining walls are in place, provided they are kept from becoming saturated.

All unsupported cut batters through fill, soil, and sand are to be covered to prevent access of water in wet weather and loss of moisture in dry weather. The covers are to be tied down with metal pegs or other suitable fixtures so they cannot blow off in a storm. The materials and labour to construct the retaining walls are to be organised so on completion of the excavation they can be constructed as soon as possible. The excavation is to be carried out during a dry period. No excavations are to commence if heavy or prolonged rainfall is forecast.

Upon completion of the excavation, it is recommended all cut faces be supported with retaining walls to prevent any potential future movement of joint blocks in the cut face that can occur over time, when unfavourable jointing is obscured behind the excavation face. Additionally, retaining walls will help control seepage and to prevent minor erosion and sediment movement.

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

## **14. Retaining Structures**

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

**TABLE 1 ON THE NEXT PAGE**

**Table 1 – Likely Earth Pressures for Retaining Structures**

Unit	Earth Pressure Coefficients		
	Unit weight (kN/m <sup>3</sup> )	'Active' K <sub>a</sub>	'At Rest' K <sub>0</sub>
Fill, Topsoil, Sand	20	0.40	0.55
Residual Clays	20	0.35	0.45
Medium Strength Sandstone	24	0.00	0.01

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 structure, do not account for any surcharge loads, and assume retaining structures are fully drained.

Rock strength and relevant earth pressure coefficients are to be confirmed on site by the geotechnical consultant.

All retaining structures are to have sufficient back-wall drainage and be backfilled immediately behind the structure 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 structures, the likely hydrostatic pressures are to be accounted for in the structural design.

## 15. Foundations

The proposed extension is expected to be partially seated in Medium Strength Sandstone. This is a suitable foundation material. It is expected to be exposed across the uphill side of the excavation. Where it is not exposed, and where the footprint of the proposed extension does not fall over the excavation, shallow piers taken to rock will be required to maintain a uniform foundation material across the structure. The piers for the downhill side of the

extension are expected to encounter Medium Strength Sandstone at depths of between ~0.3m to ~0.9m below the current surface.

A maximum allowable bearing pressure of 600kPa can be assumed for footings on Medium Strength Sandstone.

Naturally occurring vertical cracks (known as joints) commonly occur in sandstone. These are generally filled with soil and are the natural seepage paths through the rock. They can extend to depths of several metres and are usually relatively narrow but can range between 0.1 to 0.8m wide. If a footing falls over a joint in the rock, the construction process is simplified if with the approval of the structural engineer the joint can be spanned or alternatively the footing can be repositioned so it does not fall over the joint.

**NOTE:** If the contractor is unsure of the footing material required, it is more cost-effective to get the geotechnical consultant on site at the start of the footing excavation to advise on footing depth and material. This mostly prevents unnecessary over-excavation in clay-like shaly-rock but can be valuable in all types of geology.

## 16. Geotechnical Review

The structural plans are to be checked and certified by the geotechnical engineer as being in accordance with the geotechnical recommendations. On completion, a Form 2B will be issued. This form is required for the Construction Certificate to proceed.

## 17. Inspection

The client and builder are to familiarise themselves with the following required inspection as well as council geotechnical policy. We cannot provide geotechnical certification for the owners and Occupation Certificate if the following inspection has not been carried out during the construction process.

- All footings are to be inspected and approved by the geotechnical consultant while the excavation equipment and contractors are still onsite and before steel reinforcing is placed or concrete is poured.

White Geotechnical Group Pty Ltd.



Tyler Jay Johns  
BEng (Civil)(Hons),  
Geotechnical Engineer.

Reviewed By:



Nathan Gardner B.Sc. (Geol. & Geophys. & Env. Stud.)  
AIG., RPGeo Geotechnical & Engineering.  
No. 10307  
Engineering Geologist & Environmental Scientist.







Photo 1



Photo 2





Photo 3



Photo 4





Photo 5





Photo 6 (Top is top of hole)



## 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.

PLOT DATE : 26/11/24

DRAWING ISSUE

A    PRELIM DA CONSULTANTS    26/11

NOTES

Project  
Garden Cubby

Client  
Jess and Andy Owens

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Avalon Beach  
NSW 2107

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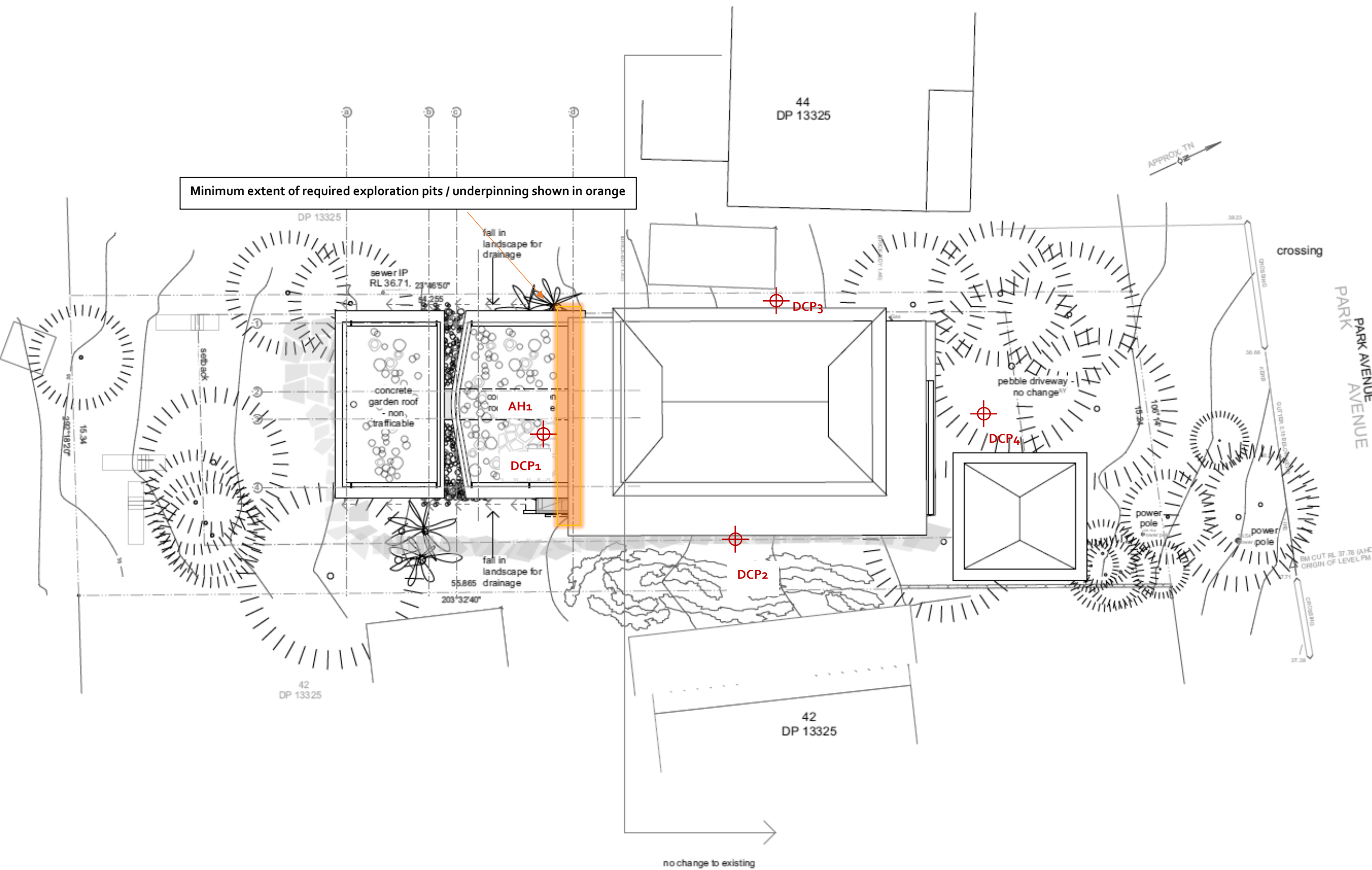
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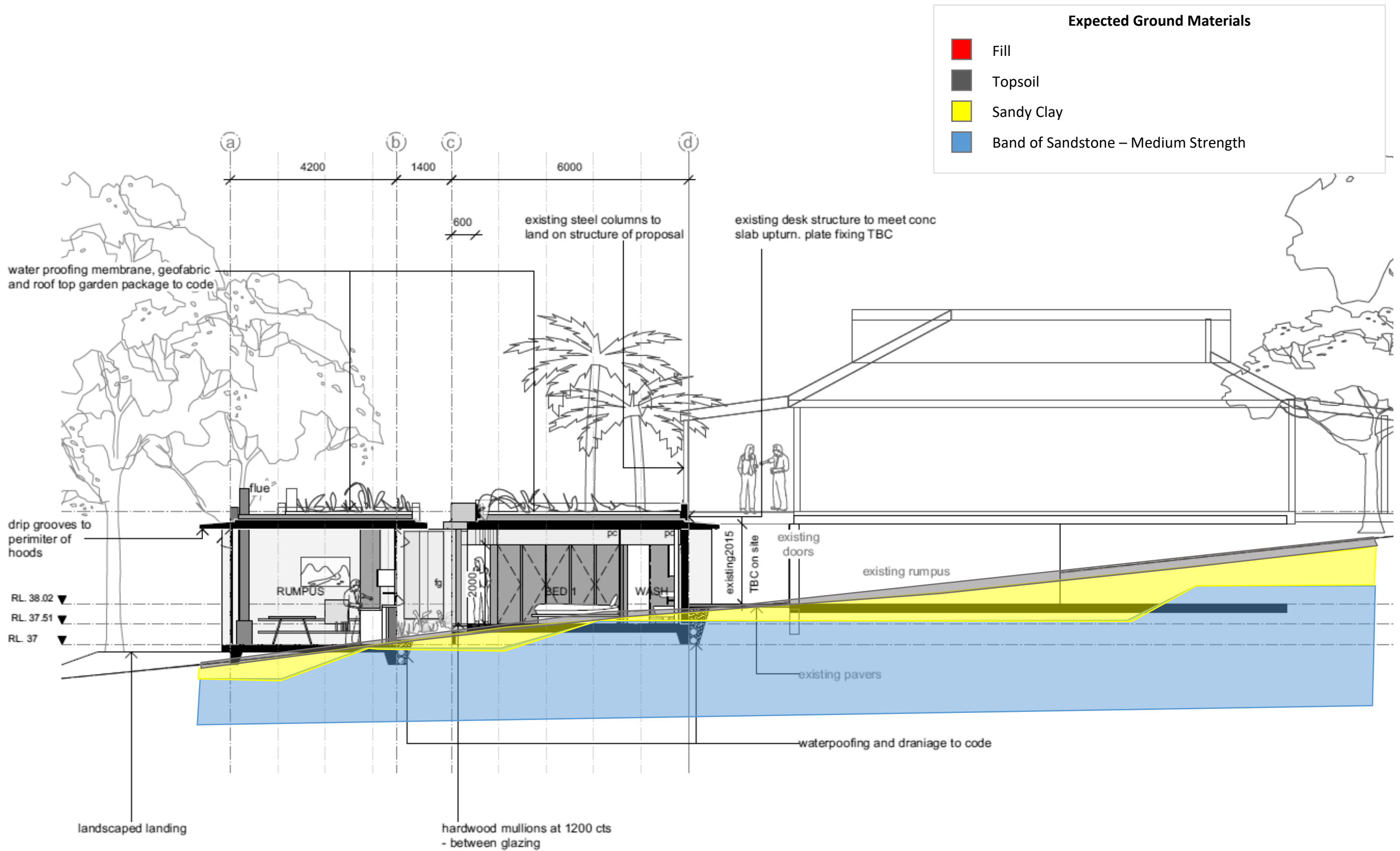
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Drawing  
site plan

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# TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



Project  
Garden Cubby

Client  
Jess and Andy Owens

Address  
23 Park Avenue  
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Drawing  
section a

Rev.  
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300

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# EXAMPLES OF **GOOD** HILLSIDE PRACTICE



# EXAMPLES OF **POOR** HILLSIDE PRACTICE

