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

Development Application for _____
Name of Applicant

Address of site 28 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 14/4/25 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 **28 Bassett Street, Mona Vale**

Report Date: 14/4/25

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 MScGEOL AIG., RPGeo

Membership No. 10306

Company **White Geotechnical Group Pty Ltd**

REGISTERED PROFESSIONAL GEOSCIENTIST
AUSTRALIAN INSTITUTE OF GEOSCIENTISTS
BENJAMIN WHITE
RPGeo No: 10306

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 28 Bassett Street, Mona Vale

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 **28 Bassett Street, Mona Vale**

Report Date: 14/4/25

Author: BEN WHITE

Author's Company/Organisation: **White Geotechnical Group Pty Ltd**

Please mark appropriate box

☒ Comprehensive site mapping conducted **4/4/25** (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 **4/4/25**

☒ 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 MScGEOL AIG., RPGeo

Membership No. 222757

Company **White Geotechnical Group Pty Ltd**

GEOTECHNICAL INVESTIGATION:

Alterations and Additions and New Pool at **28 Bassett Street, Mona Vale**

1. Proposed Development

1.1 Partially demolish the existing house and extend to the NE and SW by excavating to a maximum depth of ~1.1m.

1.2 Install a pool and spa on the NE side of the house by excavating to a maximum depth of ~1.1m.

1.3 Install a Lift.

1.4 Construct a new driveway and crossover at the road frontage.

1.5 Landscape the NE side of the property by filling to a maximum height of ~2.4m.

1.6 Various other minor internal and external alterations and additions.

1.7 Details of the proposed development are shown on 11 drawings prepared by Site Specific Designs, project number 2024 08, drawings DA00 to DA010. All dated 8/04/2025.

2. Site Description

2.1 The site was inspected on the 4th April, 2025.

2.2 This residential property is on the high side of the road and has a W aspect. The block runs lengthways to the NE so the slope is a cross-fall. It is located on the gently graded lower reaches of a hillslope. The natural slope rises across the property at an average angle of ~7°. The slope above the property continues at similar gentle angles. The slope below the property decreases in grade.

2.3 At the road frontage, a concrete driveway runs up the slope to a garage on the ground floor of the house (Photo 1). A cut for the driveway and fill for a gently sloping lawn between the road frontage and the house is supported by a stable low sandstone flagging retaining wall (Photo 2). This wall will be replaced as part of the proposed works. The two-story house is supported on brick walls and brick piers. One of the supporting walls of the house appears to be supported on a concrete strip footing on the natural soil. The soil underneath the wall was observed to have washed away and the wall is slightly undercut (Photo 3). It is shown on the plans to remain so is to be underpinned as part of the proposed works. See **Sections 13 & 15** for advice. The supporting piers stand vertical. Between the NE side of the house and the NE common boundary is a gently graded lawn (Photo 4).

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.

4. Subsurface Investigation

One hand Auger Hole (AH) was put down to identify the soil materials. Access was granted by the builders on the downhill neighbouring property to observe and log an exposed excavation (LOG). Five 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 have been an issue for this site. But due to the possibility that the actual ground conditions vary from our interpretation there should be allowances in the excavation and foundation budget to

account for this. We refer to the appended "Important Information about Your Report" to further clarify. The results are as follows:

AUGER HOLE 1 – AH1 (Photo 5)

Depth (m)	Material Encountered
0.0 to 0.6	**TOPSOIL**, clayey soil, dark brown, Soft to Stiff, dry, fine grained.
0.6 to 0.8	**SOIL**, clayey soil, brown, Very Stiff, dry, fine to coarse grained, rock fragments up to 1cm in diameter throughout.

End of hole @ 0.8m in clayey soil. No water table encountered.

EXCAVATION 1 (~RL8.0) – LOG1 (Photo 6)

Depth (m)	Material Encountered
0.0 to 0.6	**TOPSOIL**, clayey soil, dark brown, Soft to Stiff, dry, fine grained.
0.6 to 0.8	**SOIL**, clayey soil, brown, Very Stiff, dry, fine to coarse grained, rock fragments up to 1cm in diameter throughout.
0.8 to 1.2	**RESIDUAL CLAY**, derived from weathered rock, mottled orange and red Very Stiff to Hard, dry.
1.2 to 1.6	**EXTREMELY LOW TO VERY LOW STRENGTH ROCK OR BETTER,** mottled red and orange, dry, fine grained, rock inclusions of varying sizes up to 10cm diameter present.

Base of excavation @ 1.6m in Extremely Low to Very Low Strength Rock or Better. No water table encountered.

DCP RESULTS ON THE 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**	**DCP 2**	**DCP 3**	**DCP 4**	**DCP 5**
0.0 to 0.3	7	7	5	5	4
0.3 to 0.6	13	10	13	14	17
0.6 to 0.9	10	15	17	18	29
0.9 to 1.2	2	18	28	23	#
1.2 to 1.5	#	#	20	9	
1.5 to 1.8			#	#	
	Refusal on Rock @ 1.0m	Refusal on Rock @ 1.1m	Refusal on Rock @ 1.4m	Refusal on Rock @ 1.3m	Refusal on Rock @ 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 – Refusal on Rock @ 1.0m, DCP bouncing off rock surface, maroon and brown sandy clay on dry tip.

DCP2 – Refusal on Rock @ 1.1m, DCP bouncing off rock surface, maroon and brown sandy clay on dry tip.

DCP3 – Refusal on Rock @ 1.4m, DCP thudding on rock surface, maroon and brown sandy clay on dry tip.

DCP4 – Refusal on Rock @ 1.3m, DCP bouncing off rock surface, maroon clay on dry tip, brown and maroon clay in collar above tip.

DCP5 – Refusal on Rock @ 0.9m, DCP bouncing off rock surface, maroon clay on dry tip, brown and maroon clay in collar above tip.

5. Geological Observations/Interpretation

The geomorphology of the slope across the property is indicative of a shale-derived slope typical of the Narrabeen Group. However, all DCP tests bounced at refusal. The exposed excavation on the downhill neighbouring property which extends to ~1.6m below the current surface, exceeding the depth of refusal in the DCP testing suggests that the tests refused on Extremely Low to Very Low Strength Shale or better. The rock is overlain by clayey soils and natural clays. Filling has been placed across the SW side of the property for landscaping. The clays merge into the weathered zone of the underlying shale at depths of between 0.9m to

1.4m below the current surface, being deeper due to the presence of filling and a variable weathering profile. It is to be noted that this material can appear as a mottled stiff clay when it is cut up by excavation equipment. 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 denser and less permeable clay and weathered shale layers in the sub-surface profile. Due to the slope and site elevation, the water table is expected to be many metres below the base of the proposed works.

7. Surface Water

No evidence of surface flows were observed on the property during the inspection. It is expected that normal sheet wash will move onto the site from above the property during heavy down pours.

8. Geotechnical Hazards and Risk Analysis

No geotechnical hazards were observed above, below or beside the property. The proposed excavations are a potential hazard until the retaining walls / pool and spa structure are in place (**Hazard One**). The proposed excavation undercutting the supporting walls of the house is a potential hazard. (**Hazard Two**).

RISK ANALYSIS SUMMARY ON THE NEXT PAGE

Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two
TYPE	The excavations collapsing onto the work site before retaining structures are in place.	The proposed excavation under the house undercutting the supporting walls of the house causing damage or failure.
LIKELIHOOD	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (25%)
RISK TO PROPERTY	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	8.3×10^{-6}/annum	5.3×10^{-5}/annum
COMMENTS	This level of risk to property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels, the recommendations in **Section 13 and 15** are to be followed.	This level of risk to life and property is 'UNACCEPTABLE'. 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

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

11. Excavations

Two excavations will be required for the proposed development:

- An excavation to a maximum depth of ~1.1m is required for the house extension on the NE side of the house.
- An excavation to a maximum depth of ~1.1m for the proposed pool and spa.

The excavations are expected to be through deep clayey soil and clay. It is envisaged that excavations through soil and clay can be carried out with an excavator and toothed bucket.

12. Vibrations

It is expected the proposed excavations will be carried out with an excavator and bucket and the vibrations produced will be below the threshold limit for building or infrastructure damage using a domestic sized excavator up to 16 tonnes.

13. Excavation Support Requirements

Bulk Excavation for House Extension

The excavations for the proposed house extension will reach a maximum depth of ~1.1m for the subfloor on the NE side. Minor leveling is also required under the existing house to create a compliant head height. Allowing 0.5m for back wall drainage, the setbacks are as follows:

- ~Flush with the supporting walls of the house.
- ~0.5m from the NW common boundary.

As such, the supporting walls of the house and the NW common boundary will lie within the zone of influence of the proposed excavations. In this instance, the zone of influence is the area above a theoretical 45° line (from horizontal) from the base of the excavation towards the surrounding structures and boundaries. This line reduces to 30° through the fill and soil.

Where the supporting walls of the house fall within the zone of influence of the excavation, exploration pits along the walls 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 extend below the zone of influence of the proposed excavation, the excavation may commence. If they are not, the walls will need to be underpinned to below the zone of influence of the cut prior to the excavation commencing. See the site plan attached for the minimum extent of the required exploration pits/underpinning.

Underpinning is to follow the underpinning sequence 'hit one miss two'. Under no circumstances is the bulk excavation to be taken to the edges of the walls and then underpinned. Underpins are to be constructed from drives that should not exceed 0.6m in width along strip footings and should be proportioned according to footing size for other foundation types. Allowances are to be made for drainage through the underpinning to prevent a build-up of hydrostatic pressure. Underpins that are not designed as retaining walls are to be supported by retaining walls. The void between the retaining walls and the underpinning is to be filled with free-draining material such as gravel.

Where room permits, the soil and clay portions of the excavation are expected to stand temporarily at batter angles of 30^{o} (1.0 Vertical to 1.7 Horizontal). Where there is not room for these batters, such as along the NW side of the subfloor excavation, the excavation will need to be temporarily or permanently supported prior to the commencement of the excavation, or during the excavation process in a staged manner, so cut batters are not left unsupported. See the site plan attached for the minimum extent of the required shoring. The support will need to be designed / approved by the structural engineer in consultation with the Geotechnical Consultant

Bulk Excavation for Pool and Spa

The excavation for the proposed pool will reach a maximum depth of ~1.1m and will be sufficiently set back from any nearby structures and boundaries.

The soil and clay portions of the proposed pool excavation are expected to stand at near-vertical angles for short periods of time until the pool structure is installed, provided the cut batters are kept from becoming saturated.

Advice Applying to Both Excavations.

Upslope runoff is to be diverted from the cut faces by sandbag mounds or other diversion works. All unsupported cut batters 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 pool structure/retaining walls are to be organised so on completion of the excavations they can be constructed as soon as possible. The excavations are to be carried out during a dry period. No excavations are to commence if heavy or prolonged rainfall is forecast.

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

14. Fill

14.1 Fill will be placed under the proposed driveway and SW side of the proposed house to a height of ~0.5m. We recommend the fill in this location is used as formwork only and the structures above are suspended, and not supported on the fill. This simplifies the building process as the fill does not require engineer supervised compaction and testing. If it is desired to support structures on fill, it is to be laid as an engineered fill. Our office can be contacted for further advice on this procedure.

14.2 Fill will also will be placed NE of the proposed house for landscaping. No fills are to be laid until retaining walls are in place or fill batters are placed at not more than 26° from horizontal (1.0 Vertical to 2.0 Horizontal). The fills will reach a maximum height of ~1.3m. The surface is to be prepared before any fills are laid by removing any organic matter and topsoil. Fills for landscaping are to be laid in a loose thickness not

exceeding 0.3m before being moderately compacted. Tracking the machine over the loose fill in 1 to 2 passes should be sufficient. Immediately behind the retaining walls (say to 1.5m), the fills are to be compacted with light weight equipment such as a hand-held plate compactor so as not to damage the retaining walls. Where light weight equipment is used, fills are to be laid in a loose thickness not exceeding 0.15m before being compacted. No structures are to be supported on fill.

15. Retaining Structures

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

Table 1 – Likely Earth Pressures for Retaining Structures

Unit	Earth Pressure Coefficients		
	Unit weight (kN/m^3)	'Active' K_a	'At Rest' K_0
Fill and Topsoil	20	0.40	0.55
Residual Clays	20	0.35	0.45
Extremely Low Strength Rock	22	0.25	0.38
Very Low Strength Rock	22	0.22	0.35

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 full hydrostatic pressures are to be accounted for in the retaining structure design.

16. Site Classification

The site classification is Class M in accordance with AS2870-2011.

17. Foundations

The proposed pool and spa excavation is expected to be partially seated in Very Stiff to Hard Clay. This is a suitable foundation material. It is expected to be exposed across the deepest part of the proposed excavation. Where it is not exposed, shallow piers taken to this material will be required to maintain a uniform foundation material across the structure. A maximum allowable bearing pressure of 200kPa can be assumed for footings embedded in the Very Stiff to Hard clay of the natural profile. The piers are expected to encounter Very Stiff to Hard clay at ~0.9m below the current surface.

For better quality footings or where little movement can be tolerated, piers can be taken to Extremely Low to Very Low Strength Shale or better. This material is expected at depths of between ~1.3m to ~1.4m below the current surface in the area of the proposed pool and spa.

The pool pavilion, lift, and any new footings for the proposed extensions to the house can be supported on piers taken to the underlying Extremely Low to Very Low Strength Shale or better. This material is expected at depths of between 0.9m to 1.4m below the current surface in the area of the proposed extensions.

The foundations supporting the existing house were observed to be at least partially supported on the natural clayey soil from within the foundation space (Photo 3). Where the

footing material changes across the structure, construction joints or similar are to be installed to prevent differential settlement between the old and new portions of the structure.

A maximum allowable bearing pressure of 600kPa can be assumed for footings on Extremely Low to Very Low Strength Shale or better. It should be noted that this material is a soft rock and a rock auger will cut through it so the builders should not be looking for refusal to end the footings.

The proposed driveway can be supported off the natural surface after any organic matter has been stripped. A maximum allowable bearing pressure of 100kPa can be assumed for soil of the natural surface. Where the driveway is suspended over the fill it is to be supported on shallow piers taken to the natural surface. Where the foundation material changes between the garage and driveway, construction joints are to be installed to separate the different foundation materials and to accommodate minor differential movement.

As the bearing capacity of clay and shale reduces when it is wet, we recommend the footings be dug, inspected, and poured in quick succession (ideally the same day if possible). If the footings get wet, they will have to be drained and the soft layer of wet clay or shale on the footing surface will have to be removed before concrete is poured.

If a rapid turnaround from footing excavation to the concrete pour is not possible, a sealing layer of concrete may be added to the footing surface after it has been cleaned and inspected by the geotechnical consultant.

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.

18. 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.

19. 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 Occupation Certificate or the owner if the following inspections have not been carried out during the construction process.

- The exploration pits to determine the foundation material along the supporting walls of the house are to be inspected by the geotechnical consultant to determine if underpinning is necessary. This is to occur before the bulk excavations for the house extensions commence.
- 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.

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No. 10307
Engineering Geologist & Environmental Scientist.

Reviewed By:

Ben White M.Sc. Geol.,
AIG., RPGeo Geotechnical & Engineering.
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REGISTERED PROFESSIONAL GEOSCIENTIST
AUSTRALIAN INSTITUTE OF GEOSCIENTISTS
BENJAMIN WHITE
RPGeo No: 10306

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5 – downhole is top to bottom

Photo 6

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.

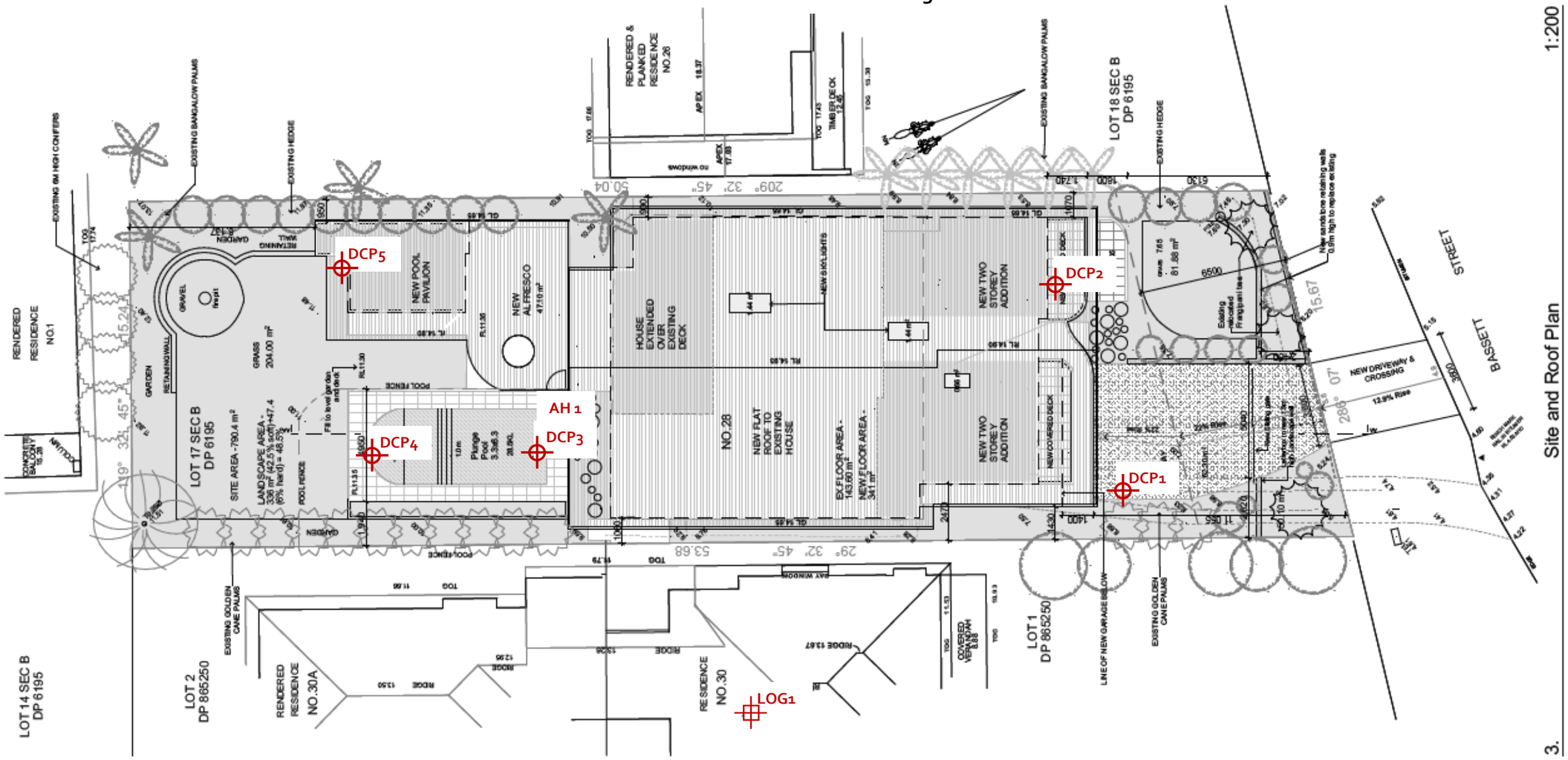
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.

- 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



Basix Certificate Commitments
A1790810 - 8/4/25

Pool and Spa
Pool - must be outdoors and have a capacity <25kL
Spa - must be outdoors and have a capacity <3.5kL
Must have a pool cover and pool pump timer
Solar heating only for the pool, Electric heat pump for the Spa
Rainwater tank required 1783Ltrs collecting 104m2 roof area. Tap connected within 10m of pool

Fixtures and Systems
Hotwater - Electric Heat Pump
Lighting - 40% new or alterted to be LED, compact fluorescent, or fluorescent
Showerheads and taps to have flow rate <9ltrs/min, 3 Star minimum, Toilets <4ltrs/flush, 3 Star min

Construction and Insulation
Floor - concrete slab on ground -nil
Floor - framed, enclosed subfloor -R0.6 or R1.3 including construction
Wall - external brick veneer R1.16 or R1.7 incl.construction
Wall - external framed walls R1.3 or R1.7Incl.construction
Roof - Light roof colour - SA <0.475
Framed roof flat ceiling, flat roof - R1.40+55mm foil backed blanket

Window and Glazed Doors - Aluminium

W1-W3, 0mm eave U7.63, SHGC 0.75 -Clear glass

W4, 0mm eave U7.57, SHGC 0.57 - Toned glass

W5-W7, 450mm eave, U7.63, SHGC 0.75 -Clear glass

W8,W16, 900mm eave, U7.63, SHGC 0.75 -Clear glass

W09, W10, 600mm eave,U7.63, SHGC 0.75 -Clear glass

W11-W13, 600mm eave U7.57, SHGC 0.57 - Toned glass

W14, W15, 600mm eave,U7.63, SHGC 0.75 -Clear glass

W17-W24, U4.48, SHGC 0.46 - Low E glass

W25, 900mm eave, U7.63, SHGC 0.75 -Clear glass

W26, 0mm eave U7.57, SHGC 0.57 - Toned glass

D01-D09
900mm eave U7.63, SHGC 0.75 - Clear glass

Skylights- timber framed
S1,S2- 1.44m2, U 2.9 SHGC 0.456
S3, 0.66m2, U 2.9 SHGC 0.456

Perspective from Driveway

Site Specific SSD Designs

Drawn | Checked	SH | SH
Plot Date:	8/04/2025
Project NO.	2024 08
Project Status	DA
Client	Brett and Kammi Beuzeville
Climate Zone	5
Wind Region	TBC
Site:	28 Bassett Street Mona Vale NSW 2103 Australia

DRAWING TITLE :

Plans
Site and Roof Plan

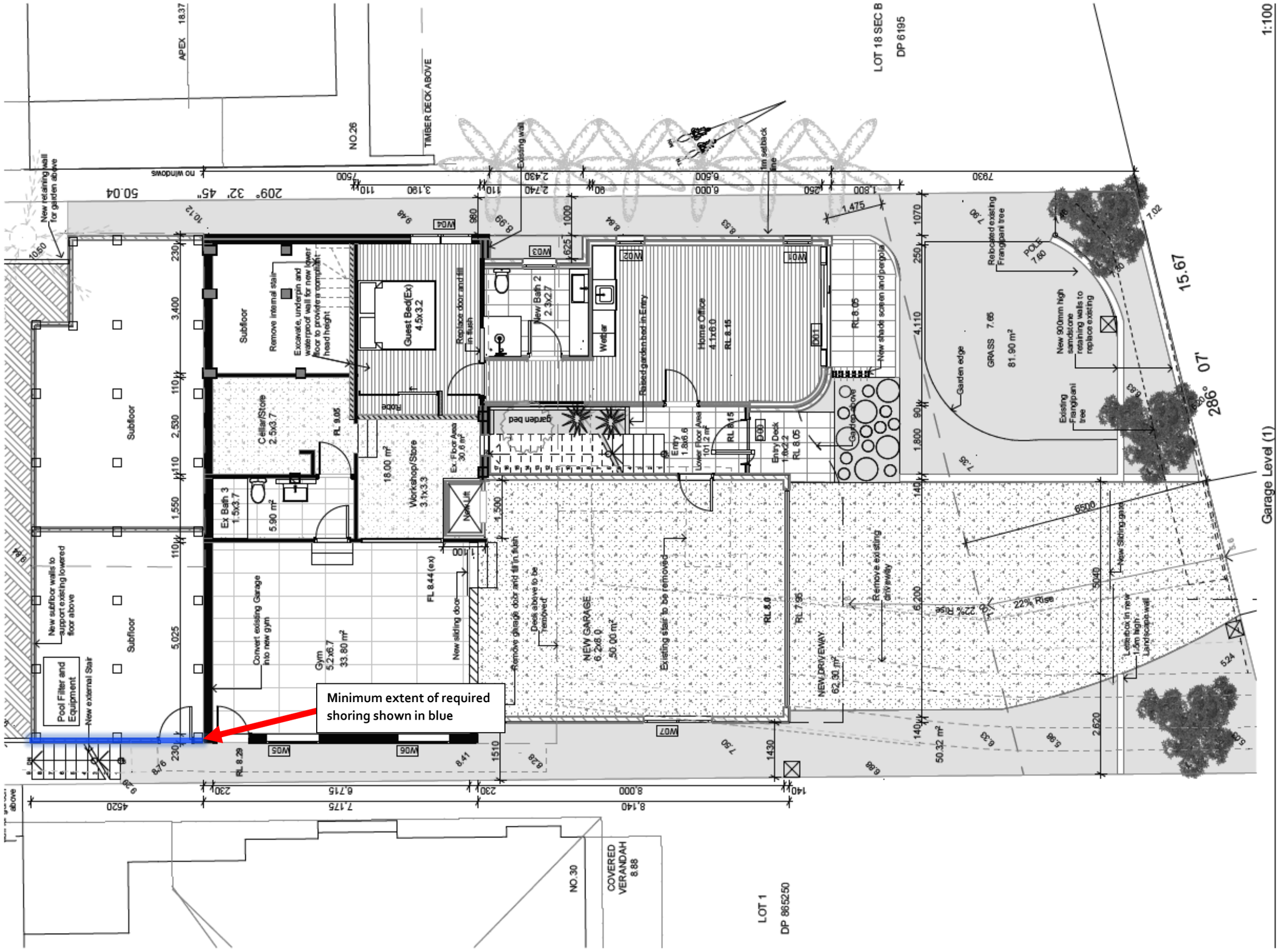
PROJECT NAME :

Beuzeville Home

REVISION NO.

DRAWING NO. **DA 00**

Plot Date: 8/04/2025



Basix Certificate Commitments
A1790810 - 8/4/25

Pool and Spa
Pool - must be outdoors and have a capacity <25kL
Spa - must be outdoors and have a capacity <3.5kL
Must have a pool cover and pool pump timer
Solar heating only for the pool, Electric heat pump for the Spa
Rainwater tank required 1783Ltrs collecting 104m2 roof area. Tap connected within 10m of pool

Fixtures and Systems
Hotwater - Electric Heat Pump
Lighting - 40% new or altered to be LED, compact fluorescent, or fluorescent
Showerheads and taps to have flow rate<9ltrs/min, 3 Star minimum, Toilets =4ltrs/flush, 3 Star min

Construction and Insulation
Floor - concrete slab on ground -nil
Floor - framed, enclosed subfloor -R0.6 or R1.3 including construction
Wall - external brick veneer R1.16 or R1.7 incl.construction
Wall - external framed walls R1.3 or R1.7incl.construction
Roof - Light roof colour - SA <0.475
Framed roof flat ceiling, flat roof - R1.40+55mm foil backed blanket

Window and Glazed Doors - Aluminium

W1-W3, 0mm eave U7.63, SHGC 0.75 -Clear glass

W4, 0mm eave U7.57, SHGC 0.57 - Toned glass

W5-W7, 450mm eave, U7.63, SHGC 0.75 -Clear glass

W8,W16, 900mm eave, U7.63, SHGC 0.75 -Clear glass

W09, W10, 600mm eave,U7.63, SHGC 0.75 -Clear glass

W11-W13, 600mm eave U7.57, SHGC 0.57 - Toned glass

W14, W15, 600mm eave,U7.63, SHGC 0.75 -Clear glass

W17-W24, U4.48, SHGC 0.46 - Low E glass

W25, 900mm eave, U7.63, SHGC 0.75 -Clear glass

W26, 0mm eave U7.57, SHGC 0.57 - Toned glass

D01-D09
900mm eave U7.63, SHGC 0.75 - Clear glass

Skylights- timber framed
S1,S2- 1.44m2, U 2.9 SHGC 0.456
S3, 0.66m2, U 2.9 SHGC 0.456

Site Specific SSD Designs

Drawn | Checked	SH | SH
Plot Date:	8/04/2025
Project NO.	2024 08
Project Status	DA
Client	Brett and Kammi Beuzeville
Climate Zone	5
Wind Region	TBC
Site:	28 Bassett Street Mona Vale NSW 2103 Australia

DRAWING TITLE :
Plans
Garage Floor Plan

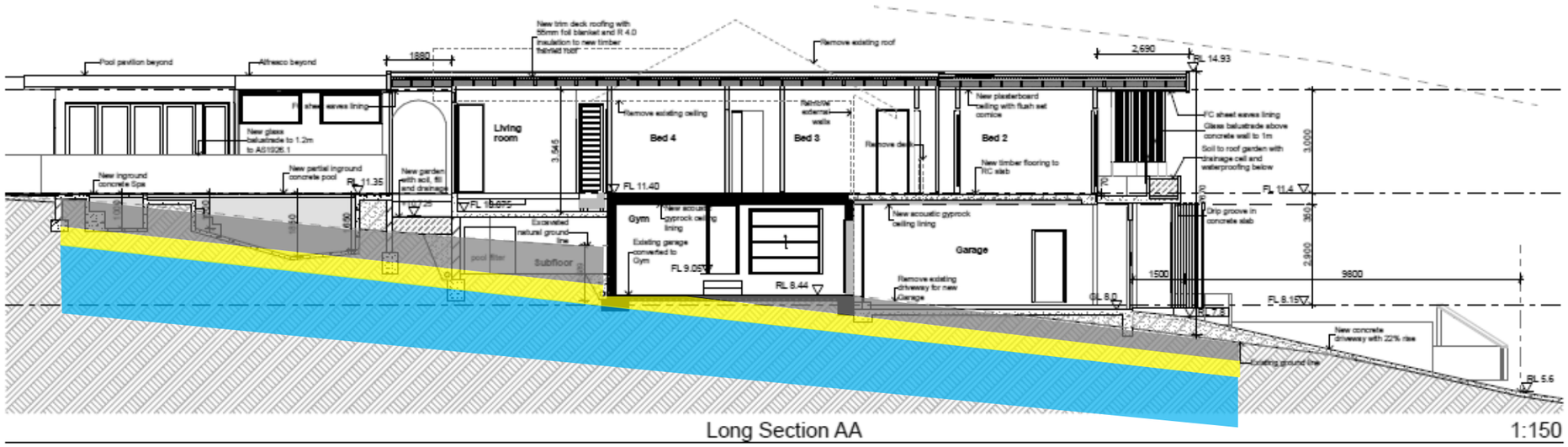
PROJECT NAME :
Beuzeville Home

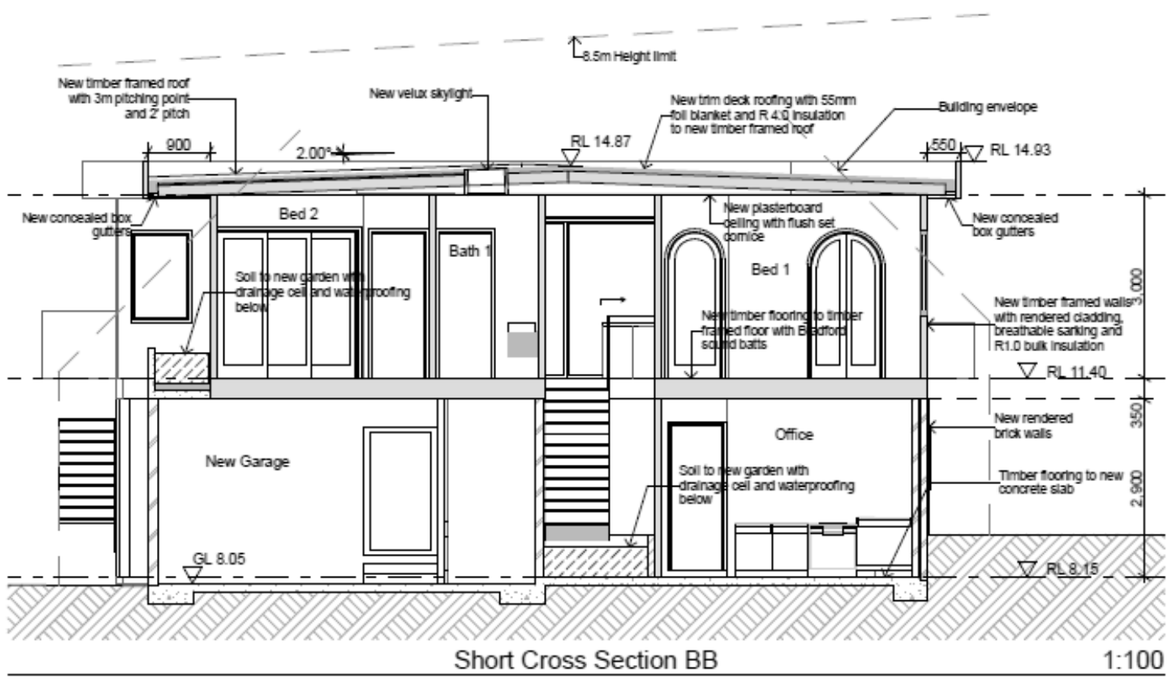
REVISION NO.
DRAWING NO. **DA01**
Plot Date: 8/04/2025

Expected Ground Materials

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials

- Topsoil
- Clay
- Narrabeen Group Rocks – Extremely Low to Very Low Strength Shale or better.





Basix Certificate Commitments
A1790810 - 8/4/25

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S3, 0.66m2, U 2.9 SHGC 0.456

Site Specific SSD Designs

Drawn | Checked	SH | SH
Plot Date:	8/04/2025
Project NO.	2024 08
Project Status	DA
Client	Brett and Kammi Beuzeville
Climate Zone	5
Wind Region	TBC
Site:	28 Bassett Street Mona Vale NSW 2103 Australia

DRAWING TITLE :
Sec
Sections

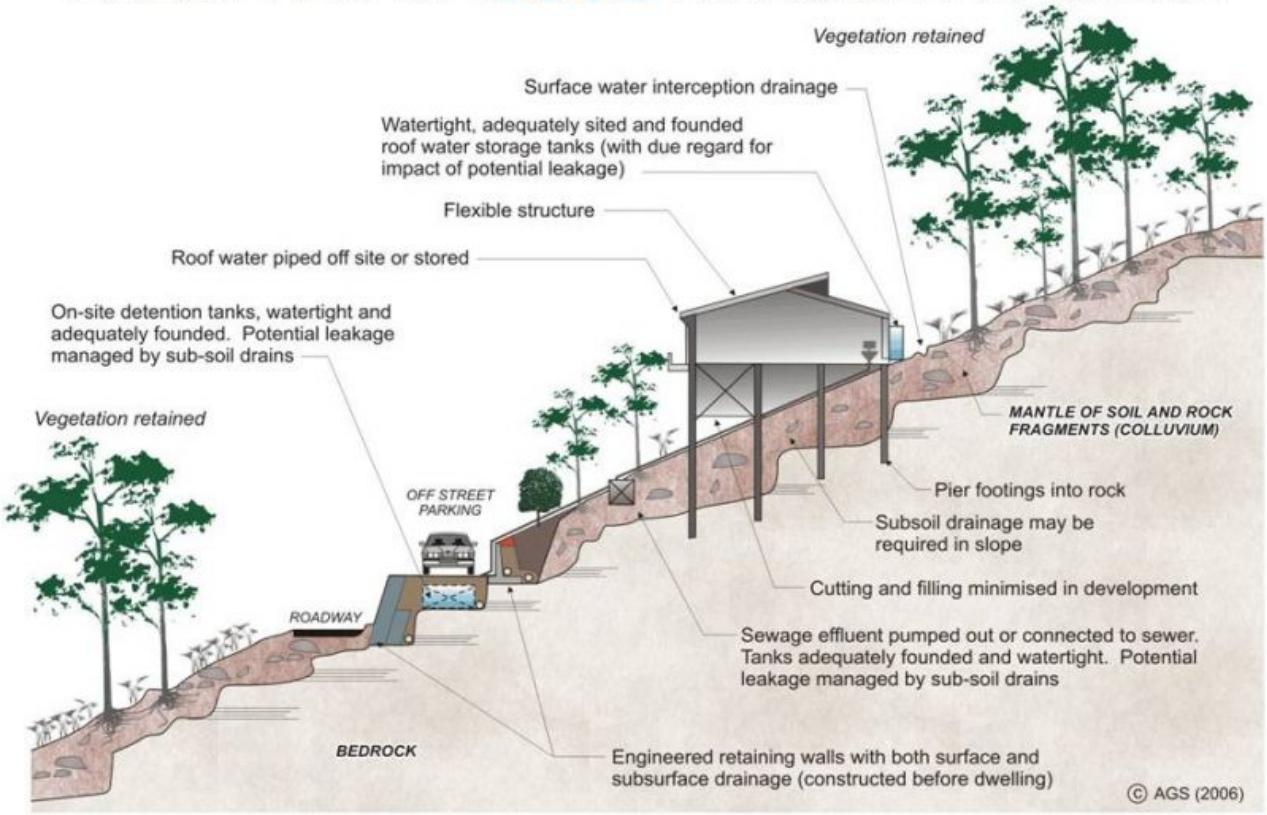
PROJECT NAME :
Beuzeville Home

REVISION NO.

DRAWING NO. **DA03**

Plot Date: 8/04/2025

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE