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

Development Application for _____
Name of Applicant

Address of site 29 Wandeen Road, Clareville

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 31/03/20 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 **29 Wandeen Road, Clareville**

Report Date: 31/03/20

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 29 Wandeen Road, Clareville

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 **29 Wandeen Road, Clareville**

Report Date: 31/03/20

Author: BEN WHITE

Author's Company/Organisation: WHITE GEOTECHNICAL GROUP PTY LTD

Please mark appropriate box

☒ Comprehensive site mapping conducted **03/03/20**
(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 **03/03/20**

☒ 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 **29 Wandeen Rd, Clareville.**

1. Proposed Development

1.1 Extend the existing driveway to form a turning circle by excavating to a maximum depth of ~1.9m. Construct a deck above the driveway extension.

1.2 Extend the second floor of the house.

1.3 Internal and external modifications to the house.

1.4 Construct a pool by excavating to a maximum depth of ~1.5m.

1.5 Details of the proposed development are shown on 36 drawings prepared by Rapid Plans, Project Number RP161118, drawings numbered DA1001 to DA1018, DA2001 to DA2005, DA3001 to DA3003, DA4001 to DA4005 and DA5001 to DA5005, dated 10th February 2020.

2. Site Description

2.1 The site was inspected on the 3rd of March, 2020.

2.2 This residential property is on the high side of the road and encompasses the crest and moderate to steeply graded flanks a hillslope. The natural slope rises from Wandeen Rd at an angle of ~16° before reaching the crest of the hillslope. The slope falls at the S side of the crest at an angle of ~22° towards the S property boundary. The slopes below the N and S boundaries of the property increase in grade.

2.3 At the road frontage a concrete driveway cuts across the slope and leads to a double garage under the house. Low stable sandstone stack rock and keystone retaining walls line the slope either side of the driveway (Photo 1). The part three storey rendered masonry house is supported by masonry walls and a concrete slab

(Photos 2 & 3). The external supporting walls are in good condition and show no significant signs of movement.

A ~0.6m high timber retaining wall supports a cut for the downhill property to the W along part of the W common boundary (Photo 4). A ~1.6m high timber retaining wall supports a cut in the slope next to the house along part of the E common boundary. Where the wall changes direction and extends onto the neighbouring property the supporting soldier post is tilting (Photos 5 & 6) some 10° from vertical. Due to its location the wall poses no significant threat to life or property. See 'Section 16 Remedial Works'.

A cut and fill in the slope provides a near level lawn which extends from the S side of the house (Photo 7). Above the lawn a stable masonry retaining wall up to ~1.4m high supports the cut (Photo 8). The lawn drops away to the S where the fill batter merges into the natural slope (Photos 9 & 10).

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 Auger hole was put down to identify the soil 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. 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 and the results are as follows:

AUGER HOLE 1 (~RL58.4) **–** AH1 (photo 11)

Depth (m)	**Material Encountered**
0.0 to 0.5	**CLAYEY SOIL**, brown and orange, dry.
0.5 to 0.7	**CLAY**, orange, firm to stiff, dry.

End of Hole @ 0.7m in Clay. No watertable 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** (~RL63.0)	**DCP 2** (~RL61.8)	**DCP 3** (~RL61.9)	**DCP 4** (~RL58.4)
0.0 to 0.3	7	11	3	9
0.3 to 0.6	9	20	#	18
0.6 to 0.9	20	10		16
0.9 to 1.2	20	#		22
1.2 to 1.5	12			14
1.5 to 1.8	#			#
1.8 to 2.1				
2.1 to 2.4				
	Refusal @ 1.4m	Refusal @ 0.8m	Refusal @ 0.1m	Refusal @ 1.5m

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

DCP Notes:

DCP1 – Refusal @ 1.4m, DCP bouncing, orange rock fragments on dry tip.
DCP2 – Refusal @ 0.8m, DCP bouncing, white rock fragments on dry tip.
DCP3 – Refusal @ 0.1m, DCP bouncing, orange and white dust on dry tip.
DCP4 – Refusal @ 1.5m, DCP bouncing, orange and red rock fragments on moist tip.

5. Geological Observations/Interpretation

The slope materials are colluvial at the near surface and residual at depth. In the test locations, the ground materials consist of Clayey Soil up to 0.5m deep over Firm to Very Stiff Clay. The clays merge into the weathered zone of the under lying rocks at depths of between 0.1m to 1.5m below the current surface. The weathered zone of the underlying rock is interpreted as Very Low to Low Strength Rock. 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 in the rock.

Due to the slope and elevation of the block, the water table in the location is expected to be many metres below the base of the proposed excavations.

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 beside the property. The moderate to steeply graded slope that falls across the property and continues above and below is a potential hazard (**Hazard One**). The proposed excavations for the pool and driveway turning circle collapsing onto the worksite and impacting the neighbouring properties are a potential hazard (**Hazard Two**). The vibrations produced during the proposed excavations impacting on the subject house and the neighbouring properties is a potential hazard (**Hazard Three**).

Geotechnical Hazards and Risk Analysis - Risk Analysis Summary

HAZARDS	Hazard One	Hazard Two	Hazard Three
TYPE	The moderate to steep slope that falls across the property and continues above and below failing and impacting on the property.	The proposed excavations collapsing onto the worksite and impacting the neighbouring properties during the excavation process.	The vibrations produced during the proposed excavations impacting on the subject house and neighbouring properties.
LIKELIHOOD	'Unlikely' (10^{-4})	'Possible' (10^{-3})	'Possible' (10^{-3})
CONSEQUENCES TO PROPERTY	'Medium' (15%)	'Medium' (15%)	'Medium' (15%)
RISK TO PROPERTY	'Low' (2×10^{-5})	'Moderate' (2×10^{-4})	'Moderate' (2×10^{-4})
RISK TO LIFE	8.3×10^{-7}/annum	8.3×10^{-6}/annum	8.3×10^{-7}/annum
COMMENTS	This level of risk is 'ACCEPTABLE'.	This level of risk to life and property is 'UNACCEPTABLE'. To move the risk to 'ACCEPTABLE' levels, the recommendations in **Section 13** are to be followed.	This level of risk to property is 'UNACCEPTABLE'. To move risk to 'ACCEPTABLE' levels the recommendations in **Sections 11 & 12** 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 Wandeen Road. Stormwater from the proposed developments 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 ~1.9m is required to construct the proposed driveway turning circle. The excavation is interpreted to be through clayey soil and clay, with Very Low to Low Strength rock expected at a depth of ~1.4m. A second excavation to a maximum depth of ~1.5m is required to construct the proposed pool. The excavation for the pool is interpreted to be through clayey soil and clay, with Very Low to Low Strength Rock expected at depths of ~0.8m to ~1.5m. Excavations through soil, clay and rock up to Low Strength can be carried out with an excavator and bucket. If Medium Strength Rock is encountered it will require grinding or rock sawing and breaking.

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 or infrastructure damage.

If Medium Strength Rock is encountered, excavations through Medium Strength Rock or better should be carried out to minimise the potential to cause vibration damage to structures on the subject house and neighbouring properties to the W and E. 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 10mm/sec at the subject house and property boundaries. Vibration monitoring will be required to verify this is achieved.

If a milling head is used to grind the rock, vibration monitoring will not be required. Alternatively, if rock sawing is carried out around the perimeter of the excavation boundaries in not less than 1.0m lifts, a rock hammer up to 300kg could be used to break the rock without vibration monitoring. Peak particle velocity will be less than 10mm/sec at the subject house and property boundaries using this method provided the saw cuts are kept well below the rock to broken.

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

13. Excavation Support Requirements

Bulk Excavation for Driveway Turning Circle

An excavation to a maximum depth of ~1.9m is required for the driveway turning circle.

Allowing 0.5m for backfill and drainage, the excavation is set back ~1.6m from the E common boundary and ~1.4m from the timber retaining wall near the E boundary. The E boundary and retaining wall will be outside the zone of influence of the excavation. In this instance, the zone of influence is the area above a theoretical 45° line from the top of Very Low to Low Strength Rock towards the surrounding structures and boundaries.

The soil portion of the proposed excavation is to be battered temporarily at 1.0 Vertical to 2.0 Horizontal (26°) until the retaining walls are in place. Excavations through clay are to be battered at 1.0 Vertical to 1.0 Horizontal (45°). Very Low Strength Rock or better will stand at near-vertical angles for short periods of time until the retaining walls are installed, provided the cut batters are kept from becoming saturated.

Bulk Excavation for Pool

An excavation to a maximum depth of ~1.5m is required for the proposed pool.

The excavation is set back ~1.1m from the W common boundary, but the slope drops away to the W, therefore the W boundary will be outside the zone of influence of the excavation.

In this instance, the zone of influence is the area above a theoretical 45° line from the base of the excavation or the top of Very Low to Low Strength Rock, whichever comes first, towards the surrounding structures and boundaries.

The excavation is 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. If the cut batters remain unsupported for more than a few days before the pool construction commences, they are to be temporarily supported with typical pool shoring, such as sacrificial form ply.

Advice Applying to All 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 materials and labour to construct the retaining walls and pool structure are to be organised so on completion of the excavation 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. If the retaining walls are not constructed within a few days of the excavation being completed temporary shoring will be required.

All excavation spoil is to be removed from site or be supported by engineered retaining walls.

14. 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 IS ON THE NEXT PAGE

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, Soil and Clay	20	0.40	0.55
Rock up to Low Strength	24	0.20	0.34

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.

15. Foundations

The driveway turning circle is cut into the slope and may be supported directly off the exposed soil, clay or rock. Where the foundation material across the structure changes, expansion joints are to be installed to separate the different foundation materials and to accommodate minor differential movement. Alternatively, the driveway extension may be supported on piers supported on the underlying Very Low to Low Strength Rock. A maximum allowable

bearing pressure of 100kPa can be assumed for footings on soil, 200kPa for footings on clay and 600kPa for footings on Very Low to Low Strength Rock.

The majority of the pool is expected to be seated in Very Low to Low Strength Rock. Where the slope drops away, piers supported on Very Low to Low Strength Rock will be required to maintain a uniform bearing material across the structure.

NOTE: If the contractor is unsure of the footing material required it is more cost effective to get the geotechnical professional 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. Remedial Works

The timber retaining wall (Photo 5 & 6) is to be monitored by the owners on an annual basis or after heavy prolonged rainfall events, whichever occurs first. A photographic record these inspections is to be kept. Should further movement occur the wall is to be remediated so it meets current engineering standards. We can carry out these inspections upon request.

17. Inspections

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 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 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: AH1 – Downhole is from top to bottom

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.

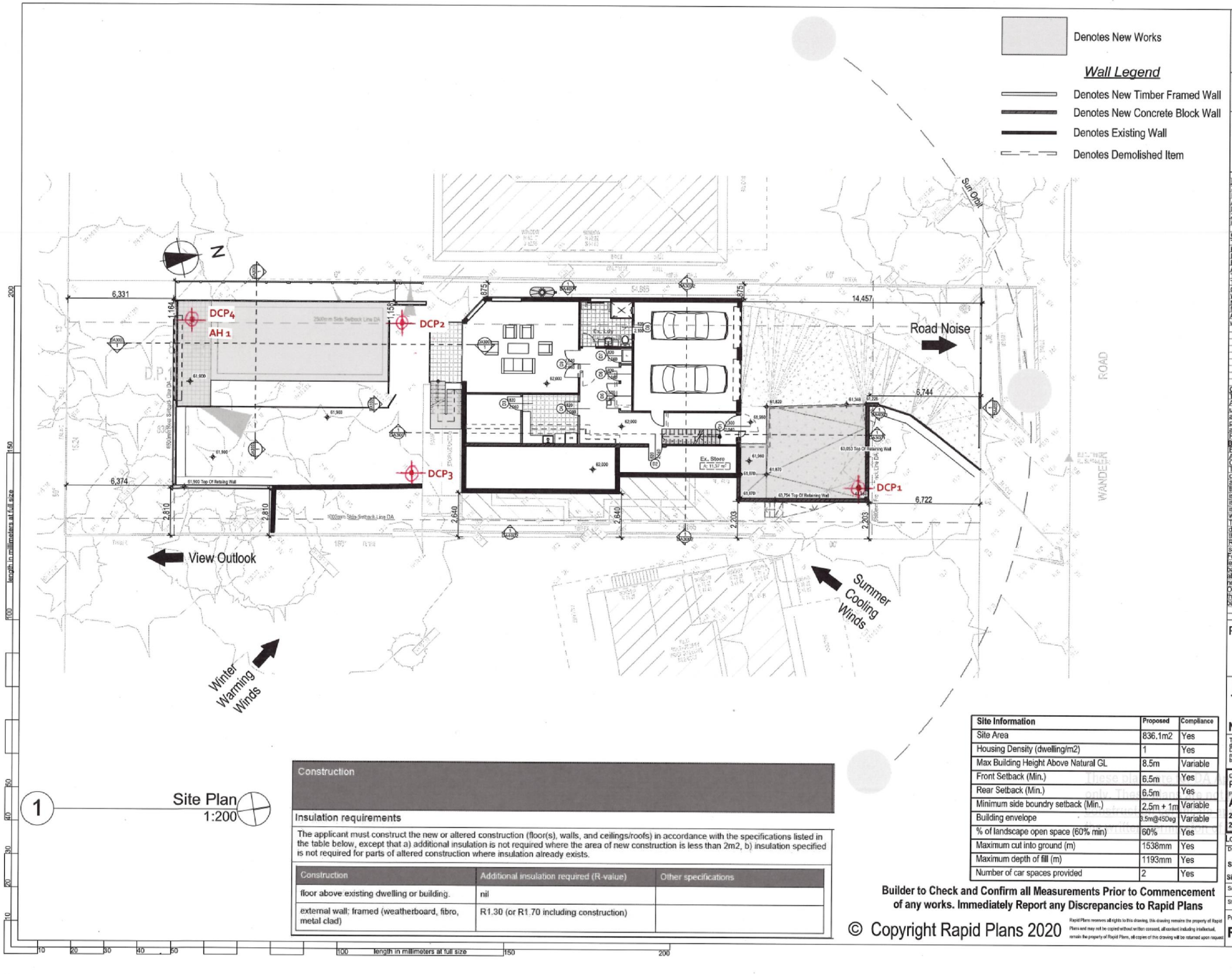
- The report addresses issues relating to your specific design and site. If the proposed project design changes, aspects of the report may no longer apply. Contact White Geotechnical if this occurs.

- 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



1 Site Plan 1:200

Construction
Insulation requirements

The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists.

Construction	Additional insulation required (R-value)	Other specifications
floor above existing dwelling or building.	nil	
external wall: framed (weatherboard, fibro, metal clad)	R1.30 (or R1.70 including construction)	

Site Information	Proposed	Compliance
Site Area	836.1m2	Yes
Housing Density (dwelling/m2)	1	Yes
Max Building Height Above Natural GL	8.5m	Variable
Front Setback (Min.)	6.5m	Yes
Rear Setback (Min.)	6.5m	Yes
Minimum side boundry setback (Min.)	2.5m + 1m	Variable
Building envelope	3.5m@45Deg	Variable
% of landscape open space (60% min)	60%	Yes
Maximum cut into ground (m)	1538mm	Yes
Maximum depth of **fill** (m)	1193mm	Yes
Number of car spaces provided	2	Yes

Builder to Check and Confirm all Measurements Prior to Commencement of any works. Immediately Report any Discrepancies to Rapid Plans

Rapid Plans
Building Design and Architectural Drafting
Rapid Plans www.rapidplans.com.au
PO Box 6193 Frenchs Forest DC NSW 2086
Fax : (02) 9905-8865
Mobile: 0414-945-024
Email : gregg@rapidplans.com.au
bda BUILDING DESIGNERS AUSTRALIA NSW

NOTES
29 Wandeen Road,Clareville is zoned E4 - Environmental Living
All Plans to be read in conjunction with Basix Certificate
New Works to be constructed shown in Shaded/Blue
29 Wandeen Road,Clareville is not considered a heritage item

Construction
Timber Frame, Timber Frame Walls
Roof Sheet Metal to have Nil Insulation
Insulation to External Timber Frame Walls R1.70
Refer to Engineers drawings for structural details
All work to Engineers Specification and BCA
Timber framing to BCA and AS 1684
Termite Management to BCA and AS 3660.1
Glazing to BCA and AS01288-2047
Waterproofing to BCA and AS 3740
New Lighting to have minimum of 40% compact fluorescent lamps
All workmanship and materials shall be in accordance with the requirements of Building Codes of Australia.

Certifying
The DA Application Only plans are for DA Application purposes only. These plans are not to be used for the construction certificate application by any Certifying Authority without the written permission of Rapid Plans or the supply of authorised Construction Certificate drawings by Rapid Plans

Basix
Basix Certificate Number A369348
All Plans to be read in conjunction with Basix Certificate
The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists.
The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below.
Relevant overshadowing specifications must be satisfied for each window and glazed door.
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.
Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door.

Project North

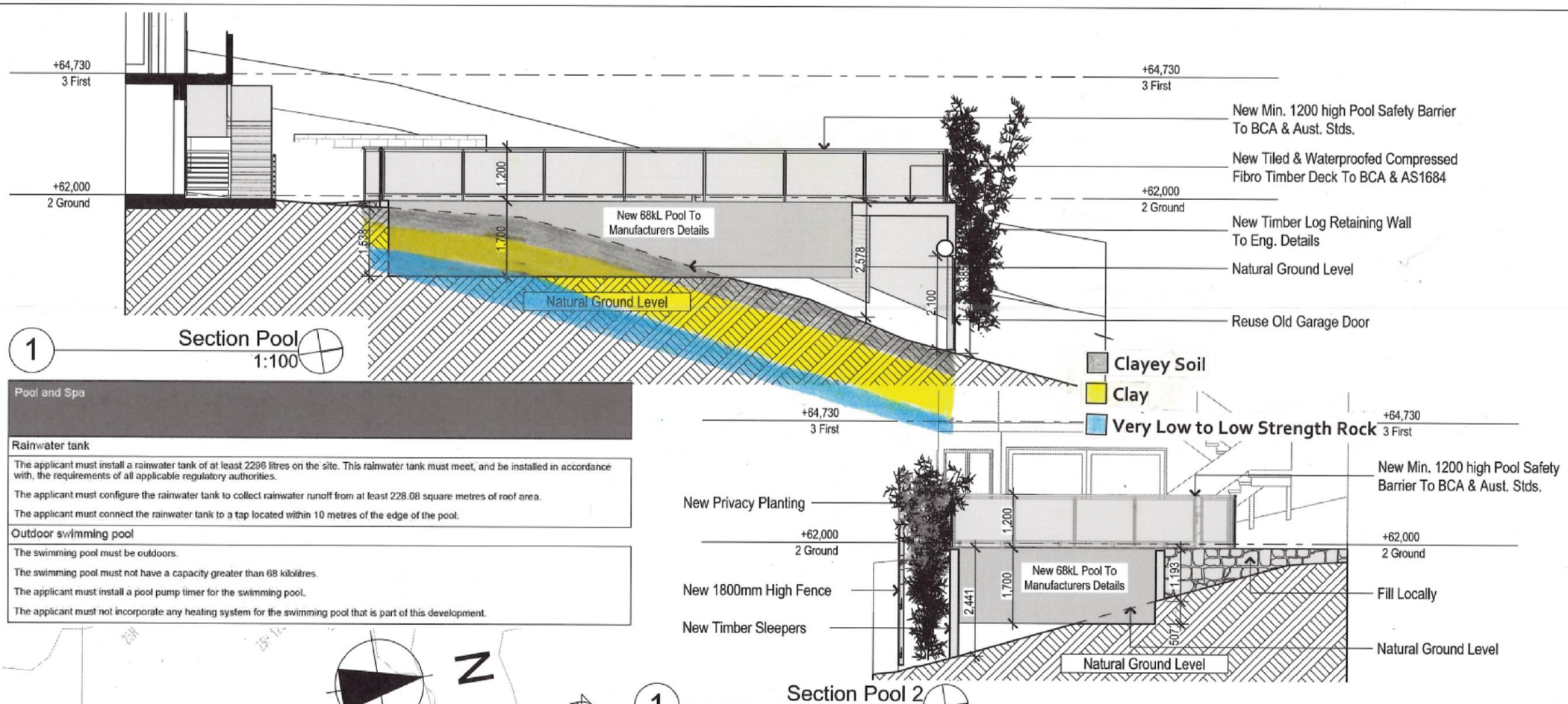
DA APPLICATION ONLY
NOT FOR CONSTRUCTION

The builder shall check and verify all dimensions and verify all errors and omissions to the Designer. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Designer for construction.

Client
Peter and Trish Quirk
Project Name
Alterations & Additions
29 Wandeen Road, Clareville 2107
Lot 89 D.P. 13760
Drawing Title:
Site Plans - Site Plan
Site Plan

Scale: A3 as noted	Date: 10/02/20
Status: DA	Checked By: GBJ
Project No: **RP161118**	Drawing No. **DA1003**

TYPE SECTION – Diagrammatical Interpretation of expected Ground Materials



Pool and Spa

Rainwater tank

The applicant must install a rainwater tank of at least 2296 litres on the site. This rainwater tank must meet, and be installed in accordance with, the requirements of all applicable regulatory authorities.

The applicant must configure the rainwater tank to collect rainwater runoff from at least 228.08 square metres of roof area.

The applicant must connect the rainwater tank to a tap located within 10 metres of the edge of the pool.

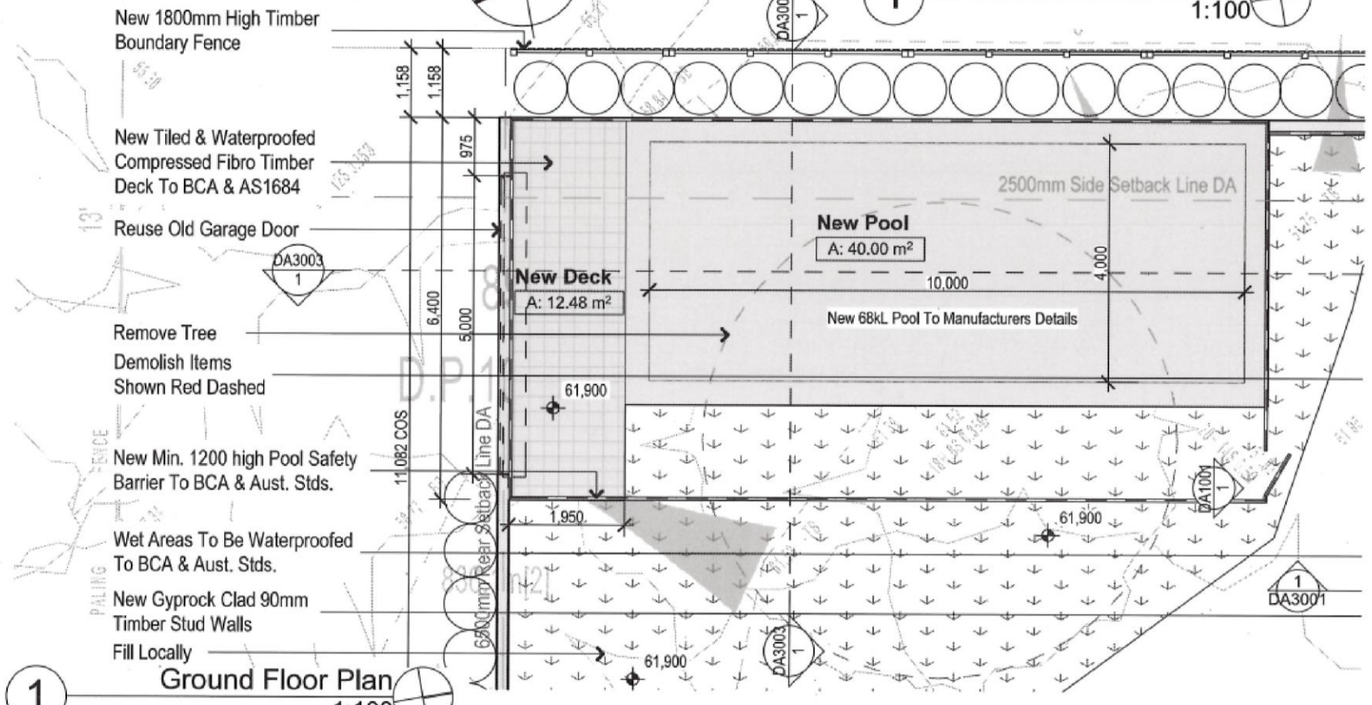
Outdoor swimming pool

The swimming pool must be outdoors.

The swimming pool must not have a capacity greater than 68 kilolitres.

The applicant must install a pool pump timer for the swimming pool.

The applicant must not incorporate any heating system for the swimming pool that is part of this development.



Denotes New Works

Wall Legend

Denotes New Timber Framed Wall/Floor

Denotes Existing Wall/Floor

Denotes Demolished Item

Site Information	Proposed	Compliance
Site Area	836.1m2	Yes
Housing Density (dwelling/m2)	1	Yes
Max Building Height Above Natural GL	8.5m	Variable
Front Setback (Min.)	6.5m	Yes
Rear Setback (Min.)	6.5m	Yes
Minimum side boundry setback (Min.)	2.5m + 1m	Variable
Building envelope	3.5m@45Deg	Variable
% of landscape open space (60% min)	60%	Yes
Maximum cut into ground (m)	1538mm	Yes
Maximum depth of fill (m)	1193mm	Yes
Number of car spaces provided	2	Yes

Builder to Check and Confirm all Measurements Prior to Commencement of any works. Immediately Report any Discrepancies to Rapid Plans

Rapid Plans
Building Design and Architectural Drafting

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bda BUILDING DESIGNERS AUSTRALIA NSW

NOTES

29 Wandeen Road,Clareville is zoned E4 - Environmental Living
All Plans to be read in conjunction with Basix Certificate
New Works to be constructed shown in Shaded/Blue
29 Wandeen Road,Clareville is not considered a heritage item

Construction

Timber Frame, Timber Frame Walls
Roof Sheet Metal to have Nil Insulation
Insulation to External Timber Frame Walls R1.70
Refer to Engineers drawings for structural details
All work to Engineers Specification and BCA
Timber framing to BCA and AS 1684
Termite Management to BCA and AS 3660.1
Glazing to BCA and AS01288-2047
Waterproofing to BCA and AS 3740
New Lighting to have minimum of 40% compact fluorescent lamps
All workmanship and materials shall be in accordance with the requirements of Building Codes of Australia.

Certifying

The DA Application Only plans are for DA Application purposes only. These plans are not to be used for the construction certificate application by any Certifying Authority without the written permission of Rapid Plans or the supply of authorised Construction Certificate drawings by Rapid Plans

Basix

Basix Certificate Number A369348
All Plans to be read in conjunction with Basix Certificate
The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that a) additional insulation is not required where the area of new construction is less than 2m2, b) insulation specified is not required for parts of altered construction where insulation already exists.
The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below.
Relevant overshadowing specifications must be satisfied for each window and glazed door.
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.
Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door.

Project North

DA APPLICATION ONLY

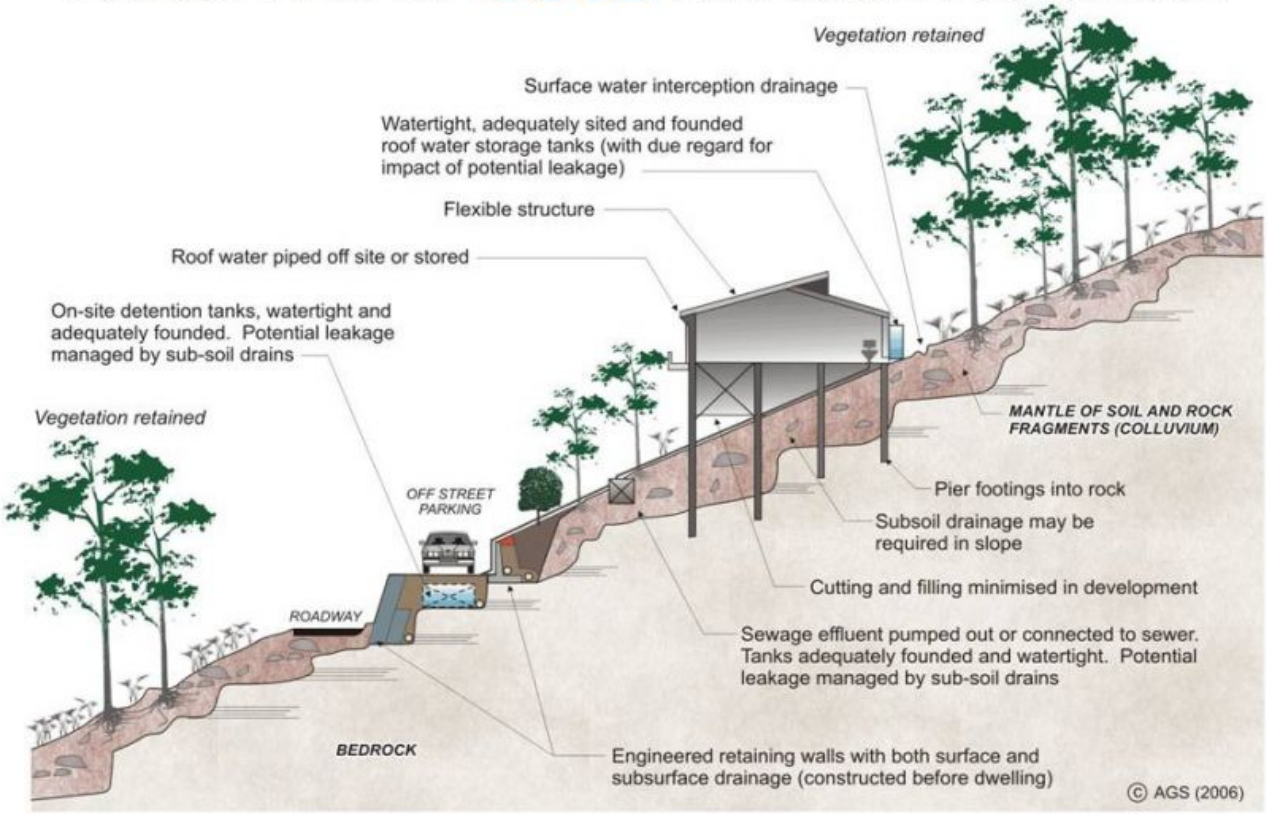
NOT FOR CONSTRUCTION

The builder shall check and verify all dimensions and verify all errors and omissions to the Designer. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Designer for construction.

Client
Peter and Trish Quirk
Project Name
Alterations & Additions
29 Wandeen Road, Clareville 2107
Lot 89 D.P. 13760
Drawing Title:
Sections - Section Pool
Section Pool, Section Pool 2, Ground Floor Plan

Scale: A3 as noted	Date: 10/02/20
Status: DA	Checked By: GBJ
Project No: **RP161118**	Drawing No. **DA3003**

EXAMPLES OF **GOOD** HILLSIDE PRACTICE



EXAMPLES OF **POOR** HILLSIDE PRACTICE