

8.11.2024
Report No. 24AWG1627

Victory Lutheran College
28 Drage Road
Wodonga, Vic, 3690

**Re: Site Classification for proposed buildings
Victory Lutheran College
Wodonga, Vic, 3690**

1. INTRODUCTION/DESCRIPTION

In accordance with your request on the 30th of October 2024, an investigation was conducted by AWG to determine the geotechnical conditions, to provide a site classification and provide parameters for the footing system design. The site is essentially flat with good surface drainage.

2. FIELD PROCEDURE

On the 6th of November an AWG representative completed six boreholes to assess the subsurface conditions.

The materials encountered during the field investigation are presented in the attached borehole logs and in general consist of clays of medium-high plasticity (CL-CH). Soil moisture conditions are considered consistent with the seasonal variation of the area and time of testing.

Groundwater was not encountered during the investigation.

A classification explanation sheet is attached outlining the terms and symbols used in the preparation of this report.

3. SITE CLASSIFICATION

Based on the results of the investigation the site has been classified as **Class "P" - Problem site** in accordance with AS 2870-2011 Residential Slabs and Footings - Site Classification by surface Movement Calculation.

4. RECOMMENDATIONS

The fill material may be removed and replaced as controlled fill and tested and certified as such. If this is procedure is adopted the footings, designed as **Class "H1-D"**, may be founded in the fill.

Alternately the footings may be designed for a **Class "H1-D"** site classification with the external beams and all strengthening beams and crossbeams founded 200mm below the depth of the fill material (see borelog for fill material depth).

The footings for a waffle pod slab may be designed for a **Class "H1-D"** site classification with the external beams founded a minimum of 200mm below the depth of the fill material.

If piers or stumps are used on this site, they should be founded at a minimum of 300mm below the depth of the fill material.

If strip footings are used on this site, they should be founded at a minimum of 300mm below the depth of the fill material.

The site should be stripped of all vegetation and topsoil, with any areas of soft loose or wet material selectively excavated to provide a firm, working base.

The allowable bearing capacity for this site is 125 kPa beneath the fill material.

The allowable end bearing capacity for this site is 250 kPa beneath the fill material.

The wind classification for this site is **N2** in accordance with AS 4055 Wind Loads for Housing.

Footings are to be inspected and the applicable bearing capacity confirmed.

5. SITE COMMENTS

If a cut and fill operation is to be performed onsite, it is recommended that any fill be placed under controlled conditions to allow the footings to be placed in the fill.

The planting of trees close to the proposed building should be avoided. Minimum distance from the footing system should be equivalent/equal to the trees mature height.

If existing trees onsite are to remain, additional measures may be required to mitigate damage to the stability of the soils adjacent to the footing system.

The existence of trees (Y_t) may be used as a factor when determining the soil classification.

6. FILL MATERIAL

Some building sites may contain areas of fill, which cannot be visually identified at the time of investigation. It is also often difficult to determine fill from natural insitu materials during a site investigation borehole. If fill is encountered during excavation of footings, and it is not described in the field investigation log, further advice must be obtained.

Where compacted fill is encountered, the amount of compacted fill allowable is up to 800mm of "sand" fill or 400mm of "other" fill. AS 2870 - 2011 provides details of additional construction requirements for controlled fill sites.

7. GENERAL NOTE

The following general measures are recommended in reducing the potential of future building damage:

- Maintain a reasonable distance from building when planting trees or damaging vegetation.
- Monitor watering systems and avoid excessive garden watering.
- Monitor underground services and attend any damage as soon as required.

8. PLAN



9. APPLICATION

This site classification has been prepared specifically for the above project and any data or opinions that are given should not be used out of context to any other job or purpose without analysis and overview from the undersigned. No other investigation work was provided that is not previously described.

This site classification has been based upon field and sample analysis from the locations indicated, the nature and continuity below borehole depth is inferred and it must be considered that further investigation may be required to assess actual conditions of subsurface undisturbed soils.

This report has been prepared to the named client for their use. This report is not intended for any other party and no liability is accepted if this report is passed to another party.

During excavation it is suggested that footings are to be inspected carefully and if any irregularities occur further advice shall be sought.

Albury Wodonga Geotechnical

Prepared by

Jesse Hill

Checked by

Peter Vella

APPENDIX A

SITE CLASSIFICATION EXPLANATIONS:

Class	Expected Surface Movement (Ys)	Explanation
A	0mm	Includes many sand, gravel and rock sites with little/no clays. These sites have little/no expected movement and as a result zero moisture variation.
S	0 - 20mm	Slightly reactive sites which exhibit only small movements with moisture variation.
M	20 - 40mm	Moderately reactive sites exhibit moderate amounts of movement with moisture variation. These sites commonly include red/brown silty soils, some sandy clays and loamy soils.
H1	40 - 60mm	Highly reactive sites exhibit high amounts of movement with moisture variation.
H2	60 - 75mm	Highly reactive sites exhibit high amounts of movement with moisture variation.
E	>75mm	Extremely reactive sites which exhibit greater than 75mm of surface movement. Typically, these sites include deep reactive clays, such as black and dark brown soils. These sites typically demand quite expensive footing systems.

In areas of deep-seated moisture changes, the site classification shall be modified by the addition of a “-D”.

As indicated previously, the Site Classification must consider many aspects of the site, not just the reactivity of the soil. P sites are those that include other factors that need to be brought to the attention of the owner, builder and footing designer. A “P” classification does not indicate a specific Ys value and is described as a “Problem” site.

The reasons for a P classification include:

- | | |
|----------|---|
| P | <ul style="list-style-type: none"> • Clay fill greater than 400mm or Sand fill greater than 800mm • Growth &/or Removal of Trees will cause Abnormal moisture conditions in the subsurface soils: • Unusually high moisture conditions caused by water flow, ponds, dams etc: • Sites with Loose fill which can be either “controlled” or “uncontrolled”. The P Classification depends upon the depth and type of fill: • Sites with poor bearing capacity, soft soils, or soils which are prone to collapse: • Sites prone to mine subsidence, land slip, piping or coastal erosion: • Sites which for one reason or another cannot be classified as normal sites |
|----------|---|

Albury Wodonga Geotechnical

SOILS ENGINEERING LABORATORY

Borehole No: 1
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**

Date Logged: **6.11.2024**

Investigation For: **Site Classification**

Logged By: **DNH**

Location: **Victory Lutheran College, Wodonga**

Checked By: **JH**

Borehole/Trench Location: **See GPS Plan**

Date: 7.11.2024

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS			
700	Silty Sandy CLAY, orange-brown Fine to coarse grained Medium-high plasticity	Moist	Stiff			FILL			
	1200		Silty Sandy CLAY, orange & red-brown Fine to medium grained High plasticity			Very Stiff			
3000		Silty CLAY, red & grey-brown Fine to medium grained High plasticity							
	Bore Terminated at 3.0m								

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:

-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

---W---

- Water Level

D

-Disturbed Sample

<-----

- Water Inflow

U

-Undisturbed Sample

SOILS ENGINEERING LABORATORY

Borehole No: 2
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**

Investigation For: **Site Classification**

Location: **Victory Lutheran College, Wodonga**

Borehole/Trench Location: **See GPS Plan**

Date Logged: **6.11.2024**

Logged By: **DNH**

Checked By: **JH**

Date: 7.11.2024

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS					
1100	Silty Sandy CLAY, red-brown Fine to coarse grained Medium-high plasticity	Moist	Stiff			FILL					

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:

-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

----W---- - Water Level

<----- - Water Inflow

D -Disturbed Sample

U -Undisturbed Sample

Albury Wodonga Geotechnical

SOILS ENGINEERING LABORATORY

Borehole No: 3
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**
Investigation For: **Site Classification**
Location: **Victory Lutheran College, Wodonga**
Borehole/Trench Location: **See GPS Plan**

Date Logged: **6.11.2024**
Logged By: **DNH**
Checked By: **JH**
Date: **7.11.2024**

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS
1100	Silty Sandy CLAY, orange-brown Fine to coarse grained Medium-high plasticity	Moist	Stiff			FILL
1800	Silty CLAY, grey & orange-brown Fine to medium grained High plasticity		Very Stiff			
3000	Silty CLAY, yellow & orange-brown Fine to medium grained High plasticity					
	Bore Terminated at 3.0m					

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:

-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

----W----- - Water Level
<----- - Water Inflow

D - Disturbed Sample
U - Undisturbed Sample

Albury Wodonga Geotechnical

SOILS ENGINEERING LABORATORY

Borehole No: 4
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**

Date Logged: **6.11.2024**

Investigation For: **Site Classification**

Logged By: **DNH**

Location: **Victory Lutheran College, Wodonga**

Checked By: **JH**

Borehole/Trench Location: **See GPS Plan**

Date: 7.11.2024

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS				
700	Silty Sandy CLAY, orange-brown Fine to coarse grained Medium-high plasticity	Moist	Stiff			FILL				
1200	Silty Sandy CLAY, orange & red-brown Fine to medium grained High plasticity		Very Stiff							
3000	Silty CLAY, orange & grey-brown Fine to medium grained High plasticity									

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:

-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

---W---

- Water Level

D

-Disturbed Sample

<-----

- Water Inflow

U

-Undisturbed Sample

SOILS ENGINEERING LABORATORY

Borehole No: 5
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**

Date Logged: **6.11.2024**

Investigation For: **Site Classification**

Logged By: **DNH**

Location: **Victory Lutheran College, Wodonga**

Checked By: **JH**

Borehole/Trench Location: **See GPS Plan**

Date: 7.11.2024

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS	
300	Gravelly SAND, grey-brown Fine to coarse grained Low plasticity	Moist	Dense			FILL	
	900		Very Stiff				
							1200
1900							
	3000						
							Bore Terminated at 3.0m

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:

-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

----W---- - Water Level
 <----- - Water Inflow

D -Disturbed Sample
U -Undisturbed Sample

Albury Wodonga Geotechnical

SOILS ENGINEERING LABORATORY

Borehole No: 6
Page: 1 of 1

INVESTIGATION LOG

REPORT NO: 24AWG1627

Client: **Victory Lutheran College**

Date Logged: 6.11.2024

Investigation For: **Site Classification**

Logged By: **DNH**

Location: **Victory Lutheran College, Wodonga**

Checked By: **JH**

Borehole/Trench Location: **See GPS Plan**

Date: 7.11.2024

Method: ☐ Hand Auger ☐ Backhoe ☒ Drill Rig ☐ Other

Alignment: **90°**

DEPTH mm	MATERIAL DESCRIPTION & CLASSIFICATION	MOISTURE CONDITION	CONSIST. DENSITY INDEX	VS kPa	SAMPLE TAKEN	REMARKS
500	Silty Sandy CLAY, orange-brown Fine to medium grained Medium-high plasticity	Moist	Stiff			FILL
	Silty CLAY, grey & yellow-brown Fine to medium grained High plasticity		Very Stiff			
	Silty CLAY, yellow & grey-brown Fine to medium grained High plasticity					
	Silty CLAY, orange & grey-brown Fine to medium grained High plasticity					
1900						
3000						
Bore Terminated at 3.0m						

DRAINAGE: -General Good ☒ Fair ☐ Poor ☐ Free Water ☐ Swampy ☐ Subject to Flooding ☐

TOPOGRAPHY:
-General Flat ☒ Undulating ☐ Hilly ☐

-Local Flat ☒ Moderate Slope ☐ Dip ☐ Valley ☐ High Flat ☐ Low Flat ☐ Crest ☐ Steep Slope ☐

----W---- - Water Level
 <----- - Water Inflow

D -Disturbed Sample
U -Undisturbed Sample