Inland Geotechnical
6 Jones St (PO Box 6118)
Wagga Wagga NSW 2650
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www.inlandgeo.com.au

12 March 2025

Attention: Glenn Braganza
Celestial Cluster Pty Ltd
20 Platinum Court
Thurgoona NSW 2640
glennb@celestialcluster.com.au
BY EMAIL

Dear Glenn

Re: Geotechnical Interpretive Report – Thurgoona Development located 39 Ceres Drive and 20, 28, 32, 40 & 43 Platinum Court Thurgoona NSW 2640

I refer to the email request from Brent Stone of Central Steel Build on behalf of yourself to compile a geotechnical interpretive report for multiple proposed new commercial structures as part of the Thurgoona Development located at 39 Ceres Drive and 20, 28, 32, 40 & 43 Platinum Court Thurgoona NSW.

The intended recipient of this report is yourself for use in assessing foundation material for the preliminary design of foundations for the structural and civil work associated with the proposed new commercial structures to be constructed on site. Foundation material is the substrate that supports footings and slabs. It is assumed that third parties will rely on this report for preliminary foundation design, however Inland Geotechnical is required to be consulted if the report is to be used for any other purpose.

Objective and agreed scope

The objective of this geotechnical interpretive report is to document the expressions of professional opinion around the geotechnical characteristics of the site relevant to the project derived from the consideration of relevant available facts, interpretations and analysis and judgement. Geotechnical interpretation is a continuous process and will be updated as more information about the project and ground conditions becomes available.

The agreed scope of works included:

- Where available, review plans and other general related documents provided to us to gain a comprehensive understanding of the site.
- Provide geotechnical interpretation around:
    - Allowable bearing pressure of foundation material.
    - Unit weight.
    - Cohesion (effective and undrained) of foundation material.
    - Friction angle of foundation material.

    - Skin friction/shaft adhesion of foundation material.
- Supply a geotechnical interpretive report by reference to the Australian Standard 1726 (2017).

Reference to the data upon which the interpretation has been relied upon

- Geotechnical Data Report (Report 287).
- AS4678 (2002) Earth-retaining structures. (effective internal friction angles and characteristic effective cohesion).
- Look, B. G. (2014). Handbook of Investigation and Design Tables. (2nd Ed). CRC Press. (undrained cohesion, shaft adhesion, skin friction).
- Standards Australia (2009). Piling – Design and Installation (AS2159).
- Stockwell, M.J. (1977), Determination of Allowable Bearing Pressures Under Small Structures, New Zealand Engineering, Vol. 32, No. 6, Jun 1977: 132-135.

An interpretation of the site geology and the development of the geotechnical model

The site geology generally comprised of the following:

- A thin dry pale brown low plasticity clayey sand with medium to coarse gravels uncontrolled fill.
- An alluvial dry, brown low plasticity stiff silty clay.
- An alluvial dry yellow-brown medium plasticity stiff to very stiff clay trace silt.
- An alluvial moist dark yellow-brown medium to high plasticity stiff to very stiff clay.
- An alluvial moist dark brown medium to high plasticity very stiff clay.
- An alluvial moist brown-grey medium to high plasticity stiff to very stiff clay
- An alluvial moist brown-yellow mottled orange and pale grey low to medium to high plasticity stiff silty clay with trace mica and sand.
- An alluvial moist brown-yellow low to medium plasticity stiff to very stiff sandy clay (BH03 only).

Groundwater was not encountered during the investigation. Bedrock was not encountered to the investigated depth of 5m bgl and is expected to be encountered during construction.

A summary of the geotechnical properties of the ground applicable to the project

Based on laboratory results of this project the following interpretations can be made.

- All topsoil and uncontrolled fill materials are unsuitable to be used as foundation material.
- The underlying alluvial clay material is suitable to be used as foundation material.

An engineering interpretation of the implications of the ground conditions for the project

Based on the field assessment, laboratory data, data interpretation, and assumptions therein, the following preliminary geotechnical parameters can be provided for soils in the site geology.

Strata	Allowable Bearing Pressure (SF3)	Ultimate End Bearing	Unit Weight, γ	Undrained cohesion, cu	Effective cohesion, c'	Effective friction Angle, ϕ'	Shaft Adhesion*
	(kPa)	(kPa)	(kN/m3)	(kPa)	(kPa)	(deg)	(kPa)
Clay – Firm to stiff	68-100	-	18	25-50	0-5	17-25	-
CLAY – Stiff	100-200	300-600	18	50	0-5	17-25	15
CLAY – Very stiff	200	600	19	100	0-5	17-25	30
Sandy CLAY – Stiff to very stiff	200	600	20	50-100	0-5	20-25	15-30

*Assumes bored piers and fissured soils; values are for compression, a reduction factor of 0.5 is recommended for tension. The top 1m shall be ignored. Surface desiccation cracking evident during site visit.

Piled footings

We recommend that all piles are designed in accordance with Australian Standard 2159 (2009) *Piling – Design and installation.* In accordance with AS 2159 piles are to be proportioned such that the pile design geotechnical strength ($R_{d,g}$) is not less than the pile design action effect (E_d). Design geotechnical strength is calculated as the design ultimate geotechnical strength ($R_{d,ug}$) multiplied by the geotechnical strength reduction factor (ϕ_g).

The geotechnical strength reduction factor is determined by the following:

$$\phi_g = \phi_{gb} + (\phi_{tf} - \phi_{gb})K \geq \phi_{gb}$$

Where:

ϕ_{gb} basic geotechnical strength reduction factor

ϕ_{tf} intrinsic test factor

K testing benefit factor

Where pile test data is unavailable or not undertaken, an assessment of the basic geotechnical strength reduction factor (ϕ_{gb}) shall be calculated using a risk assessment procedure as set out in Table 4.3.2(A) of AS2159. The assessment of individual risk ratings for risk factors as set out in Table 4.3.2(A) of AS 2159 will need to be undertaken by the designer of the piled footings.

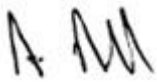
To assist with preliminary design of piled footings, a basic geotechnical strength reduction factor of **0.52** is recommended based on an assessment of average risk rating (ARR) as per Table 4.3.2 (A) of AS2159. The recommended strength reduction factor is based on no pile testing being undertaken and an ARR of 2.7 for low redundancy pile systems.

An assessment of potential geotechnical risk to the project

- Foundation materials may be encountered on site outside of the tested areas that are different to that encountered at the tested locations. If any unconsolidated or saturated foundation materials are encountered during excavation, or conditions that are not alike the above description, the site supervisor should be informed, the work stopped, and this office be contacted immediately for further evaluation.
- There is a risk that bearing pressure is mischaracterised with terms often used interchangeably without being fully understood. Therefore, in this report the allowable bearing pressure has been provided. It is defined as the maximum allowable loading that allows for shear effects (not settlement) with a safety factor of three, for one and two storey buildings, portal framed buildings, and water towers, Stockwell (1997). The allowable bearing pressure is based on a visual and tactile assessment of the soil as well as in situ penetration testing. It is well established that penetration tests are not repeatable and are preferably used to establish the changes in strength of the soil profile rather than as an absolute measure from which the allowable bearing capacity may be characterised. The bearing pressure reported is the likely range under normal soil moisture conditions (those caused by seasonal and regular climatic effects, effect of the building and subdivision, and normal garden conditions without abnormal moisture conditions), noting that cohesive soils gain strength as they dry out and lose strength as they saturate. This data is preliminary in nature and can be updated with further investigation and assessment once the design is suitably advanced.
- There is a risk that cohesion is mischaracterised with terms often used interchangeably without being fully understood. Therefore, in this report the characteristic effective cohesion of a soil (c') and undrained cohesion (c_u) have been provided (Table D4 AS 4678-2002 and Table 2.16 of Look (2014)). The cohesion is based on a visual and tactile assessment of the soil, the Atterberg limits, as well as in situ penetration testing. The cohesion provided in this report is preliminary in nature and can be updated with further laboratory testing (triaxial shear) and assessment once the building design is suitably advanced.
- In this report, the effective friction angle (ϕ') has been provided (Table D4 AS 4678-2002). The effective friction angle is based on a visual and tactile assessment of soil, Atterberg limits, as well as in situ penetration testing. Effective friction angles have been provided as a range and the lower bound should be used unless higher values can be substantiated by further laboratory testing.
- If earthworks on site are not conducted to the Australian Standard 3798 (2011) Guidelines on Earthworks for Commercial and Residential Developments, there is the risk of compromising the suitability of the soil found on site for foundations.
- The information contained in this report has been extracted from sources believed to be reliable and accurate. Inland Geotechnical will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. The results of the assessment undertaken are an overall representation of the conditions encountered. It should be noted that the recommendations and findings in this report are based solely upon the said site location and the ground level conditions at the time of testing. The properties of the soil within the location may change due to variations in ground conditions outside of the tested area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design changes.

If you have any queries about the contents of this geotechnical data report, please contact the undersigned.

Yours sincerely



Alexander Rudd BSc

Certified Professional Soil Scientist

MAGS MEIANZ MSSA

Inland Geotechnical
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12 March 2025

Attention: Glenn Braganza
Celestial Cluster Pty Ltd
20 Platinum Court
Thurgoona NSW 2640
glennb@celestialcluster.com.au
BY EMAIL

Dear Glenn

Re: Geotechnical Data Report – Thurgoona Development located 39 Ceres Drive and 20, 28, 32, 40 & 43 Platinum Court Thurgoona NSW 2640

I refer to the email request from Brent Stone of Central Steel Build on behalf of yourself to compile a geotechnical data report for multiple proposed new commercial structures as part of the Thurgoona Development located at 39 Ceres Drive and 20, 28, 32, 40 & 43 Platinum Court Thurgoona NSW. A site location map and plan of the proposed development can be seen in **Attachment A**.

The intended recipient of this report is yourself for use in the preliminary design of foundations for the structural and civil work associated with the proposed new commercial structures to be constructed on site. It is assumed that third parties will rely on this report for preliminary foundation design, however Inland Geotechnical is required to be consulted if the report is to be used for any other purpose.

Objective and agreed scope

The objective of this geotechnical data report is to document the procedures employed and the data collected, and despite the fact that soil and rock logging has an interpretive nature attached to it, this geotechnical data report is considered predominantly factual.

The agreed scope of works included:

- Where available, review plans and other general related documents provided to us to gain a comprehensive understanding of the site.
- Drill three holes to 5m depth (or refusal) at locations determined by yourself and undertake a visual and tactile assessment of investigated locations by reference to the Australian Standard 1726 (2017) Geotechnical Site Investigations.
- Test representative soil samples for moisture content, Atterberg limits and particle size distribution in a NATA accredited laboratory to the relevant Australian Standards and Transport for NSW test methods.
- Supply a geotechnical data report by reference to the Australian Standard 1726 (2017).

Location and description of the project site and its history

The site has a total area of 12,476m^2 (approx.) land parcel and is comprised of the following land titles being Lot 1 DP1290421, Lots 11, 12, 13, 14, 15 and 16 of DP 1209422. From a review of available historical aerial photography and satellite imagery (1961-2024), the site was originally bare agricultural land located on the outskirts of Albury until circa 1998. At which time a change in surrounding land use is evident as the urban area expanded. With reference to the 2010 image and subsequent images, it is apparent that subdivision and infrastructure development has occurred. The site is currently part of an undeveloped commercial district with the suburb/urban area known as Thurgoona (**Attachment B**).

Plan showing investigation locations

A plan of the investigation locations can be seen in **Attachment C**.

Description of the regional and local geology

The regional geology is a broad level plain of Cainozoic/Quaternary alluvium of the Shepperton Formation. Parent materials are dominated by clays, silts and sands from various past flow regimes of the Murray and Murrumbidgee Rivers and their associated palaeochannels. The local geology consists of thick upward fining sequences of alluvial clays silts and sands. Bedrock was not encountered to the investigated depth of 5m below existing ground level.

Records of fieldwork, including methods and results

Three bore holes were drilled using a power auger across the subject site. Disturbed grab soil samples were taken at nominal depths of 1, 2, 3, 4 & 5m depth below ground level. Samples were obtained in accordance with sampling method AS1289.1.2.1 (1998) Methods of testing soils for engineering purposes, sampling and preparation of soils, disturbed samples, standard method.

The log sheets including the visual and tactile assessment of the surface and subsurface can be seen in **Attachment D**. Photographs of the site and soil can be seen in **Attachment E**.

Laboratory testing and summary of results

Tabulated laboratory results can be seen in **Attachment F**.

Laboratory reports can be seen in **Attachment G**.

If you have any queries about the contents of this geotechnical data report, please contact the undersigned.

Yours sincerely

Alexander Rudd BSc
Certified Professional Soil Scientist
MAGS MEIANZ MSSA

Disclaimer

The information contained in this report has been extracted from sources believed to be reliable and accurate. Inland Geotechnical will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. The results of the assessment undertaken are an overall representation of the conditions encountered. It should be noted that the recommendations and findings in this report are based solely upon the said site location and the ground level conditions at the time of testing. The properties of the soil within the location may change due to variations in ground conditions outside of the tested area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design changes.

Notice of Copyright

Attachments

A. Site location map and development plan
B. Aerial photography and satellite imagery
C. Plan of the investigation locations
D. Log sheets
E. Photographs
F. Tabulated results
G. Laboratory reports

Attachment A : *Site location and development plan*

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
Google Earth Pro image 2024

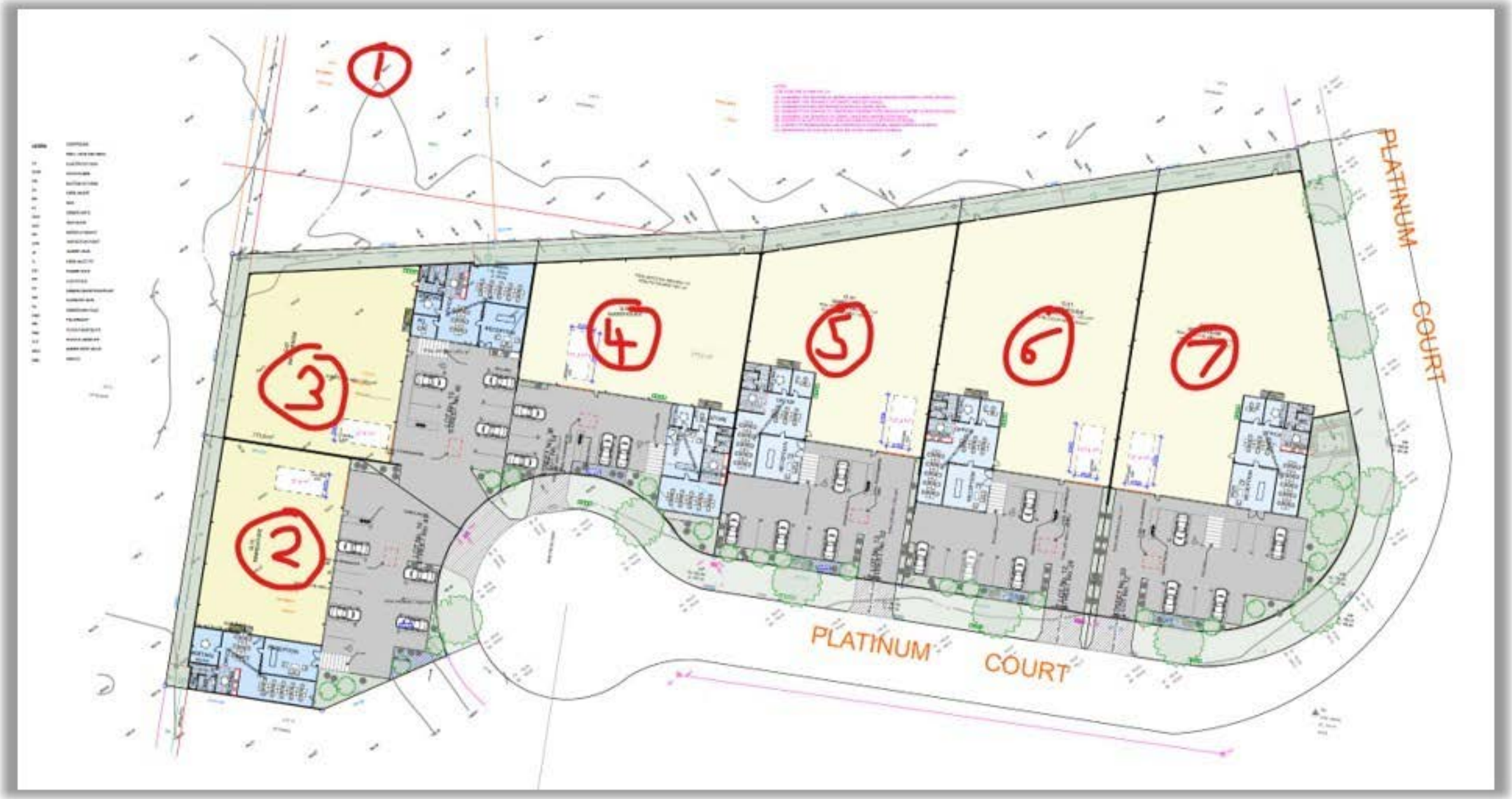
Legend
Site location

Site location

Google Earth
Image © 2025 Airbus

N

1 km


1
2
3
4
5
6
7
PLATINUM COURT
PLATINUM COURT

Attachment B : *Aerial photographs and satellite imagery*

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
ArcGIS aerial image 1961

Legend

Site location

Site location

Google Earth

Image © 2025 Airbus

N

100 m

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
ArcGIS aerial image 1975

Legend
Site location

Site location

N

100 m

Google Earth
Image © 2025 Airbus

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
ArcGIS aerial image 1998

Legend
Site location

Site location

Google Earth
Image © 2025 Airbus

N

100 m

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
Google Earth Pro image 2010

Legend
Site location

Site location

Google Earth
Image © 2025 Maxar Technologies

N

100 m

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
Google Earth Pro image 2015

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical investigation
Job no. 287
Google Earth Pro image 2023

Attachment C : *Plan of the investigation locations*

39 Ceres Drive + 20 28 32 36 40 & 43 Platinum Court Thurgoona NSW 2640

Geotechnical Investigation
Job no. 287
Google Earth Pro Image: Oct 2024

Legend
- Investigation Location
- Subject Site

BH01
BH02
BH03

Google Earth
Image © 2025 Airbus

N

70 m

Attachment D : *Log sheets*

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH01

UTM	: 55	Drill Rig	: Christie (3.1m Mast)	Job Number	: 287
Easting (m)	: 497186.00	Driller Supplier	: Inland Geo	Client	: Celestial Cluster c/- CentralBuild
Northing (m)	: 6009304.00	Logged By	: A. Rudd	Project	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	Reviewed By	: A. Rudd	Location	: 20 Platinum Court, Thurgoona NSW 2640, Australia
Total Depth	: 5 m BGL	Date	: 25/02/2025	Loc Comment	:

Depth (m)	Soil Origin	Material Description	DCP: Blows
0.05	Fill	Clayey SAND SC: low plasticity clay, pale brown, poorly compacted, medium to coarse grained, trace fine to medium sized gravel, trace low plasticity silt, dry.	6
	Alluvial	CL: Silty CLAY, brown, low plasticity, stiff, inorganic, w < pl.	9
0.4			11
0.50			11
	Alluvial	CI: CLAY, yellow brown, medium plasticity, stiff to very stiff, inorganic, w < pl, trace low plasticity silt.	.
0.9			.
1			.
	Alluvial	CI: CLAY, dark yellow brown, medium to high plasticity, stiff to very stiff, inorganic, w < pl to w ≈ pl.	.
1.5			.
1.50			.
	Alluvial	CI: CLAY, dark brown, medium to high plasticity, very stiff, inorganic, w ≈ pl.	7
2			6
			6
2.50			6
			.
			.
			.
			.
			.
			.
2.8			10
	Alluvial	CI: CLAY, brown grey, medium to high plasticity, stiff to very stiff, inorganic, w ≈ pl to w	9
3			10
			10
3.50			
3.8			
	Alluvial	CL-CI: Silty CLAY, brown yellow mottled orange and pale grey, low to medium plasticity, stiff, inorganic, w > pl, trace mica present. , with fine grained sand.	
4			
4.50			
4.7			
	Alluvial	CL-CI: CLAY, yellow brown, low to medium plasticity, stiff, inorganic, w > pl, trace fine to medium grained sand, trace low plasticity silt.	
		BH01 Terminated at 5m (Terminated)	

Drilling Method: 100mm SFA (Carbide Tip)

DCP: 0 5 10 15 20 25

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH02

UTM	: 55	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 287
Easting (m)	: 497174.00	**Driller Supplier**	: Inland Geo	**Client**	: Celestial Cluster c/- CentralBuild
Northing (m)	: 6009232.00	**Logged By**	: A. Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A. Rudd	**Location**	: 20 Platinum Court, Thurgoona NSW 2640, Australia
Total Depth	: 5 m BGL	**Date**	: 25/02/2025	**Loc Comment**	:

Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows
100mm SFA (Carbide Tip)	0.05	Fill	Clayey SAND SC: low plasticity clay, pale brown, poorly compacted, medium to coarse grained, trace fine to medium sized gravel, trace low plasticity silt, dry.		11
		Alluvial	CL: Silty CLAY, brown, low plasticity, stiff, inorganic, w < pl.		17
	0.50				20
	0.5		CI: CLAY, yellow brown, medium plasticity, stiff to very stiff, inorganic, w < pl, trace low plasticity silt.		
		Alluvial			
	0.9		CI: CLAY, dark yellow brown, medium to high plasticity, stiff to very stiff, inorganic, w < pl to w ≈ pl.	A	
	1	Alluvial			
	1.5		CI: CLAY, dark brown, medium to high plasticity, very stiff, inorganic, w ≈ pl.		6
	1.50				7
	2			B	6
		Alluvial			6
	2.50				7
	2.8		CI: CLAY, grey brown, medium to high plasticity, stiff to very stiff, inorganic, w ≈ pl to w	C	7
	3	Alluvial			6
	3.4		CL-CI: Silty CLAY, brown yellow mottled orange and pale grey, low to medium plasticity, stiff, inorganic, w > pl, trace mica present. , with fine grained sand.		5
	3.50	Alluvial		D	5
	4				
	4.5		CL-CI: CLAY, yellow brown, low to medium plasticity, stiff, inorganic, w > pl, trace fine to medium grained sand, trace low plasticity silt.		
	4.50	Alluvial		E	
			BH02 Terminated at 5m (Terminated)		

DCP: 0 5 10 15 20 25

Inland Geotechnical
6 Jones St, Wagga Wagga
Phone: 02 6931 0511

Geotechnical Log - Borehole

BH03

UTM	: 55	**Drill Rig**	: Christie (3.1m Mast)	**Job Number**	: 287
Easting (m)	: 497315.00	**Driller Supplier**	: Inland Geo	**Client**	: Celestial Cluster c/- CentralBuild
Northing (m)	: 6009256.00	**Logged By**	: A. Rudd	**Project**	: Geotechnical Investigation
Ground Elevation	: Not Surveyed	**Reviewed By**	: A. Rudd	**Location**	: 20 Platinum Court, Thurgoona NSW 2640, Australia
Total Depth	: 5 m BGL	**Date**	: 25/02/2025	**Loc Comment**	:

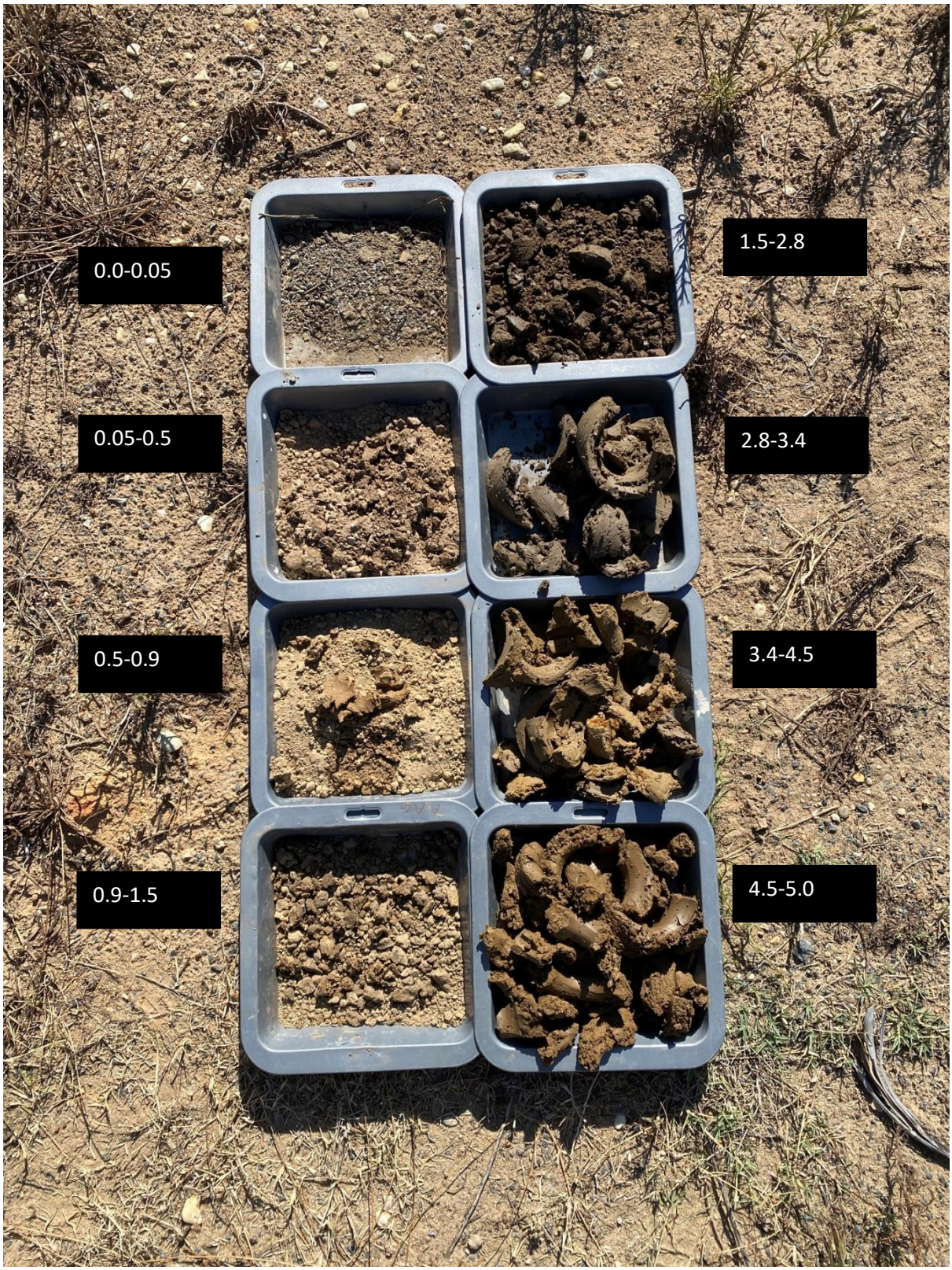
Drilling Method	Depth (m)	Soil Origin	Material Description	Samples	DCP: Blows
100mm SFA (Carbide Tip)	0.5	Alluvial	CL: CLAY, brown, low plasticity, stiff, inorganic, w < pl, with low plasticity silt.		11, 11, 11, 10, .
	0.9	Alluvial	CI: CLAY, yellow brown, medium plasticity, stiff to very stiff, inorganic, w < pl, trace low plasticity silt.		. . . . .
	1.5	Alluvial	CI: CLAY, dark yellow brown, medium plasticity, stiff to very stiff, inorganic, w < pl to w ≈ pl.		. . . . .
	2.9	Alluvial	CI: CLAY, dark brown, medium plasticity, very stiff, inorganic, w ≈ pl.		7, 9, 9, 8, ...
		Alluvial	CL-CI: Sandy CLAY, brown yellow, low to medium plasticity, stiff to very stiff, inorganic, w ≈ pl to w > pl, fine to medium grained sand.	F	6, 6, 7, 7
			BH03 Terminated at 5m (Terminated)		

Attachment E : *Site photographs*

Photograph 1: Site photograph taken facing southeast from Ceres Drive depicting location of BH01.

Photograph 2: Site photograph taken facing north from Platinum Court depicting location of BH03.

Photograph 3: The sampling method used on site – Power auger.



Photograph 4: The general soil profile on site to 5.0m (BH02 depicted).

Photograph 5: The general surface and vegetation on site. Note surface desiccation cracking with pen for scale.

Attachment F : *Tabulated results*

Page: 1 of 1
Job number: 287
Project: Geotechnical data report -39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW 2640

Sample date		25/2/25	25/2/25	25/2/25	25/2/25	25/2/25	25/2/25												
Sample location		BH02	BH02	BH02	BH02	BH02	BH01												
Sample ID		2139A	2139B	2139C	2139D	2139E	2139F												
Sample depth (m)		0.9-1.1m	1.9-2.1m	2.8-3.0m	3.8-4.1m	4.7-6.0m	3.6-4.0m												
Test	**Unit**	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Moisture content	%	22.5	20.3	22.5	22.3	18.8	11.7	-	-	-	-	-	-	-	-	-	-	-	-
Liquid limit	%	69	65	66	53	52	32	-	-	-	-	-	-	-	-	-	-	-	-
Plastic limit	%	19	18	17	17	15	12	-	-	-	-	-	-	-	-	-	-	-	-
Plasticity index	%	50	47	49	36	37	20	-	-	-	-	-	-	-	-	-	-	-	-
Linear shrinkage	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shrink swell index	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum dry density	t/m^3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Optimum moisture content	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
California bearing ratio	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
California bearing ratio (swell)	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.2mm passing	%	100	100	100	98	100	100	-	-	-	-	-	-	-	-	-	-	-	-
9.5mm passing	%	100	100	100	98	100	100	-	-	-	-	-	-	-	-	-	-	-	-
6.7mm passing	%	100	100	100	98	100	100	-	-	-	-	-	-	-	-	-	-	-	-
4.75mm passing	%	100	100	100	98	100	100	-	-	-	-	-	-	-	-	-	-	-	-
2.36mm passing	%	99	100	100	97	100	100	-	-	-	-	-	-	-	-	-	-	-	-
1.18mm passing	%	99	100	100	97	100	100	-	-	-	-	-	-	-	-	-	-	-	-
0.6mm passing	%	99	100	100	97	98	98	-	-	-	-	-	-	-	-	-	-	-	-
0.425mm passing	%	99	99	99	96	90	86	-	-	-	-	-	-	-	-	-	-	-	-
0.3mm passing	%	98	97	98	94	80	66	-	-	-	-	-	-	-	-	-	-	-	-
0.15mm passing	%	98	94	96	90	76	47	-	-	-	-	-	-	-	-	-	-	-	-
0.075mm passing	%	97	91	92	86	72	41	-	-	-	-	-	-	-	-	-	-	-	-
Emerson class number	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Falling Head Permeability	m/sec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Aggressivity																			
pH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EC (1:2)	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resistivity (1:2)	ohm cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Attachment G : *Laboratory reports*

Material Test Report

Inland Geotechnical Pty Ltd
Wagga Wagga Laboratory
6 Jones Street Wagga Wagga NSW 2650
Phone: (02) 69 310 511
Email: han@inlandgeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

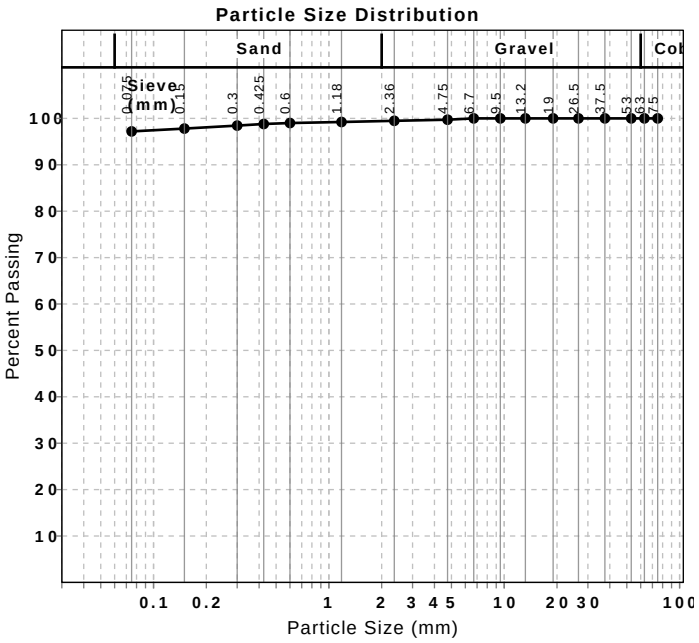
Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139A
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02 497174E 6009232N , Depth: 0.9-1.1m**
Material: CLAY
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**99**			0		
1.18 mm	**99**			0		
0.6 mm	**99**			0		
0.425 mm	**99**			0		
0.3 mm	**98**			0		
0.15 mm	**98**			1		
0.075 mm	**97**			1		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	69		
Plastic Limit (%)	19		
Plasticity Index (%)	**50**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	22.5		



Material Test Report

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Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

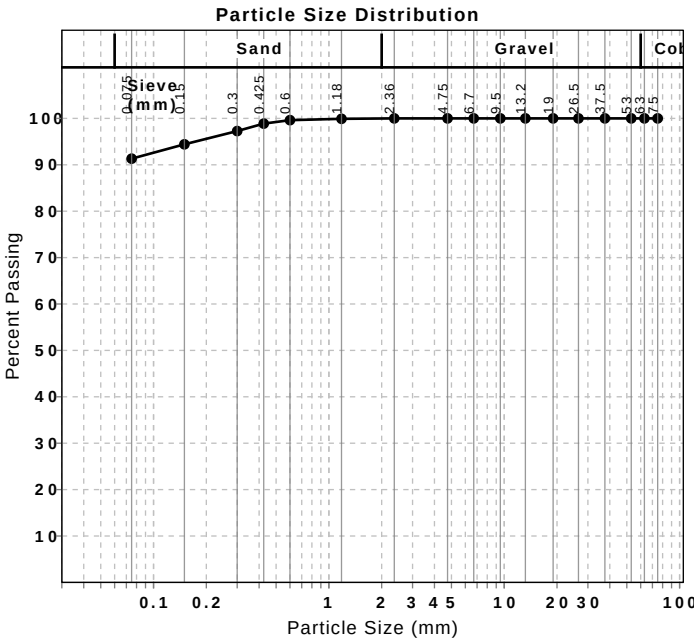
Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139B
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02 497174E 6009232N , Depth: 1.9-2.1m**
Material: CLAY
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**100**			0		
1.18 mm	**100**			0		
0.6 mm	**100**			0		
0.425 mm	**99**			1		
0.3 mm	**97**			2		
0.15 mm	**94**			3		
0.075 mm	**91**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	65		
Plastic Limit (%)	18		
Plasticity Index (%)	**47**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	20.3		



Material Test Report

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Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

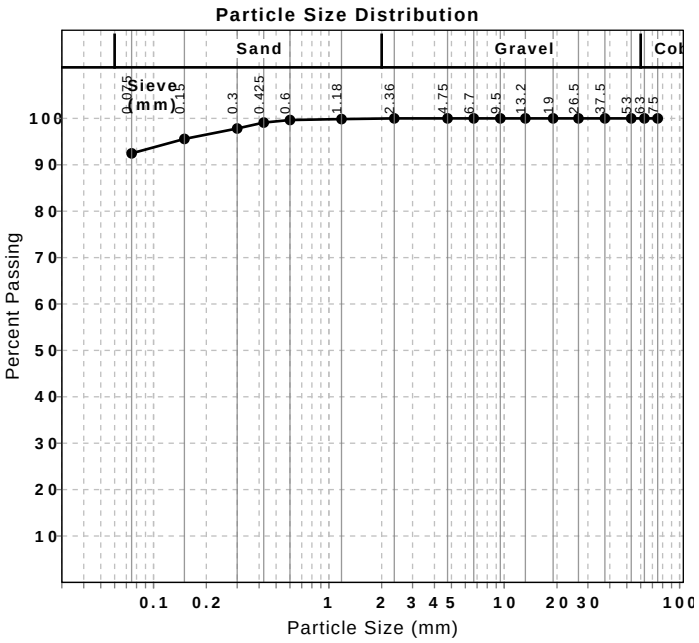
Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139C
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02 497174E 6009232N , Depth: 2.8-3.0m**
Material: CLAY
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**100**			0		
1.18 mm	**100**			0		
0.6 mm	**100**			0		
0.425 mm	**99**			1		
0.3 mm	**98**			1		
0.15 mm	**96**			2		
0.075 mm	**92**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	66		
Plastic Limit (%)	17		
Plasticity Index (%)	**49**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	22.5		



Material Test Report

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

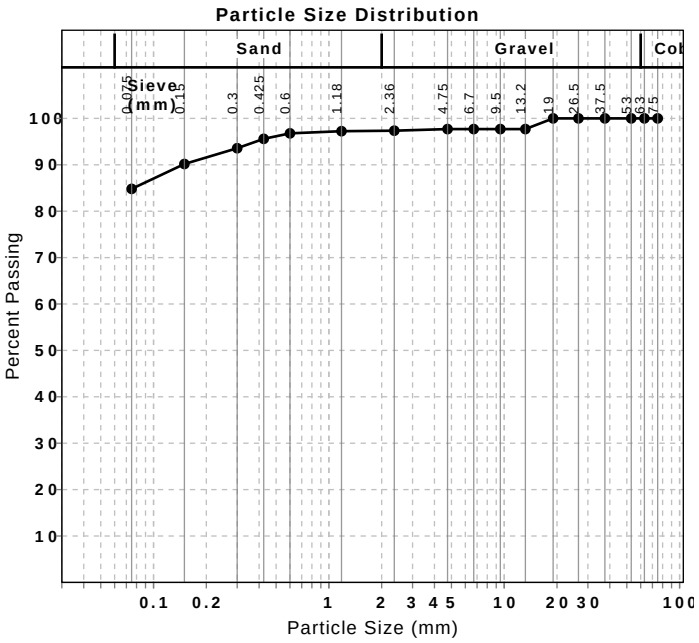
Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139D
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02 497174E 6009232N , Depth: 3.8-4.1m**
Material: CLAY with sand
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**98**			2		
9.5 mm	**98**			0		
6.7 mm	**98**			0		
4.75 mm	**98**			0		
2.36 mm	**97**			0		
1.18 mm	**97**			0		
0.6 mm	**97**			0		
0.425 mm	**96**			1		
0.3 mm	**94**			2		
0.15 mm	**90**			3		
0.075 mm	**85**			5		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	53		
Plastic Limit (%)	17		
Plasticity Index (%)	**36**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	22.3		



Material Test Report

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NATA Accredited Laboratory Number: 3349

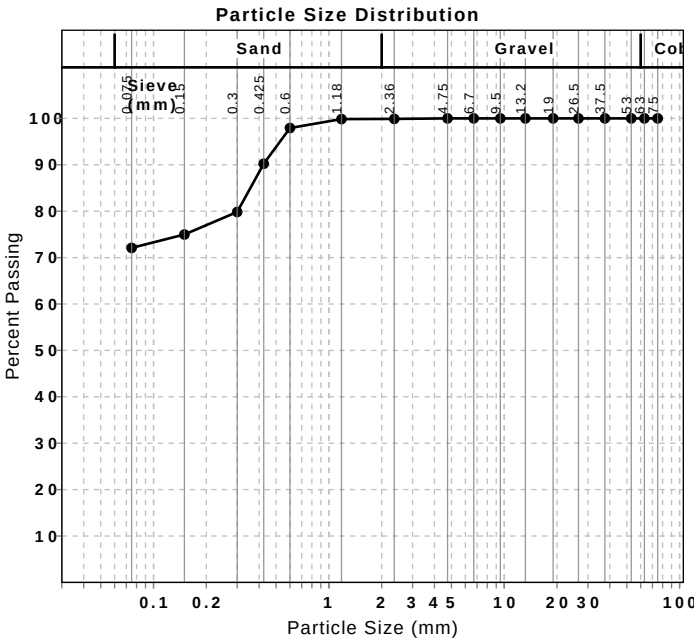
Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139E
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH02 497174E 6009232N , Depth: 4.7-5.0m**
Material: Sandy CLAY
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**100**			0		
1.18 mm	**100**			0		
0.6 mm	**98**			2		
0.425 mm	**90**			8		
0.3 mm	**80**			10		
0.15 mm	**75**			5		
0.075 mm	**72**			3		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	52		
Plastic Limit (%)	15		
Plasticity Index (%)	**37**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	18.8		



Material Test Report

Inland Geotechnical Pty Ltd
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Approved Signatory: Dr Hoang Han Nguyen
Lab manager
NATA Accredited Laboratory Number: 3349

Report Number: **287-1**
Issue Number: 1
Date Issued: 04/03/2025
Client: Celestial Cluster c/- CentralBuild

Contact: Brent Stone
Project Number: 287
Project Name: Geotechnical investigation
Project Location: 39 Ceres Drive, 20, 28, 32, 36, 40 and 43 Platinum Court Thurgoona NSW
Work Request: 2139
Sample Number: 2139F
Date Sampled: 25/02/2025
Dates Tested: 26/02/2025 - 03/03/2025
Sampling Method: AS 1289.1.2.1 6.5.3 - Power auger drilling
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Sample Location: **BH01 497315E 6009256N , Depth: 3.6-4.0m**
Material: Sandy CLAY
Material Source: In-situ

Particle Size Distribution (AS1289 3.6.1)						
Sieve	Passed %	Passing Limits		Retained %	Retained Limits	
75 mm	**100**			0		
63 mm	**100**			0		
53 mm	**100**			0		
37.5 mm	**100**			0		
26.5 mm	**100**			0		
19 mm	**100**			0		
13.2 mm	**100**			0		
9.5 mm	**100**			0		
6.7 mm	**100**			0		
4.75 mm	**100**			0		
2.36 mm	**100**			0		
1.18 mm	**100**			0		
0.6 mm	**98**			2		
0.425 mm	**86**			11		
0.3 mm	**65**			21		
0.15 mm	**47**			19		
0.075 mm	**41**			6		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Air Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	32		
Plastic Limit (%)	12		
Plasticity Index (%)	**20**		

Moisture Content (AS 1289 2.1.1)		Min	Max
Moisture Content (%)	11.7