

STRUCTURAL ENGINEERS INITIAL GEOTECHNICAL ASSESSMENT REPORT - TEMPLATE

PROJECT DETAILS

Project Street Address and legal description:	
Client Details	
Project and site testing locations	<i>Insert image of site plan including project and testing locations here</i>
Revision number	0
Engineering Company Details:	
Prepared by:	
Reviewed by:	
Date:	
Job number:	

The Structural Engineer initial geotechnical assessment report is to be used by engineers to support their use of the Geotechnical Input Flowchart. It provides a template for the type of information that should be presented to a BCA to justify the engineer's assumptions when a geotechnical report by a Chartered Professional Engineer (Geotechnical) or Professional Engineering Geologist is unlikely to be required.

This document is only an indication of what additional information or expertise may be required. There will always be exceptions to general guidance, and the Structural or Civil Engineer should use their professional judgement in every case to determine the appropriate skills and expertise required for the job.

This document is not to be used to report ground investigations and soil assessment for projects with geotechnical risks outside the bounds of competence for a structural engineer.

SUMMARY OF DESKTOP ASSESSMENT

Item	Comments
List previous geotechnical reports available	
Findings of previous geotechnical reports	
Geological maps available	
New Zealand Geotechnical Database (NZGD) date nearby (i.e. within ~ 200 m)	
Known geotechnical hazards from council's GIS or equivalent	
Minimum floor level and flooding	
Review of historic aerial photographs – previous HAIL activity / earthworks / building activity at the site	
Close-proximity active faults	
Subsoil class as part current NZ standard	
Topographical assessment of the surrounding area	
Buried services and structures	
Anticipated engineering geological model from maps and previous investigations and level of uncertainty in the model	

SUMMARY OF PROPOSED DEVELOPMENT

Item	Comments
Structure type	
Levels above ground	
Design life	
Importance level	

GROUND INVESTIGATIONS

Investigation Undertaken

XXXXXXXXXXXXXXXXXXXX undertook the following investigations to evaluate the subsurface conditions at the site on XXXXXXXX date. Investigation data can be found in the Appendix XX.

The following tests have been undertaken:

Test type	Number of tests	Maximum depth (mBGL)	Average depth (mBGL) min 2m	Test standard followed
Scala penetrometer ¹				
Hand auger ¹				
Test pit				
Shear vane				
Other:				

¹ – minimum required depth 2m or justifiable refusal.

Visual assessments were undertaken in accordance with NZGS Field Guide for the Description of Soil and Rock, 2005.

Subsoil Profile

Table 2: Geotechnical Model Subsoil Profile

Soil type	Depth from (m)	Depth to (m)	Consistency / density (NZGS)	Scala penetrometer range	Undrained shear strength (range) and remoulded range
	0.0				
... add rows as required					

Groundwater

Groundwater was encountered at xxxx mbgl at the time of the investigation (insert date).

INVESTIGATION FINDINGS

Item	Yes	No	Comments	
Our scope Revision number	Hazard check	ü		
	Desktop study		ü	
	Liquefaction risk (sandy soils, high groundwater)		ü	<i>Consults Geotechnical Engineer if Yes.</i>
	Slope stability risk, address both risk of inundation from above as well as global stability and instability from below; referring published hazard maps and local knowledge		ü	
	Expansive soils (refer site specific testing, published maps and local knowledge)		ü	
	Potentially compressible soils (recent alluvial soils (e.g. silts/peats); refer published hazard maps and local knowledge)	ü		
	Minimum 300 kPa ultimate bearing strength established	ü		
	Probable maximum settlement met under NZ Building Code			
	'Good ground' per NZS 3604 (latest edition)	ü		
	Flooding risk (refer published hazard maps and local knowledge)		ü	
	Close-proximity active fault risk – has fault location been established / is min offset met?		ü	

GEOTECHNICAL RISK ASSESSMENT

Risk	Consequence description	Risk (L / M / H)	Proposed mitigation
Liquefiable deposits present below depth of investigated soils	Foundation damage	10	Consult Geotechnical Engineer. Use TC2 foundations.
Softer areas of soil in low-lying part of site	Differential settlement	5	Undertake additional ground investigation and consult Geotechnical Engineer.
...etc (add rows as required)			

RECOMMENDATIONS

Item	Yes	No	Comments
Planned earthworks	ü		Cuts no greater than Xm, fill no greater than Xm to be made without involvement from CPEng (Geotech) or PEngGeol
Ground improvement/remediation	ü		
Foundation recommendations	ü		
Building restriction zone (BRZ) (Refer any resource consent conditions)		ü	
Preliminary SW design / control of surface water / groundwater	ü		
On-site wastewater design required? Any preliminary recommendations.			
Further investigation/assessment ¹		ü	

The report has been prepared for the client's exclusive use, and it may not be relied on for any other purpose or by any person other than the client without our prior written agreement.

¹ E.g. Any recommendations required re. earthworks control? Filling to NZS 4431? Cutting? Max cut height and batter grade to ensure stability. Retaining needed? Max height on this site before geotech input required? Proximity to boundaries. Temporary works if cutting near boundaries.

Site Photos

Insert photo here	Description of view including the slope of ground and direction from which photo taken
Insert photo here	Description of view including the slope of ground and direction from which photo taken.

APPENDIX 1. TEST LOCATIONS

Insert image here of site location with test sites cleared marked and number

APPENDIX 1. SCALA AND BOREHOLE TEST RESULTS

Test 1

Insert results here

Test 2

Insert results here

Test 3

Insert results here

Test 4

Insert results here

Insert image of hand auger spoils here	Hand Auger X - depth 0 – XXXXmm Description of soil at different depths here
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Insert image of hand auger spoils here	Hand Auger X - depth 0 – XXXXmm Description of soil at different depths here

Depth (mm)	Description of soil to NZGS field guide sheet
0 - XXXXmm	Description of soil here
XXXXmm - XXXXmm	Description of soil here
XXXXmm - XXXXmm	Description of soil here
XXXXmm - XXXXmm	Description of soil here
XXXXmm - XXXXmm	Description of soil here