

Engineering Assessment Summary Report

- for Naenae Community Hall

1. Building Information	
Building Name/ Description	Naenae Community Hall
Street Address	21 Treadwell Street, Naenae
Territorial Authority	Hutt City Council
No. of Storeys	1 (but the main hall area is effectively a double floor height)
Area of Typical Floor (approx.)	640 m ²
Year of Design (approx.)	1952
NZ Standards designed to	Unknown
Structural System including Foundations	<ul style="list-style-type: none">➤ Roof- corrugated steel supported of timber framing.➤ Gravity support structure-➤ Walls-<ul style="list-style-type: none">○ Exterior walls- URM. IN the hall area there URM goes up to a height of about 3m and the wall above this height is timber framed with weatherboard cladding.○ Internal- URM and timber framed➤ Floors- timber framed support of concrete piles and exterior walls.➤ Foundations-<ul style="list-style-type: none">○ strip footing under URM walls- assumed concrete○ concrete piles under internal timber floor area➤ Lateral bracing<ul style="list-style-type: none">○ Long direction- in-plane capacity of URM and timber frame walls○ Transverse direction- combination of steel frames across the main hall and the in-plane capacity of URM and timber framed walls.

Does the building comprise a shared structural form or shares structural elements with any other adjacent titles?	No
Key features of ground profile and identified geohazards	No other significant geohazards identified.
Previous strengthening and/or significant alteration	No
Heritage Issues/ Status	Unknown.
Other Relevant Information	N/A

2. Assessment Information

Consulting Practice	
CPEng Responsible, including: <ul style="list-style-type: none"> • Name • CPEng number • A statement of suitable skills and experience in the seismic assessment of existing buildings¹ 	
Documentation reviewed, including: <ul style="list-style-type: none"> • date/ version of drawings/ calculations ² • previous seismic assessments 	Some drawings by King, Cook and Dawson dated 30 April 1952.
Geotechnical Report(s)	N/A
Date(s) Building Inspected and extent of inspection	6 May 2019, interior and exterior inspection to confirm accuracy of the original drawings used for the IEP. No significant discrepancies noted.

¹ This may include reference to the engineer's Practice Area being in seismic assessment, or commentary on experience in practice and recent relevant training, particularly if prior to re-assessment of practice area

² Or justification of assumptions if no drawings were able to be obtained

Description of any structural testing undertaken and results summary	N/A
Previous Assessment Reports	N/A
Other Relevant Information	N/A

3. Summary of Engineering Assessment Methodology and Key Parameters Used

Occupancy Type(s) and Importance Level	Importance level 3- Public building. Consider that more than 300 people could congregate in the main hall area.
Site Subsoil Class	Site soil class D- deep soil
Summary of how Part B was applied, including: <ul style="list-style-type: none"> Key parameters such as μ, S_p and F factors Any supplementary specific calculations 	<p>Ductility, $\mu = 1.50$ → This ductility is used as this is a URM building constructed in the 1935-1965 period.</p> <p>Structural performance factor, $S_p = 0.85$ → This correlates to the ductility used in the IEP.</p> <p>Other factor, $F = 1.0$ → The factor F was chosen as due to extent of URM it was not considered appropriate to use this factor to increase the building score.</p>
Other Relevant Information	N/A

4. Assessment Outcomes

Assessment Status (Draft or Final)	Final
Assessed %NBS Rating	20% NBS
Seismic Grade and Relative Risk (from Table A3.1)	Grade E – Earthquake Prone Building (<34%NBS)
Describe the Potential Critical Structural Weaknesses	- Failure of URM walls out-of-plane.
Does the result reflect the building's expected behaviour, or is more information/ analysis required?	Yes- URM building. Known to not perform well. Clearly potential risk of out-of-plane failure of URM walls.
If the results of this ISA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified:	This assessment identified the building as earthquake prone. We consider this an accurate assessment.
Recommendations	Either proceed with seismic strengthening or demolitions of this building. We would not recommend carrying out a DSA in an attempt to show that this building has greater than 33%NBS. However, we would recommend a DSA as part of the seismic strengthening design so the existing seismic capacity can be taken into account in the strengthening design.