Responses to Questions
Expressions of Interest - Reimagining the Levin War Memorial Hall and Village Green

1. The 2024 Levin ANZAC Day ceremonies took place across multiple sites, with alternative venues available in the event of bad weather.
    a. Is there a relationship between the Levin RSA, Te Takeretanga o Kura-hau-pō, Thompson House and the War Memorial Hall?

    Te Takeretanga o Kura-hau-pō, Thompson House and the Levin War Memorial Hall are all Council owned properties. The Levin RSA is an important partner to Council that we continue to engage with during all steps of the EOI process. The Levin RSA is located at 5 Devon Street, Levin.

    If we have misinterpreted your question and the above answer does not provide you with the information you require, please clarify your question.

    b. If not, is this something that Horowhenua District Council would like to explore?

    As above.

2. Are the design drawings for the proposed structural strengthening of the War Memorial Hall available for review?

    Please refer to attached HDC – Levin Memorial Hall - Initial Seismic Review from Opus International Consultants Ltd dated 15 March 2013.

3. A thorough assessment of the site and adjacent uses will need to be undertaken to support the preparation of a robust proposal.
    a. Has any market research, detailed site analysis or feasibility studies been commissioned?

    No.

    b. What is the expected scope and format of the ideas component of this EOI response?

    We have provided a form for respondents to complete, and while HDC does not expect concept designs or feasibility information, it may be useful to include some visual examples or sketches of proposed ideas.

4. The Levin Skate Park appears to be well-regarded in the skateboarding community, however, it seems to be in need of some maintenance and updating.
    a. Is this facility well-regarded and supported by the wider community?

    The skate park is well regarded and is highly used by the community. There is excellent community support for the skate park.

    b. Have consultants been engaged to provide an outline scope-of-work for maintenance and upgrade works?

    No.

5. The brief presents an excellent opportunity to engage with the community and deliver an exemplary public amenity. A comprehensive development consultancy team will be required to deliver this and future projects.
    a. Does Horowhenua District Council have incumbent development, planning and project delivery consultants?

    We do not have incumbent development, planning or project delivery consultants for this work.

    b. If not, would recommendations for a comprehensive development advisory and delivery team be required as part of this EOI response?

    HDC has an advisory group for the Levin Town Centre Transformation, this is our "Challenge Team" (please refer to the Levin Town Centre Transformation Quick Reference Guide for information). The Challenge Team comprise independent experts who can be approached for advice and guidance when required. HDC also has a Programme Delivery Team who will work with project delivery resources (some of these resources are likely to be external to HDC) to manage the execution and delivery of the Levin Town Centre Transformation projects.

6. Is there an iwi right of first refusal?

    No.

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15th March 2013

5-P0523.00

HDC – Levin Memorial Hall - Initial Seismic Review.

1. Introduction

Horowhenua District Council commissioned Opus International Consultants Ltd (Opus) to undertake a seismic review of a number of HDC owned buildings and assets. This was to include the following Stages;

1) A review of all available archive information for the building.
2) An Opus Engineer to undertake an initial non-intrusive visual site investigation of the building
3) Undertake an initial evaluation procedure (IEP) if deemed appropriate
4) Or a undertake a quantitative assessment at a level of complexity sufficient to identify with a reasonable degree of confidence the present seismic rating for the building expressed as a % of new building standard (%NBS).
5) Based upon the findings of the above review, if necessary undertake a detailed site investigation of the building, including any localised breakouts and material testing required.
6) Produce detailed calculations to confirm each buildings seismic rating (%NBS).
7) The calculations produced are to report not only the overall %NBS for the building but are to identify the failure mechanisms within the building and their relevant %NBS to allow strengthening options to be identified.
8) Provide strengthening options including rough order of costs to achieve the following seismic ratings (if practical) for each building;

    34%NBS
    67%NBS
    100%NBS
    >100%NBS

This report covers the first 7 stages, with recommendations provided on the way forward to the next stage.

Fig 1. Levin Memorial Hall

2. Archive information available and assumptions made as part of this assessment

Archive architectural/structural drawings relating to this building have been obtained from HDC. and the following assessment has been done based upon the information obtained and from the visual inspection of the site/building.

Archive information indicated that the building was designed in 1952.

The seismic assessment has been based upon the following:

- Archive information provided by HDC with key dimensions and details confirmed during the visual site inspection undertaken by an Opus Structural Engineer.
- Typical material strengths taken from NZSEE document 'Assessment and Improvement of the Structural Performance of Buildings in Earthquakes'.

  Concrete: 30Mpa
  Reinforcement: 230Mpa
- Reinforcement arrangement and details taken from archive drawings provided HDC.

No record of geotechnical descriptions of the underlying soil profiles could be located for this building and therefore the assessment has been based upon typical geotechnical conditions for the Levin area.

3) Structural System

The identification of the structural system for this building was made through a review of the archive drawings with the key elements and dimensions confirmed during a visual site inspection.

The building was a single storey reinforced concrete structure with reinforcement concrete shear walls providing lateral restraint. A hipped lightweight metal clad roof supported off hit and miss timber sarking was constructed over the main hall and entrance foyer. The sarking was secured to timber purlins spanning between steel trusses over the main hall and foyer areas. A flat galvanised tray roof supported off timber purlins and rafters was provided over the Freyberg Room.

The overall plan measurement of the building is approximately 46m long x 15.7m wide. Both the external walls and the majority of the internal walls were constructed from cast in-situ reinforced concrete, with a number of reinforced concrete piers provided at regular intervals around the external perimeter of the building to support steel trusses spanning over the main hall and foyer area and steel joists supporting the roof over the Freyberg room. The reinforced concrete external walls continue past the roof level to form a parapet around the perimeter of the building.

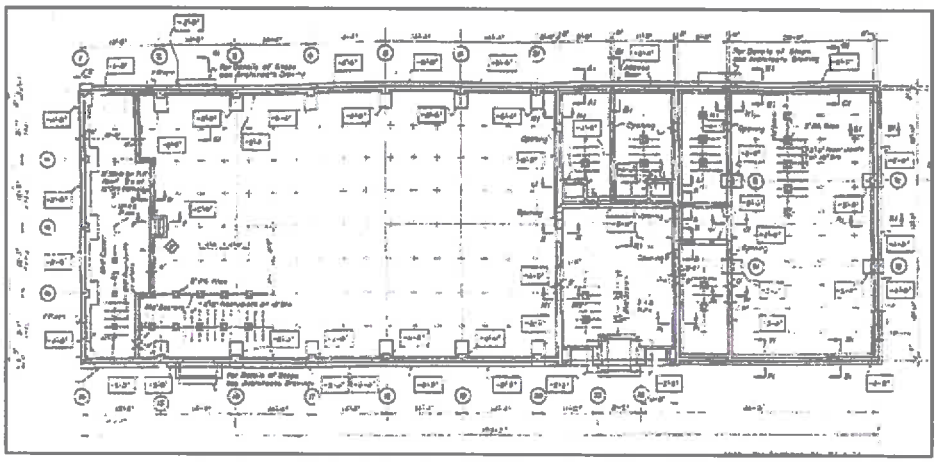

Fig 2. Foundation/Ground floor plan.

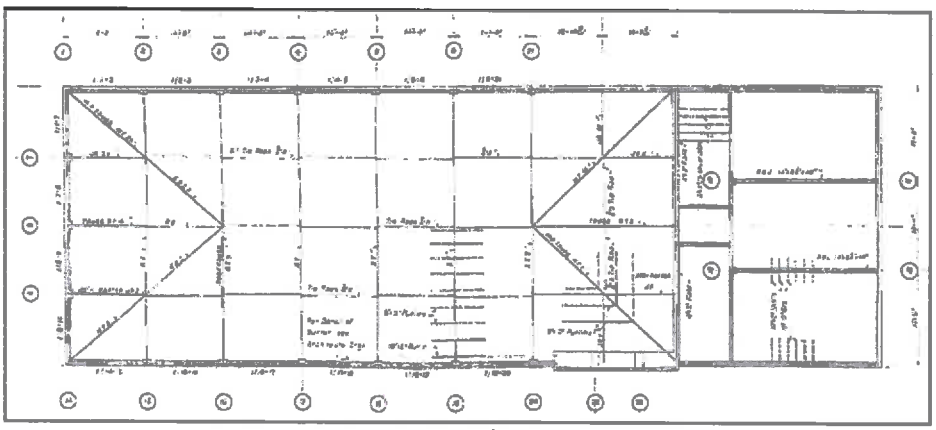

Fig 3. Roof Plan.

A suspended native strip flooring system is provided throughout the building supported off a reinforced concrete ring foundation and a combination of internal wall foundations and 8'x8' square concrete piles.

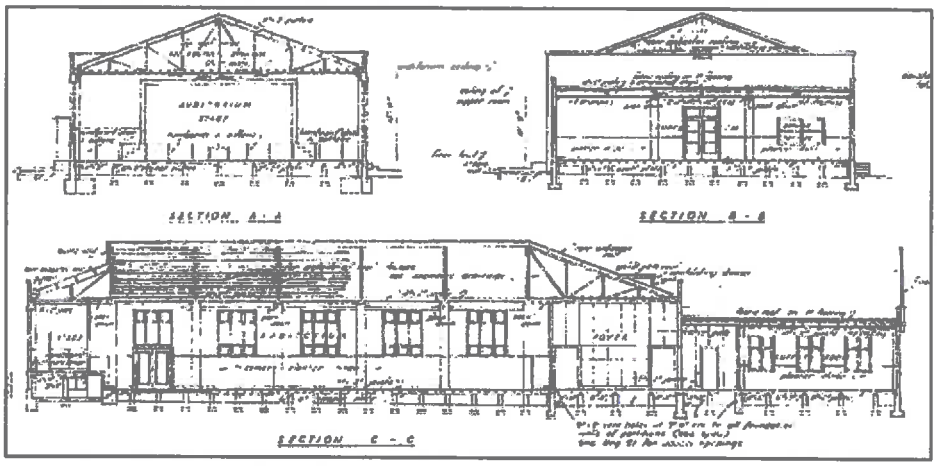

Fig 3. Typical Sections through Building.

The concrete walls and piers were built off the ground bearing reinforced concrete ring foundation with thickenings provided at the pier locations.

3.1 Building Condition

Generally the visible parts of the structure would appear to be in reasonable condition for the age of the building with the exception of two small parallel cracks observed running the full length of the inside face of the external walls of the main hall (approximately 2.00m and 3.00m above the timber floor level). No matching cracking to the external face of the walls at these locations could be observed due to recent repairs and painting to the outside of the building.

A number of other minor cracks were observed on the internal face of the walls but these were most likely due to thermal movement and are not thought likely to be significant.

A number of connections between the steel roof trusses/framing and the reinforced concrete walls show signs of localised concrete spalling and movement.

4 Assessment

An Initial Evaluation Procedure (IEP) including some limited quantitative analysis of this building has been previous completed (Opus Report 'Memorial Hall, Chamberlain Street, Levin – Seismic Assessment Initial Evaluation Procedure' dated 12th September 2011). This report concluded that the building achieved a rating of <33%NBS (percentage of New Building Standard) and was classified as "Potentially" Earthquake Prone. The key mode of failure was identified as being a lack of bracing provided within either the ceiling or roof throughout the building, sufficient to restrain the tops of the reinforced concrete walls and transmit the lateral seismic forces to relevant shear walls.

Consequently this quantitative assessment has been undertaken to examine in more detail the potential overall seismic rating which could be achieved for this building, assuming either roof bracing or ceiling diaphragms of sufficient strength to transmit the lateral forces to the relevant shear walls have been provided.

At this stage no detailed design has been undertaken to provide the necessary bracing/diaphragm in the roof/ceiling, with the assessment restricted to examining the capacity of the reinforced concrete walls to resist the lateral forces generated during a seismic event.

4.1 Assessment Findings

The quantitative seismic assessment concluded that the building could potentially achieve 100%NBS upon completion of sufficient strengthening to the ceiling/roof bracing system.

5) Conclusions and Recommendations

This additional quantitative assessment concluded that the building would likely achieve 100%NBS following the design and construction of a bracing system within the roof/ceiling of sufficient strength to transmit the lateral forces generated in a seismic event to the relevant reinforced concrete shear walls throughout the building.

A condition survey of the building was undertaken in March 2011 by Alpha Building Consultants Ltd. They identified the roof cladding as requiring replacement within the next 5-7 years and a recommendation that consideration be given to the replacement of the ceilings within the next 2 years.

We would recommend that the construction of any bracing system within the ceiling/roof over the main hall, the Freyberg room and the foyer area be incorporated within the future replacement of either the roof cladding or ceiling replacement as a high percentage of the costs incurred in retro-fitting bracing within an existing structure are due to access issues including the need for breakouts and reinstating finishes to the roof, ceiling and walls during the construction process.

At this stage the assessment of this building has been based upon life safety with the building being designated as importance level 2 (IL2). If there is a requirement for the Hall to hold in excess of 300 people then additional calculations can be undertaken to confirm %NBS achievable for an IL3 designation.

Prepared By.	***Reviewed By.***
Darren Harpur **Senior Structural Engineer**	Dave Dekker **Principal Structural Engineer**
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Appendix A: Structural Analysis – Methodology

A.1. Analysis Parameters

Table A1: Assumed Earthquake Action Parameters

Parameter	Value	Comments
Site Subsoil Class	D	Deep or soft soil
Z	0.40	Seismic hazard factor for Levin Area
R	1.0	Importance level 2, Normal structure
N(T,D)	1.0	Greater than 20 km from nearest major fault
T_1	0.4s	1st period of structural vibration

Table A2: Assumed Structural Displacement Ductility Factors

Component	Criteria
Reinforced concrete walls – In-plane Forces	$\mu = 1.00$
Reinforced concrete walls – Out-of-plane Bending	$\mu = 1.25$

A.2. Material Properties

The following material properties were used in the analyses:

Table A3: Assumed Material Properties

Material	Nominal Strength
Concrete	$f'_c = 30MPa$
Reinforcement	$f_y = 230MPa$

The following criteria from the earthquake loadings standard NZS 1170.5 were used to determine the site loading spectrum:

A.3. Design methodology and assumptions

Seismic forces were applied using the Equivalent Static Method as outlined in NZS 1170.5.

The structural qualitative analysis was carried out using the two predominant directions of the building.

Based on the actions determined from the analysis, an assessment of the building capacities was made and the percentage of new building standard (%NBS) was calculated.