Initial Evaluation Procedure (IEP) Assessment - Completed for Hutt City Council

Page 1

WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set out in the "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, α engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.

Street Number & Name:	105 Randwick Crescent	Job No.:	5-C3957.00
AKA:		By:	GFS
Name of building:	Moera Community Hall	Date:	23/08/2019
City:	Moera, Hutt City	Revision No.:	0

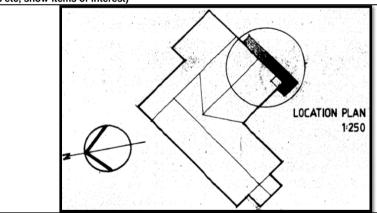
Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)



1.2 Sketches (plans etc, show items of interest)



1.3 List relevant features (Note: only 10 lines of text will print in this box. If further text required use Page 1a)

Structure: Timber framed with a mixture of lined walls and weatherboard cladding Foundations: Piled foundation with concrete perimeter wall

Roof: Lightweight timber with 1 inch diagonal sarking and lightweight steel cladding

Subsoil: D soft or deep soils - NZS1170.5:2004 Site Subsoil Classification of Lower Hutt

Construction Date: assumed prior to 1935 - significant alterations 1950 and other later additions

1.	4	Note	information	sources

Tick as appropriate

Visual Inspection of Exterior Visual Inspection of Interior Drawings (note type)

V	
V	
7	

Specifications Geotechnical Reports Other (list)

Information Reviewed: 1950 truss drawing and 1982/3 minor extensions design details

Initial Evalua	ation Procedu	re (IEP) Assessme	nt - Complete	d for Hutt City (Council	Page 2
Street Number & AKA: Name of buildin City:		105 Randwick Cresc Moera Community H Moera, Hutt City			Job No.: By: Date: Revision No	5-C3957.00 GFS 23/08/2019 Do: 0
<u></u>	Lawrence of		24 0		Kevision N	<mark>v</mark>
Table IEP-2		uation Procedure S	step 2			
•	nination of (%N) for particular buildir	BS) _b ng - refer Section B5)				
, , ,	ominal (%NBS) =	•		Longitudir	<u>nal</u>	<u>Transverse</u>
a) Building Str	engthening Data			_		
	_	e been strengthened in this				
If strengthe	ened, enter percenta	ige of code the building has	been strengthened t	N/A		N/A
h) Year of Desi	an/Strenathenina	Building Type and Seismi	c Zone			
b) real of Desi	gn/strengthening,	Bulluling Type and Selsill	c zone	1935-1965 1965-1976 1976-1984 1984-1992 1992-2004 2004-2011	• 000000000000000000000000000000000000	Pre 1935
			Building Type:	Others - Wellington	•	Others - Wellington
			Seismic Zone:	Not applic	cable	Not applicable
c) Soil Type	N704470 F-00	004 01242				
	From NZ\$1170.5:20			D Soft Soil	•	D Soft Soil
	From NZS4203:199 for 1992 to 2004 ar			Not applic	cable	Not applicable
d) Estimate Pe	eriod, <i>T</i>					
Comment: Timber fram	es			$h_n = 6$ $A_c = 1.00$		6 m 1.00 m ²
Moment Res Eccentrically All Other Fra Concrete Sh Masonry She	ear Walls: d (input Period): Where $h_n = he$	T = m $T = m$ $T = m$		C		○ ○ ○ ○ ○ ○ ○
	if not strengthened)	termined using result from (a) abov	ve (set to 1.0	Factor A: 1.00		1.00
,	results (a) to (e) above	E Guidelines Figure 3A.1 using		Factor B: 0.03		0.03
	For reinforced concrete C = 1.2, otherwise take	buildings designed between 1976- as 1.0.	84 Factor	Factor C: 1.00		1.00
h) Factor D:		prior to 1935 Factor D = 0.8 excep where Factor D may be taken as		Factor D: 1.00		1.00
(%NBS) _{nom} = -	AxBxCxD		(1	% NBS) _{nom} 3%	.	3%

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AKA: Name of building: Moera, is Table IEP-2 Initial Evaluation P 2.2 Near Fault Scaling Factor, Factor E If $T \le 1.5 \text{sec}$, Factor E = 1 a) Near Fault Factor, $N(T,D)$ (from NZS1170.5:2004, CI 3.1.6) b) Factor E 2.3 Hazard Scaling Factor, Factor F a) Hazard Factor, Z , for site Location: $Z = \begin{bmatrix} $	= 1/N(T,D) south of Taita Gorge 4.	Longitudinal N(T,D): 1 Factor E: 1.00 Refer right for user-defined locations .5:2004, Table 3.3) Zone Factor from accompanying Figure 3.5(b)) .5:2004, Table 3.3) Factor F: 2.50	GFS 23/08/2019
Name of building: City: Moera, i Moera, i Moera, i I Locator E I I Location: Hutt Valley-s Z = 0 Z 1992 = 1 Z 2004 = 0 I Design For pre 1992 = 2 For 1992-2011 = 2 Location: Hutt Valley-s Z = 0 Z 1992 = 1 Z 2004 = 0 I Location: Hutt Valley-s Z = 0 Z 1992 = 1 Z 2004 = 0 I S 1992 2004 0 Location: Hutt Valley-s A 1992 1 Location: Hutt Valley-s Z = 0 Z 1992 1 Z 2004 = 0 I Design For pre 1992 1 Location: Hutt Valley-s A 1992 1 L	### City Procedure Step 2 = 1/N(T,D) south of Taita Gorge	Date: Revisio 2 Continued Longitudinal N(T,D): 1 Factor E: 1.00 Refer right for user-defined locations .5:2004, Table 3.3) 2 Zone Factor from accompanying Figure 3.5(b)) .5:2004, Table 3.3) Factor F: 2.50	23/08/2019 0 Transverse 1 1.00
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	<u>Choose Imp</u>	$R_0 = \boxed{ 1 }$ ortance Level 1 \bigcirc 2 3 04	
d) Footor C	= IR _o /R	R = 1.0	1.0
d) Factor G	= IK ₀ /K	Factor G: 1.00	1.00
2.5 Ductility Scaling Factor, Factor H a) Available Displacement Ductility Within Ex	xisting Structure		
Comment: Lightweight timber frames		$\mu = 2.00$	2.00
		<u></u>	
b) Factor H		k_{μ}	k_{μ}
For pre 19	76 (maximum of 2)	= 1.57	1.57
For 1976 c	onwards	= 1	1 57
(where kμ is NZS1170.5:2004 Inelastic Spectrum Scal	ling Factor, from accompanyin	Factor H: 1.57	1.57
		· · · · · · · · · · · · · · · · · · ·	
2.6 Structural Performance Scaling Factor a) Structural Performance Factor, S _p (from accompanying Figure 3.4)	, Factor I		
Tick if light timber-framed construction in this	direction		
		S _p = 0.50	0.50
b) Structural Performance Scaling Factor	= 1/S _p	Factor I: 2.00	2.00
Note Factor B values for 1992 to 2004 have been mul	Itiplied by 0.67 to account for \$		
2.7 Baseline %NBS for Building, (%NBS) _b (equals (%NBS) _{nom} x E x F x G x H x I)		22%	22%

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	M	11-11			By:	GFS
e of building:	Moera Communit	у нап			oate:	23/08/2019
la IED 0 Initial E	Moera, Hutt City	- 04- : 0			Revision No.:	U
	valuation Procedur	•				
o 3 - Assessment of Pe r Appendix B - Section B3.2)		in Naiio (PAR)				
ongitudinal Direction						
potential CSWs		Effect on Struct (Choose a value -				Fact
Plan Irregularity		`	•	,		-
Effect on Structural Performa			gnificant		Insignificant	Factor A 1.0
Comment: Present, timber s	structure no impact on perfor	rmance				
ertical Irregularity						
Effect on Structural Performa	ance O Severe	⊖ Si	gnificant		Insignificant	Factor B 1.0
Comment: Nil						
Short Columns						
Effect on Structural Performa	ance O Severe	⊖ Si	gnificant		Insignificant	Factor C 1.0
Comment: Nil						
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eet Number & Name:	105 Randwick Creso	ent			ob No.:	5-C3957.00
A:	Moore Community	Iall			y:	GFS
ne of building: /:	Moera Community H Moera, Hutt City	ıdıl		•••••	ate: evision No.:	23/08/2019
	valuation Procedure s					
ransverse Direction						Fa
potential CSWs		Effect on Strue				ra
Plan Irregularity		(Onloose a value	- Do not interp	Joiate		
Effect on Structural Perform	nance O Severe	O S	ignificant		Insignificant	Factor A
Comment: Present, timber s	structure no impact on performa	nce				
Vertical Irregularity						
Effect on Structural Perform	nance O Severe	O S	ignificant		Insignificant	Factor B
Comment: Nil						
Short Columns						
Effect on Structural Perform	nance O Severe	O S	ignificant		Insignificant	Factor C
Comment: Nil						
(Estimate D1 and D2 and so Factor D1: - Pounding Effe Note:	et D = the lower of the two, or	1.0 if no potentia	al for pounding	g, or conseque	nces are conside	red to be minimal
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	et Number & Name:	105 Randwick Crescent	Job No.:	5-C3957.00
\KA			By:	GFS
	e of building:	Moera Community Hall	Date:	23/08/2019
City:		Moera, Hutt City	Revision No.:	0
ak	ole IEP-4 Initial Ev	aluation Procedure Steps 4, 5, 6 an	d 7	
tep	4 - Percentage of New	Building Standard (%NBS)	Longitudinal	Transverse
			Longitudinai	Hansverse
.1	Assessed Baseline %NB (from Table IEP - 1)	S (%NBS) _b	22%	22%
.2	Performance Achieveme (from Table IEP - 2)	nt Ratio (PAR)	2.00	2.00
.3	PAR x Baseline (%NBS) _b	,	45%	45%
.4	Percentage New Building (Use lower of two values	g Standard (%NBS) - Seismic Rating from Step 4.3)		45%
tep	o 5 - Is <i>%NB</i> S < 34?			NO
tep	o 6 - Potentially Earthqua	ake Risk (is <i>%NB</i> S < 67)?		YES
itep	o 7 - Provisional Grading	g for Seismic Risk based on IEP	Seismic Grade	С
	Additional Comments (item	s of note affecting IEP based seismic rating)		
	Comment:			

Grade:	A+	Α	В	С	D	E
%NBS:	> 100	100 to 80	79 to 67	66 to 34	< 34 to 20	< 20

WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedureset out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judge ments based on them, have not been undertaken, and these may lead to a different result or seismic grade.

Initial Evaluation Procedure (IEP) Assessment - Completed for Hutt City Council

Page 7

Street Number & Name:	105 Randwick Crescent	Job No.:	5-C3957.00
AKA:		By:	GFS
Name of building:	Moera Community Hall	Date:	23/08/2019
City:	Moera, Hutt City	Revision No.:	0

Table IEP-5 Initial Evaluation Procedure Step 8

Step 8 - Identification of potential Severe Structural Weaknesses (SSWs) that could result in significant risk to a significant number of occupants

8.1 Number of storeys above ground level

1

8.2 Presence of heavy concrete floors and/or concrete roof? (Y/N)

N

Potential Severe Structural Weaknesses (SSWs):

Note: Options that are greyed out are not applicable and need not be considered.

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

The following potential Severe Structural Weaknesses (SSWs) have been identified in the building that could result in significant risk to a significant number of occupants:

- 1. None identified
- 2. Weak or soft storey (except top storey)
- 3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements
- 4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections
- 5. No identifiable connection between primary structure and diaphragms
- 6. Ledge and gap stairs

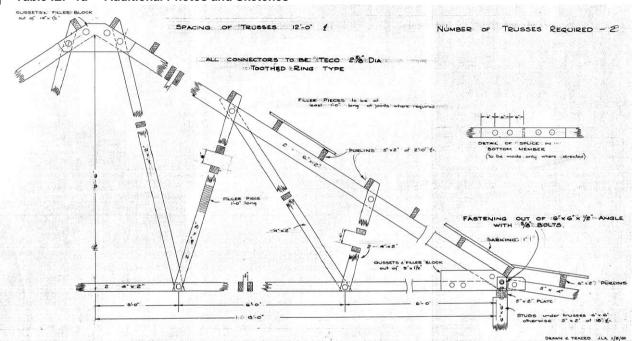
IEP Assessment Confirmed by



WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedureset out in "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judge ments based on them, have not been undertaken, and these may lead to a different result or selsmic grade.

Initial Evaluation Procedure (IEP) Assessment - Completed for Hutt City Council Page 1a 105 Randwick Crescent Street Number & Name: Job No.: 5-C3957.00 AKA: Ву: GFS Name of building: Moera Community Hall 23/08/2019 Date: City: Moera, Hutt City Revision No.:

Table IEP-1a Additional Photos and Sketches



LOWER HUTT CITY COUNCIL
TRUSS DETAILS, MOERA COMMUNITY HALL.

SCALE H REYNOLDS BAC NCH TO I FOOT CITY ENGINEER

M. 94.



WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedureset out "The Seismic Assessment of Existing Buildings" Technical Guidelines for Engineering Assessments, July 2017. This spreadsheet must be read in conjunction with the limitations set out in the accompanying report, and should not be relied on by any party for any other purpose. Detailed inspections and engineering calculations, or engineering judge ments based on them, have not been undertaken, and these may lead to a different result or seismic grade.

1. Building Information	1
Building Name/ Description	Moera Community Hall
Street Address	105 Randwick Crescent, Moera
Territorial Authority	Hutt City Council
No. of Storeys	1
Area of Typical Floor (approx.)	300 sqm
Year of Design (approx.)	Not confirmed assumed prior to 1935
NZ Standards designed to	NA
Structural System including Foundations	Timber framed structure with lined walls with a mixture of lined and diagonal timber braced walls with weatherboard cladding. Sarked timber framed roof with piles and concrete foundation wall.
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	Flat even ground profile, subsoil D, variable potential for liquefaction
Previous strengthening and/ or significant alteration	1950 – Addition of eastern wing 1980s – minor building additions
Heritage Issues/ Status	Nil
Other Relevant Information	Nil

2. Assessment Information		
Consulting Practice		
CPEng Responsible, including: Name CPEng number A statement of suitable skills and experience in the seismic assessment of existing buildings ¹		
Documentation reviewed, including: • date/ version of drawings/ calculations ² • previous seismic assessments	1950 Truss details – eastern extension 1982/1983 entry and eastern additions	
Geotechnical Report(s)	NA – subsoil assumed based on local knowledge refer to section 3	
Date(s) Building Inspected and extent of inspection	21 August 2019	
Description of any structural testing undertaken and results summary	None	
Previous Assessment Reports	NA	
Other Relevant Information	Nil	

¹ This should include reference to the engineer's Practice Field being in Structural Engineering, and commentary on experience in seismic assessment and recent relevant training

 $^{^{\}rm 2}$ Or justification of assumptions if no drawings were able to be obtained

3. Summary of Engineering Assessment Methodology and Key Parameters Used			
Occupancy Type(s) and Importance Level	Importance Level 2		
Site Subsoil Class	D assumed based on local knowledge and NZS1170.5:2004 Site Subsoil Classification of Lower Hutt http://nzsee.org.nz/db/2011/013.pdf		
For an ISA:			
 Summary of how Part B was applied, including: Key parameters such as μ, Sp and F factors Any supplementary specific calculations 	Ductility – 2.0 lined and braced timber framed walls Sp Factor – 0.5 for lightweight timber structure F Factor – 2.0 both directions based on the arrangement and length of the bracing walls, sarked roof with lightweight cladding. Eastern 1950s addition improved capacity of the Halls transverse capacity.		
For a DSA:			
Summary of how Part C was applied, including: • the analysis methodology(s) used from C2 • other sections of Part C applied	NA		
Other Relevant Information	NA		

4. Assessment Outcomes				
Assessment Status (Draft or Final)	Final			
Assessed %NBS Rating	45%NBS IL2			
Seismic Grade and Relative Risk (from Table A3.1)	C Grade 5 to 10 times risk comparable to new building			
For an ISA:				
Describe the Potential Critical Structural Weaknesses	None identified			
Does the result reflect the building's expected behaviour, or is more information/ analysis required?	Yes – the ISA is sufficient			
If the results of this ISA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified:	Engineering Statement of Structural Weaknesses and Location NA	Mode of Failure and Physical Consequence Statement(s) NA		
For a DSA:				
Comment on the nature of Secondary Structural and Non-structural elements/ parts identified and assessed				
Describe the Governing Critical Structural Weakness				
If the results of this DSA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified (including Parts) ³ :	Engineering Statement of Structural Weaknesses and Location	Mode of Failure and Physical Consequence Statement(s)		
Recommendations (optional for EPB purposes)				

³ If a building comprises a shared structural form or shares structural elements with other adjacent titles, information about the extent to which the low scoring elements affect, or do not affect the structure.