

This initial evaluation process has been carried out solely as a screening tool in terms of the Wellington City Council's (WCC's) Earthquake-Prone Buildings Policy 2009 (Policy) and the New Zealand Society for Earthquake Engineering document 'Recommendations for the Assessment and Improvement of the Structural Performance of Buildings in Earthquakes'. It should not be relied on by anyone for any other purpose. Detailed inspections and engineering calculations, or engineering judgements based on them, have not been undertaken, and they may lead to a different result or seismic grade. Council recommends owners obtain a detailed assessment for their buildings.

Table IEP-1 Initial Evaluation Procedure Step 1

(Refer Table IEP - 2 for Step 2; Table IEP - 3 for Step 3, Table IEP - 4 for Steps 4, 5 and 6)

Street Number & Name:	116 Cuba St	Ref:	WCC 1113, Lot#8
Location:	Te Aro	By:	Beca - JKB
AKA / Name of building:	Left Bank	WUFI	1165426
		Date:	13/03/2007

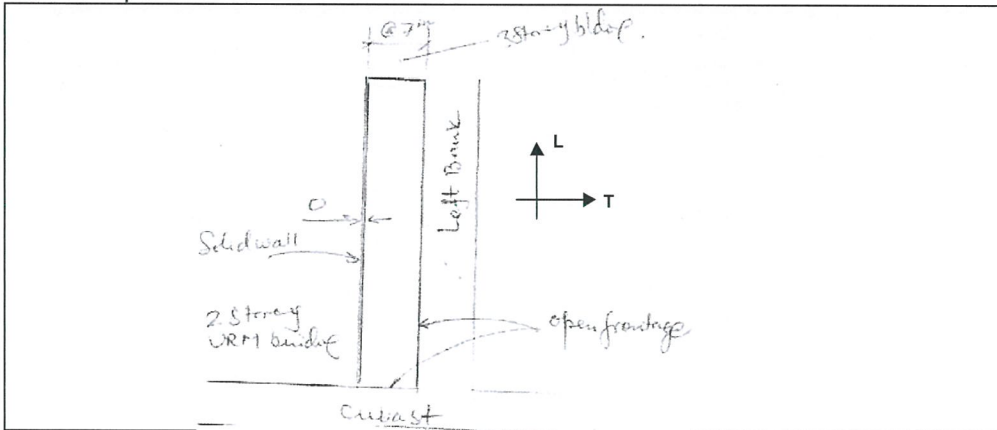
Step 1 - General Information

1.1 Photos (attach sufficient to describe building)



Note: There is additional room for photos and sketches on page IEP-1a

1.2 Sketch of plan



Note: There is additional room for photos and sketches on page IEP-1a

1.3 List relevant features

- Occupancy: Shops, residential
- RC walls, URM
- 3 storey high
- Well maintained
- Floor/ roof diaphragm noty known
- Higher 1st storey (@ 4 m), lower upper storey (@ 3.6 m)

1.4 Note information sources

Visual Inspection of Exterior	<input checked="" type="checkbox"/>
Visual Inspection of Interior	<input type="checkbox"/>
Drawings (note type)	<input type="checkbox"/>
Specifications	<input type="checkbox"/>
Geotechnical Reports	<input type="checkbox"/>
Other (list)	<input checked="" type="checkbox"/>
WCC Summary, Aerial photomap, Wellington cityscope map	

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Table IEP-2 Initial Evaluation Procedure Step 2

(Refer Table IEP - 1 for Step 1; Table IEP - 3 for Step 3; Table IEP - 4 for Steps 4, 5 and 6)

Street Number & Name:	116 Cuba St	Ref.	WCC 1113, Lot#8
Location:	Te Aro	By	Beca - JKB
Direction Considered:	a) Longitudinal b) Transverse	Date:	13/03/2007

(Choose worse case if clear at start. Complete IEP-2 and IEP-3 for each if in doubt)

Step 2 - Determination of (%NBS)_b

2.1 Determine nominal (%NBS) = (%NBS)_{nom}

(Baseline (%NBS) for particular building - refer Section B5)

a) Date of Design and Seismic Zone

Date of Design: Pre 1935
(or date of code strengthened to)
 1935-1965
 1965-1976
 1976-1992
 1992-2004

Strengthening
 Tick if known to have been Strengthened
 If strengthened enter original design date:
 See Note 4 below also

Building Category:

Seismic Zone:

b) Soil Type

From NZS1170.5:2004, CI 3.1.3 :

A or B Rock
 C Shallow Soil
 D Soft Soil
 E Very Soft Soil

From NZS4203:1992, CI 4.6.2.2 :
 (for 1992 to 2004 only and only if known)

Rigid
 Intermediate or Not Known

c) Estimate Period, T

Comment: $H = 4 + 3.6 * 2 = 11.2$ m

Moment Resisting Concrete Frames: $T = 0.09 h_n^{0.75}$
 Moment Resisting Steel Frames: $T = 0.14 h_n^{0.75}$
 Eccentrically Braced Steel Frames: $T = 0.08 h_n^{0.75}$
 All Other Frame Structures: $T = 0.06 h_n^{0.75}$
 Concrete Shear Walls: $T = 0.09 h_n^{0.75} / A_c^{0.5}$
 Masonry Shear Walls: $T \leq 0.4$ sec
 User Defined (input Period):

Longitudinal	Transverse
$h_n = 11.2$	11.2 m
$A_c = 1.00$	1.00 m ²

MRCF MRCF
 MRSF MRSF
 EBSF EBSF
 Others Others
 CSW CSW
 MSW MSW
 Defined Defined

0.40 0.40 Seconds

d) (%NBS)_{nom} determined from Figure 3.3

Longitudinal:	2.86%
Transverse:	2.86%

Note 1: For buildings designed prior to 1965 and known to be designed as public buildings in accordance with the code of the time, multiply (%NBS)_{nom} by 1.25. **FALSE**

For buildings designed 1965 - 1976 and known to be designed as public buildings in accordance with the code of the time, multiply (%NBS)_{nom} by 1.33 - Zone A, or by 1.2 - Zone B

Note 2: For reinforced concrete buildings designed between 1976-84 multiply (%NBS)_{nom} by 1.2 **FALSE**

Note 3: For buildings designed prior to 1935 multiply (%NBS)_{nom} by 0.8 except for Wellington where the factor may be taken as 1. **1.00**

Note 4: If the building is known to have been strengthened, enter the percentage of the code selected in 2.1 a) that the building has been strengthened to for each direction. If not strengthened, enter 100%. **100%** Longitudinal Direction
100% Transverse Direction

(%NBS)_{nom}	
Longitudinal:	2.86%
Transverse:	2.86%

(Scaled as per Notes 1 to 4)

Continued over page.....

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor A

If $T \leq 1.5$ sec, Factor A = 1

a) Near Fault Factor, $N(T,D)$
 (from NZS1170.5:2004, Cl 3.1.6)

Longitudinal: 1
 Transverse: 1

b) Near Fault Scaling Factor =

$1/N(T,D)$

Factor A
 Longitudinal: 1.00
 Transverse: 1.00

2.3 Hazard Scaling Factor, Factor B

a) Hazard Factor, Z , for site
 (from NZS1170.5:2004, Table 3.3)

Site Area : Wellington CBD (north of Basin)
 $Z = 0.4$
 $Z_{1992} =$

b) Hazard Scaling Factor

For pre 1992 = $1/Z$
 For 1992 onwards = Z_{1992}/Z

(Where Z_{1992} is the NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))

Factor B
 2.50

2.4 Return Period Scaling Factor, Factor C

a) Building Importance Level
 (from NZS1170.0:2004, Table 3.1 and 3.2)

Choose Importance Level
 1 2 3 4

Comment:

b) Return Period Scaling Factor from accompanying Table 3.1

Factor C
 1.00

2.5 Ductility Scaling Factor, D

a) Assessed Ductility of Existing Structure, μ
 (shall be less than maximum given in accompanying Table 3.2)

$\mu = 1.50$ Longitudinal Direction
 $\mu = 1.50$ Transverse Direction
 max = 2

b) Ductility Scaling Factor

	Longitudinal	Transverse
For pre 1976	k_{μ}	k_{μ}
	1.29	1.29
For 1976 onwards	1	1

(where k_{μ} is NZS1170.5:2004 Ductility Factor, from accompanying Table 3.3)

Factor D
 Longitudinal: 1.29
 Transverse: 1.29

2.6 Structural Performance Scaling Factor, Factor E

a) Structural Performance Factor, S_p
 from accompanying Figure 3.4

$S_p = 0.85$ Longitudinal Direction
 $S_p = 0.85$ Transverse Direction

b) Structural Performance Scaling Factor
 = $1/S_p$

Factor E
 Longitudinal: 1.18
 Transverse: 1.18

2.7 Baseline %NBS for Building, $(\%NBS)_b$
 (equals $(\%NSB)_{nom} \times A \times B \times C \times D \times E$)

Longitudinal : 11%
 Transverse : 11%

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Table IEP-3 Initial Evaluation Procedure Step 3

(Refer Table IEP - 1 for Step 1; Table IEP - 2 for Step 2; Table IEP - 4 for Steps 4, 5 and 6)

Street Number & Name:	116 Cuba St	Ref. VCC 1113, Lot#8
Location:	Te Aro	By: Beca - JKB
Direction Considered:	a) Longitudinal & b) Transverse	Date: 13/03/2007
<i>(Choose worse case if clear at start. Complete IEP-2 and IEP-3 for each if in doubt)</i>		

a) Longitudinal Direction

Step 3 - Assessment of Performance Achievement Ratio (PAR)

(Refer Appendix B - Section B3.2)

Critical Structural Weakness	Effect on Structural Performance (Choose a value - Do not interpolate)	Building Score
3.1 Plan Irregularity <i>Effect on Structural Performance</i>	<input checked="" type="checkbox"/> Severe <input type="checkbox"/> Significant <input type="checkbox"/> Insignificant <i>Comment</i> Solid wall on one side and open frame in opposite side	Factor A 0.4
3.2 Vertical Irregularity <i>Effect on Structural Performance</i>	<input checked="" type="checkbox"/> Severe <input type="checkbox"/> Significant <input type="checkbox"/> Insignificant <i>Comment</i> Solid walls in upper, open frame in 1st storey (along Left Bank)	Factor B 0.4
3.3 Short Columns <i>Effect on Structural Performance</i>	<input type="checkbox"/> Severe <input type="checkbox"/> Significant <input checked="" type="checkbox"/> Insignificant <i>Comment</i>	Factor C 1.0
3.4 Pounding Potential <i>(Estimate D1 and D2 and set D = the lower of the two, or =1.0 if no potential for pounding)</i>		

a) Factor D1: - Pounding Effect
Select appropriate value from Table

Note:
Values given assume the building has a frame structure. For stiff buildings (eg with shear walls), the effect of pounding may be reduced by taking the co-efficient to the right of the value applicable to frame buildings.

Factor D1 For Longitudinal Direction: 0.7			
Table for Selection of Factor D1	Severe 0 < Sep < .005H	Significant .005 < Sep < .01H	Insignificant Sep > .01H
Alignment of Floors within 20% of Storey Height	<input checked="" type="checkbox"/> 0.7	<input type="checkbox"/> 0.8	<input type="checkbox"/> 1
Alignment of Floors not within 20% of Storey Height	<input type="checkbox"/> 0.4	<input type="checkbox"/> 0.7	<input type="checkbox"/> 0.8
<i>Comment: a three storey building in back</i>			

b) Factor D2: - Height Difference Effect
Select appropriate value from Table

Factor D2 For Longitudinal Direction: 1.0			
Table for Selection of Factor D2	Severe 0 < Sep < .005H	Significant .005 < Sep < .01H	Insignificant Sep > .01H
Height Difference > 4 Storeys	<input type="checkbox"/> 0.4	<input type="checkbox"/> 0.7	<input type="checkbox"/> 1
Height Difference 2 to 4 Storeys	<input type="checkbox"/> 0.7	<input type="checkbox"/> 0.9	<input type="checkbox"/> 1
Height Difference < 2 Storeys	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<i>Comment:</i>			

Factor D 0.7

(Set D = lesser of D1 and D2 or..
set D = 1.0 if no prospect of pounding)

3.5 Site Characteristics - (Stability, landslide threat, liquefaction etc)

Severe	Significant	Insignificant	Factor E
<input type="checkbox"/> 0.5max	<input type="checkbox"/> 0.7	<input checked="" type="checkbox"/> 1	1.0

Comment:

3.6 Other Factors

For ≤ 3 storeys - Maximum value 2.5, otherwise - Maximum value 1.5. No minimum.	Factor F	1.2
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Record rationale for choice of Factor F:

No signs of deterioration, not sure about rigid diaphragm.

3.7 Performance Achievement Ratio (PAR)
(equals A x B x C x D x E x F) PAR (Longitudinal): 0.13

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b) Transverse Direction

Step 3 - Assessment of Performance Achievement Ratio (PAR)
(Refer Appendix B - Section B3.2)

Critical Structural Weakness	Effect on Structural Performance (Choose a value - Do not interpolate)	Building Score
3.1 Plan Irregularity <i>Effect on Structural Performance</i>	<input type="checkbox"/> Severe <input type="checkbox"/> Significant <input checked="" type="checkbox"/> Insignificant Comment:	Factor A <input style="width: 50px;" type="text" value="1.0"/>
3.2 Vertical Irregularity <i>Effect on Structural Performance</i>	<input checked="" type="checkbox"/> Severe <input type="checkbox"/> Significant <input type="checkbox"/> Insignificant Comment: Same as L-dir	Factor B <input style="width: 50px;" type="text" value="0.4"/>
3.3 Short Columns <i>Effect on Structural Performance</i>	<input type="checkbox"/> Severe <input type="checkbox"/> Significant <input checked="" type="checkbox"/> Insignificant Comment:	Factor C <input style="width: 50px;" type="text" value="1.0"/>

3.4 Pounding Potential
(Estimate D1 and D2 and set D = the lower of the two, or =1.0 if no potential for pounding)

a) Factor D1: - Pounding Effect
Select appropriate value from Table

Note:
Values given assume the building has a frame structure. For stiff buildings (eg with shear walls), the effect of pounding may be reduced by taking the co-efficient to the right of the value applicable to frame buildings.

Factor D1 For Transverse Direction:

	Severe 0 < Sep < .005H	Significant .005 < Sep < .01H	Insignificant Sep > .01H
Alignment of Floors within 20% of Storey Height	<input checked="" type="checkbox"/> 0.7	<input type="checkbox"/> 0.8	<input type="checkbox"/> 1
Alignment of Floors not within 20% of Storey Height	<input type="checkbox"/> 0.4	<input type="checkbox"/> 0.7	<input type="checkbox"/> 0.8

Comment: 2 storey adjacent building (118 Cuba st)

b) Factor D2: - Height Difference Effect
Select appropriate value from Table

Factor D2 For Transverse Direction:

	Severe 0 < Sep < .005H	Significant .005 < Sep < .01H	Insignificant Sep > .01H
Height Difference > 4 Storeys	<input type="checkbox"/> 0.4	<input type="checkbox"/> 0.7	<input type="checkbox"/> 1
Height Difference 2 to 4 Storeys	<input type="checkbox"/> 0.7	<input type="checkbox"/> 0.9	<input type="checkbox"/> 1
Height Difference < 2 Storeys	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1

Comment:

Factor D
(Set D = lesser of D1 and D2 or..
set D = 1.0 if no prospect of pounding)

3.5 Site Characteristics - (Stability, landslide threat, liquefaction etc)

<input type="checkbox"/> 0.5max <input type="checkbox"/> 0.7 <input checked="" type="checkbox"/> 1	Factor E <input style="width: 50px;" type="text" value="1"/>
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3.6 Other Factors

For ≤ 3 storeys - Maximum value 2.5, otherwise - Maximum value 1.5. No minimum.	Factor F <input style="width: 50px;" type="text" value="1.2"/>
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Record rationale for choice of Factor F:
Same as L-dir

3.7 Performance Achievement Ratio (PAR)
(equals A x B x C x D x E x F)

PAR (Transverse):

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Table IEP-1a Additional Photos and Sketches

Page 1a

(Refer Table IEP - 2 for Step 2; Table IEP - 3 for Step 3, Table IEP - 4 for Steps 4, 5 and 6)

Street Number & Name:	116 Cuba St	Ref:	WCC 1113, Lot#8
Location:	Te Aro	By:	Beca - JKB
		Date:	13/03/2007

Add any additional photographs or sketches required below:

Note: print this page separately



Side view at the Rear



Adj building