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, or engineering judgements based on them, have not been undertaken, and these may lead to a different result or seismic grade.

Street Number & Name:	611A Marine Drive	Job No.:	5-C3957.00
AKA:	16B Pitoitoi Road	Ву:	GSF
Name of building:	Days Bay Pavilion	Date:	11/12/2019
City:	Eastbourne, Hutt City	Revision No.:	0

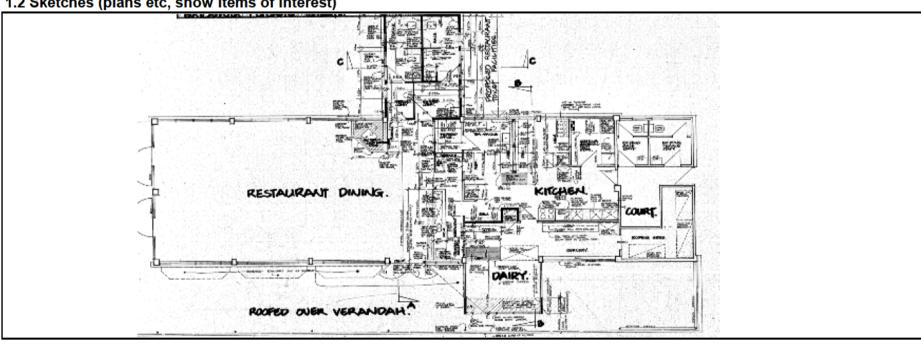
Table IEP-1 Initial Evaluation Procedure Step 1

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 r	orint in this box. If further text requi	red use Page 1a)	
Structure: Reinforced concrete colu Foundations: Concrete slab on grad Roof: Steel frames with heavy roof t	e			
Subsoil: C Shallow soils - NZS1170.5	:2004 Site Subsoil Classification	of Lower Hutt		
Construction Date: 1955				
1.4 Note information sources	Tick as appropriate			
Visual Inspection of Exterior Visual Inspection of Interior		Specifications Geotechnical Reports		

Other (list)

Information Reviewed: 1983 drawings and specification

Drawings (note type)

treet Number & Name .KA:	: 611A Marine Dri 16B Pitoitoi Roa			Job No.: By:	5-C3957.00 GSF
ame of building:	Days Bay Pavilio	on		Date:	11/12/2019
ity:	Eastbourne, Hut	tt City		Revision No.:	0
able IEP-2 Init	ial Evaluation Procedu	ıre Step 2			
	cular building - refer Section B5)				
.1 Determine nominal	(%NBS) = (%NBS) _{nom}		<u>Longitudir</u>	<u>nal</u>	<u>Transverse</u>
a) Building Strengtheni	ng Data				
Tick if building is kn	own to have been strengthened i	n this direction			
If strengthened, ent	er percentage of code the buildin	g has been strengthened	to N/A		N/A
b) Year of Design/Streng	gthening, Building Type and Se	ismic Zone			
			Pre 1935	0	Pre 1935 🔘
			1935-1965	•	1935-1965
				0	1965-1976 () 1976-1984 ()
				0	1976-1984 () 1984-1992 ()
			1992-2004	$\tilde{\circ}$	1992-2004
			2004-2011	O	2004-2011
			Post Aug 2011	0	Post Aug 2011 🔘
		Building Type:	Public Buildings	T	Public Buildings
		Seismic Zone:	Not applic	cable	Not applicable
c) Soil Type From NZS11	70.5:2004, CI 3.1.3 :		C Shallow Soil	▼	Shallow Soil
	03:1992, Cl 4.6.2.2 : 2004 and only if known)		Not applic	cable	Not applicable
d) Estimate Period, T				_	
Comment:			$h_n = $	_	5 m 1.00 m ²
			A _c = 1.00		1.00
Moment Resisting Co	oncrete Frames:	$T = \max\{0.09h_n^{0.75}, 0.4\}$	•		•
Moment Resisting St		$T = \max\{0.14h_n^{0.75}, 0.4\}$			O
Eccentrically Braced All Other Frame Stru		$T = \max\{0.08h_n^{0.75}, 0.4\}$ $T = \max\{0.06h_n^{0.75}, 0.4\}$	0		0
Concrete Shear Wall		$T = \max\{0.09h_n^{0.75}/A_c^{0.5}, 0.4\}$	00000		Ö
Masonry Shear Wall		T ≤ 0.4sec	Õ		• 00000
User Defined (input F			0		0
V L	Where h _n = height in metres from the base uppermost seismic weight or mass.	e of the structure to the	T: 0.40		0.40
	•		1. 0.40	_	0.40
e) Factor A: Strengthe	ning factor determined using result from (a) above (set to 1.0	Factor A: 1.00	,	1.00
f) Factor B: Determine	ngthened) ed from NZSEE Guidelines Figure 3A.1 us		Factor B: 0.04		0.04
g) Factor C: For reinfo	to (e) above rced concrete buildings designed betweer therwise take as 1.0.	n 1976-84 Factor	Factor C: 1.00		1.00
h) Factor D: For buildi	ngs designed prior to 1935 Factor D = 0.8 er (1931-1935) where Factor D may be tal	except for Wellington ken as 1.0, otherwise	Factor D: 1.00	-	1.00
(%NBS) _{nom} = AxBxCx	D	((%NBS) _{nom} 4%		4%

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AKA:	611A Marine 16B Pitoitoi F		Job t By:	No.: 5-C3957.00 GSF
lame of building:	Days Bay Pay		Date:	
City:	Eastbourne,			sion No.: 0
able IEP-2 Initial Ev	aluation Proce	edure Step 2	2 continued	
.2 Near Fault Scaling Factor, If $T \le 1.5$ sec, Factor E = 1			<u>Longitudinal</u>	<u>Transverse</u>
a) Near Fault Factor, N(T,D)			N(T,D): 1	1
(from NZS1170.5:2004, CI 3.1.6)				
b) Factor E		= 1/N(T,D)	Factor E: 1.00	1.00
.3 Hazard Scaling Factor, Fa a) Hazard Factor, <i>Z</i> , for site	ctor F			
Location	On: Hutt Valley-south of	Taita Gorge 🔻	Refer right for user-defined locations	
	Z = 0.4	(from NZS1170	.5:2004, Table 3.3)	
	992 = 1.2	(NZS4203:1992	2 Zone Factor from accompanying Figure 3.5(b))	
Z ₂₀₀	0.4	(from NZS1170	.5:2004, Table 3.3)	
b) Factor F				
For pre 1992 For 1992-2011	=	1/Z 7/7		
For 1992-2011 For post 2011	=	Z ₁₉₉₂ /Z Z ₂₀₀₄ /Z		
1 01 0031 20 1 1	-	~ 20041 ~	Factor F: 2.50	2.50
			2.30	2.50
 building set to 1.33 for Zone A or 1.2 fo b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or 			R _o = 1	1
c) Return Period Factor, R				
(from NZS1170.0:2004 Building Impor	rtance Level)	Choose Imp	ortance Level O 1	O1
(nom N231170.0.2004 Building Impor		•		
(ITOH) 1423 1170.0.2004 Building Impor			R = 1.0	1.0
	=	IR _o /R	R = 1.0	1.0
d) Factor G				
d) Factor G	actor H	IR _o /R	R = 1.0	1.0
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment:	actor H	IR _o /R	R = 1.0	1.0
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct	actor H	IR _o /R	R = 1.0	1.25
d) Factor G 5.5 Ductility Scaling Factor, F a) Available Displacement Duct Comment:	actor H	IR _o /R	R = 1.0	1.25
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames	actor H tility Within Existing For pre 1976 (ma	IR _o /R Structure aximum of 2)	Factor G: 1.25 $\mu = 2.00$ $= \frac{k_{\mu}}{1.57}$	1.0
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames	actor H tility Within Existing	IR _o /R Structure aximum of 2)	Factor G: 1.25 $\mu = 2.00$ $= 1.57$ $= 1$	1.0 1.25 2.00 k_{μ} 1.57 1
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames	For pre 1976 (ma	IR _o /R Structure aximum of 2)	Factor G: 1.25 $\mu = 2.00$ $= 1.57$ $= 1$ Factor H: 1.57	1.0 1.25 2.00
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames b) Factor H (where kμ is NZS1170.5:2004 Inelastic	For pre 1976 (ma For 1976 onward c Spectrum Scaling Factor,	IR _o /R Structure aximum of 2) ds from accompanying 1	Factor G: 1.25 $\mu = 2.00$ $= 1.57$ $= 1$ Factor H: 1.57	1.0 1.25 2.00 k_{μ} 1.57 1
d) Factor G .5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames b) Factor H (where kμ is NZS1170.5:2004 Inelastic	For pre 1976 (ma For 1976 onward c Spectrum Scaling Factor, caling Factor, Factor, or, S _p	IR _o /R Structure aximum of 2) Is from accompanying 1	Factor G: 1.25 $\mu = 2.00$ $= 1.57$ $= 1$ Factor H: 1.57	1.0 1.25 2.00 k_{μ} 1.57 1
d) Factor G 2.5 Ductility Scaling Factor, F a) Available Displacement Duct Comment: Reinforced concrete frames b) Factor H (where kμ is NZS1170.5:2004 Inelastic 2.6 Structural Performance Scal) Structural Performance Factor (from accompanying Figure 3.4)	For pre 1976 (ma For 1976 onward c Spectrum Scaling Factor, caling Factor, Fact or, S _p	IR _o /R Structure aximum of 2) Is from accompanying 1 cor I tion = 1/S _p	Factor G: 1.25 $\mu = 2.00$ k_{μ} 1.57 k_{μ} Factor H: 1.57 Factor I: 1.43	1.0 1.25 2.00 k _μ 1.57 1 1.57

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(A:	16B Pitoitoi Roa			By		GSF
me of building:	Days Bay Pavilio				ate:	11/12/2019
ty:	Eastbourne, Hut	t City		Re	evision No.:	0
able IEP-3 Initial Ev	/aluation Procedu	re Step 3				
ep 3 - Assessment of Per efer Appendix B - Section B3.2)	formance Achievem	ent Ratio (PAR)				
Longitudinal Direction						
potential CSWs		Effect on Struct				Facto
Plan Irregularity		(Choose a value -	Do not interpo	late)		
Effect on Structural Performa	ance	∩S	ignificant		Insignificant	Factor A 1.0
Comment: Nil		0.5	g		() meigrime and	
Vertical Irregularity						
Effect on Structural Performa	ance O Severe	∩ S	ignificant		Insignificant	Factor B 1.0
Comment: Nil	Ü					
Short Columns						<u></u>
Effect on Structural Performa	ance O Severe	os	ignificant		Insignificant	Factor C 1.0
Comment: Nil						
Factor D1: - Pounding Effective Note: Values given assume the may be reduced by takin					ct of pounding	
Note: Values given assume the		ight of the value appl	icable to frame	buildings.		
Note: Values given assume the	g the coefficient to the ri	ight of the value appl	or D1 For Lo	ngitudinal Dire	ection: 1.0	
Note: Values given assume the may be reduced by takin Table for Selection o	g the coefficient to the ri	ight of the value appl Fact Separation	or D1 For Lo Severe 0 <sep<.005h< td=""><td>ngitudings. Significant .005<sep<.01h< td=""><td>ection: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<></td></sep<.005h<>	ngitudings. Significant .005 <sep<.01h< td=""><td>ection: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<>	ection: 1.0 Insignificant Sep>.01H	
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me of building:	Days Bay Pavilion		Date:	11/12/2019
ty:	Eastbourne, Hutt City		Revision No.:	0
	Evaluation Procedure Step 3 Performance Achievement Ratio (PAR)			
efer Appendix B - Section B3.	` ,			
Transverse Direction				Facto
potential CSWs		uctural Performano e - Do not interpolato		
Plan Irregularity Effect on Structural Perfo	rmance Severe	Significant	♠ Insignifica	ent Factor A 1.0
Comment: Nil		J	©	
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treet Number & Name: KA: ame of building: ity:	611A Marine Drive 16B Pitoitoi Road Days Bay Pavilion Eastbourne, Hutt City	Job No.: By: Date: Revision No.:	5-C3957.00 GSF 11/12/2019 0
able IEP-4 Initial E	valuation Procedure Steps 4, 5, 6 and	17	
tep 4 - Percentage of Ne	w Building Standard (%NBS)	Longitudinal	Transverse
.1 Assessed Baseline %/\(\) (from Table IEP - 1)	IBS (%NBS) _b	25 %	25%
.2 Performance Achieven (from Table IEP - 2)	nent Ratio (PAR)	2.00	2.00
.3 PAR x Baseline (%NBS	5) _b	50%	50%
.4 Percentage New Build (Use lower of two value	ing Standard <i>(%NBS)</i> - Seismic Rating es from Step 4.3)		50%
tep 5 - Is <i>%NBS</i> < 34?			NO
tep 6 - Potentially Earthq	uake Risk (is <i>%NBS</i> < 67)?		YES
tep 7 - Provisional Gradi	ng for Seismic Risk based on IEP	Seismic Grad	еС
Additional Comments (its	ems 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 procedure set 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 judgements based on them, have not been undertaken, and these $\it may \, lead \, to \, a \, \it different \, result \, or \, seismic \, grade.$

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

Page 7

Street Number & Name:	611A Marine Drive	Job No.:	5-C3957.00
AKA:	16B Pitoitoi Road	By:	GSF
Name of building:	Days Bay Pavilion	Date:	11/12/2019
City:	Eastbourne, 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 Signature

Name

CPEng. No

WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set 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 judgements 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 1a

Street Number & Name:	611A Marine Drive	Job No.:	5-C3957.00
AKA:	16B Pitoitoi Road	By:	GSF
Name of building:	Days Bay Pavilion	Date:	11/12/2019
City:	Eastbourne, Hutt City	Revision No.:	0

Table IEP-1a Additional Photos and Sketches

Add any additional photographs, notes or sketches required below:









WARNING!! This initial evaluation has been carried out solely as an initial seismic assessment of the building following the procedure set 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 judgements 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	Williams Park, Days Bay Pavilion
Street Address	611A Marine Drive or 16B Pitoitoi Road, Eastbourne
Territorial Authority	Hutt City Council
No. of Storeys	1
Area of Typical Floor (approx.)	350 sqm
Year of Design (approx.)	1955
NZ Standards designed to	NA
Structural System including Foundations	Reinforced concrete frames, concrete columns with eave beams. Steel portal roof frames support heavy tile roof cladding. Concrete slab on grade foundations.
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 rising steeply behind the buildings, subsoil C assumed
Previous strengthening and/ or significant alteration	1983 – significant alterations, lined timber framed walls
Heritage Issues/ Status	Nil
Other Relevant Information	None

2. Assessment Informa	tion
Consulting Practice	WSP New Zealand Ltd
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	1955 - Photo of building under construction 1983 – Proposed extension drawings job number 83-7 sheets 1 to 5 by the Wellington City Corporation, including specifications on the sheets. 1998 - Proposed Plan and Elevation drawing number SK-03, by Interact Architects and Designers.
Geotechnical Report(s)	NA – assumed based on local knowledge refer to section 3
Date(s) Building Inspected and extent of inspection	11 December 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, S_p and F factors Any supplementary specific calculations 	Ductility – 2.0 reinforced concrete frames Sp Factor – 0.70 F Factor – 2.0 both directions based on the regular arrangement of the primary structure. Additional structure is typically lightweight braced timber framed walls	
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	50%NBS IL2		
Seismic Grade and Relative Risk (from Table A3.1)	C - 5 – 10 times greater		
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, <u>and</u> 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)			

Assessment Summary Report

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.