

Avalon Park Pavilion 61 Taita Drive, Avalon

Initial Seismic Assessment

for Hutt City Council



Project 9741

December 2019



9741

17 December 2019 Private Bag 31912 Lower Hutt 5040

Attention: Aaron Marsh

Dear Aaron,

Initial Seismic Assessment Report Avalon Park Pavilion, 61 Taita Drive, Avalon

We have now completed an Initial Seismic Assessment (ISA) of the Avalon Park Pavilion at 61 Taita Drive, Avalon using the Initial Evaluation Procedure (IEP) as described in Part B of the guideline document, *The Seismic Assessment of Existing Buildings-Technical Guidelines for Engineering Assessments*, dated August 2017. The assessment was carried out after completing a site visit on Wednesday 4 December 2019.

Executive Summary

This building has been rated against the new building standard for a normal structure which is regarded as Importance Level 2 (IL2) in accordance with NZS1170.5:2004.

The assessed potential earthquake rating is 40%NBS (IL2) in both the longitudinal (SE-NE) and transverse (NW-SE) directions, which gives it a seismic 'Grade C'. Therefore, the potential status of the building is Earthquake Risk and not Earthquake Prone.

A "Severe Structural Weakness" (SSW) is a structural weakness for which rupture would lead to a catastrophic collapse. No Severe Structural Weaknesses have been identified.

The Initial Seismic Assessment (ISA) is considered to provide a relatively quick, high-level and qualitative measure of the building's performance. A more reliable result would be obtained from a Detailed Seismic Assessment (DSA). A DSA could find structural aspects of concern that have not been identified from the IEP. Alternatively, a detailed structural assessment may show that structural aspects of potential concern identified in this IEP may have in fact been addressed in the design of the building.



Introduction

Hutt City Council has engaged Sawrey Consulting Engineers Ltd (SCEL) to carry out an Initial Seismic Assessment (ISA) of the Avalon Park Pavilion located at 61 Taita Drive in Avalon, Lower Hutt. This ISA is based on the Initial Evaluation Procedure (IEP) as defined in *Technical Guidelines for Engineering Assessments* referenced above.

Earthquake Prone Building (EPB) methodology is used to identify earthquake-prone buildings, and has been produced by the Ministry of Business, Innovation and Employment in accordance with the Building Act 2004. This ISA meets the requirements of an engineering assessment as prescribed in the EPB methodology.

Background to the IEP and Its Limitations

The IEP procedure was developed in 2006 by the New Zealand Society for Earthquake Engineering (NZSEE) and updated in 2017 to reflect experience with its application and also as a result of experience from the Canterbury earthquakes of 2010/11. It is a tool to assign a percentage of New Building Standard (%NBS) rating and associated grade to a building as part of an Initial Seismic Assessment of existing buildings.

The IEP enables building owners and managers to review their building stock as part of an overall risk management process.

Characteristics and limitations of the IEP include:

- An IEP assessment is primarily concerned with life safety. It does not consider the susceptibility of the building to damage, and therefore to economic losses.
- It tends to be somewhat conservative, identifying some buildings as earthquake prone, or having a lower %NBS score, which subsequent detailed investigation may indicate is less than actual performance. However, there will be exceptions, particularly when potential critical structural weaknesses (CSWs) are present that have not been recognised from the level of investigation employed.
- An IEP can be undertaken with variable levels of available information: e.g. exterior only inspection, structural drawings available or not, interior inspection, etc. The more information available, the more representative the IEP result is likely to be. The IEP records the information that has formed the basis of the assessment and consideration of this is important when determining the likely reliability of the result.
- It is an initial, first-stage review. Buildings or specific issues which the IEP process flags as being problematic or as potentially critical structural weaknesses need further detailed investigation and evaluation. A Detailed Seismic Assessment is recommended if the seismic status of a building is critical to any decision making.
- The IEP assumes that buildings have been designed and built in accordance with the building standard and good practice current at the time. In some instances, a building may include design features ahead of its time, leading to better than predicted performance. Conversely, some unidentified design or construction issues not picked up by the IEP process may result in the building performing not as well as predicted.



- It is a largely qualitative process and should be undertaken or overseen by an experienced engineer. It involves considerable knowledge of the earthquake behaviour of buildings, and judgement as to key attributes and their effect on building performance. Consequently, it is possible that the %NBS derived for a building by independent experienced engineers may differ.
- An IEP may over-penalise some apparently critical features which could have been satisfactorily taken into account in the design.
- An IEP does not take into account the seismic performance of non-structural items such as ceilings, plant, services or general glazing that are not considered to present a significant life safety hazard.

Experience to date is that the IEP is a useful tool to identify potential issues and expected overall performance of a building in an earthquake. However, the process and the associated %NBS rating and grade should be considered as only providing an indication of the building's compliance with current code requirements. A detailed investigation and analysis of the building will typically be required to provide a definitive assessment.

Basis for the Assessment

The information we have used for our IEP assessment includes:

- The building was constructed for Lower Hutt City Council in 1967.
- Subsoil class D has been used based on GNS Science's Lower Hutt Valley Site Subsoil Class Map and our engineering judgment.
- The period has been determined as being 0.40 seconds based on the reinforced masonry shear walls.
- A Hazard Scaling Factor of Z = 0.4 has been used based on the location of the site in the Hutt Valley, south of Taita Gorge.
- The building has been assumed to have an Importance Level 2 (normal structures).
- A ductility factor of μ = 2.0 has been assumed which is consistent with recommendations for a reinforced masonry building of this era.

The key assumptions made during our assessment are shown in Table 1 that follows.



Table 1: IEP Assumptions

IEP Item	Assumption	Justification
Date of Building Design	1967	This is the date on the original drawings
Soil Type	D	GNS Science's Lower Hutt Valley Site Subsoil Class Map
Building Importance Level	ding 2 AS/NZS1170.0	
Ductility of Structure	2.0	Reinforced masonry building
Plan Irregularity Factor, A	0.7	Significant
Vertical Irregularity Factor, B	1.0	Insignificant
Short Columns Factor, C	1.0	Insignificant
Pounding Factor, D	1.0	Insignificant
Site Characteristics	1.0	Insignificant – Greater Wellington GIS viewer indicates low liquefaction potential
Factor F	1.3	A significant number of reinforced masonry shear walls in both directions. Closely spaced portal frames across the hall. Potentia plan irregularity somewhat compensated for at ULS by bracing being relatively evenly distributed throughout the building.



Building Description

The building was constructed in 1967 for Lower Hutt City Council. It is single storey with a light metal-clad roof and brick veneer cladding. The foundations are shallow footings. There is a large lightweight verandah attached to the building on two sides.

There are steel portal frames across the hall. The remainder of the building has reinforced concrete shear walls.

IEP Assessment Result

Our IEP assessment of this building indicates the building can achieve 40%NBS (IL2) in both the longitudinal and transverse directions. The IEP assessment of this building therefore indicates an overall earthquake rating of 40%NBS (IL2 corresponding to a 'Grade C' building as defined by the New Zealand Society for Earthquake Engineering (NZSEE) building grading scheme. This is above the threshold for Earthquake Prone Buildings (34%NBS), but below the threshold for Earthquake Risk Buildings (67%NBS) as recommended by the NZSEE.

The key assumptions made during our assessment are shown in Table 1 above. Refer also to the attached IEP assessment and ISA technical summary report.

IEP Grades and Relative Risk

NZSEE (which provides authoritative advice to the legislation makers and should be considered to represent the consensus view of New Zealand structural engineers) classifies buildings achieving greater than 67%NBS as "Low or medium risk" and having "Acceptable (improvement may be desirable)" building structural performance.

Table 2 taken from the Technical Guidelines referred to earlier provides the basis for a proposed grading system for existing buildings, as one way of interpreting the %NBS earthquake rating.

This building has been classified by the IEP as a 'Grade C' building and is therefore considered to be a medium life-safety risk.

Building Grade	Percentage of New Building Strength (%NBS)	Approx. Risk Relative to a New Building	Life-safety Risk Description
A+	>100	<1	low risk
А	80 to 100	1 to 2 times	low risk
В	67 to 79	2 to 5 times	low or medium risk
С	34 to 66	5 to 10 times	medium risk
D	20 to 33	10 to 25 times	high risk
E	<20	more than 25 times	very high risk

Table 2: Relative Earthquake Risk



Seismic Restraint of Non-Structural Items

During an earthquake, the safety of people can be put at risk due to non-structural items falling on them. These items should be adequately seismically restrained, where possible, to the NZS 4219:2009 "The Seismic Performance of Engineering Systems in Buildings".

An assessment has not been made of bracing of the ceilings, services and plant. We have also not checked whether tall or heavy furniture has been seismically restrained or not. These issues are outside the scope of this initial assessment but could be the subject of another investigation.

Conclusion

Our ISA assessment for this building, carried out using the IEP indicates an overall score of 40%NBS (IL2), which corresponds to a 'Grade C' building, as defined by the NZSEE building grading scheme. This is *above* the threshold for Earthquake Prone Buildings (34%NBS) and *below* the threshold for Earthquake Risk Buildings (67%NBS) as defined by the NZSEE and the New Zealand Building Code.

The ISA is considered to provide a relatively quick, high-level and qualitative measure of the building's performance. In order to confirm the seismic performance of this building with more reliability you may wish to request a Detailed Seismic Assessment (DSA).

A DSA would also investigate other potential weaknesses that may not have been considered in the initial seismic assessment.

We note that a geotechnical desktop study would be required as part of the DSA.

We trust this letter and initial seismic assessment meets your current requirements. We would be pleased to discuss further with you any issues raised in this report. Please do not hesitate to contact us if you would like clarification of any aspect of this letter.

Yours faithfully

SAWREY CONSULTING ENGINEERS LTD





Appendix A: ISA Technical Summary Report Appendix B: IEP Form

Appendix A - ISA Technical Summary Report

Building Information	
Building Name/Description	Avalon Park Pavilion
Street Address	61 Taita Drive, Avalon, Lower Hutt
Territorial Authority	Hutt City Council
No. of Storeys	1
Area of Typical Floor	325m ²
(approx.)	
Year of Design (approx.)	1967
NZ Standard Designed to	NZSS 1900:1965
Structural System including	Steel portal frames across the hall. Reinforced masonry shear wall
Foundations	elsewhere. Foundations are shallow footings.
Key Features of Ground	The building is on a flat site. Greater Wellington GIS viewer indicates
Profile and Identified	low liquefaction potential.
Geohazards	
Previous Strengthening	None
Heritage Issues/Status	None
Other	N/A

Assessment Information	
Consulting Practice	Sawrey Consulting Engineers Ltd
CPEng Responsible	
Date/Version of Drawings	1967
Reviewed	
Geotechnical Report(s)	None
Date Building Inspected	4 December 2019
Previous Assessment	ISA dated 9 January 2015
Reports	
Other Relevant Information	N/A

Summary of Engineering Asse	Summary of Engineering Assessment Methodology and Key Parameters Used					
Occupancy Type(s) and	Importance Level IL2					
Importance Level						
Site Subsoil Class	D (Deep or Soft Soil)					
Summary of Assessment	The Seismic Assessment of Existing Buildings Technical Guidelines for					
Methodology Used	Engineering Assessments July 2017 Initial Seismic Assessment Part B.					
	High level assessment (basic data collected; exterior inspection; IEP)					
	plus an interior inspection.					
Other Relevant Information	N/A					

Assessment Outcomes	
Assessment Status	Final
Assessed Seismic Rating	40%NBS (IL2)
Seismic Grade	C (Medium Life Safety Risk)
Describe the Governing	More detailed assessment would be required to confirm the likely
Critical Structural Weakness	failure mode, but possibly the steel portal frames across the hall or the
and Likely Mode of Failure	reinforced masonry shear walls.
Comment on Parts Identified	Brick veneer cladding out-of-plane. Further investigation and analysis
and Assessed	would be necessary to determine actual capacity of brick veneer.
	Large verandah attached to two sides of building. Framing and roofing
	of verandah is lightweight. Further investigation and analysis would be
	necessary to determine actual capacity of verandah.
Recommendations	A Detailed Seismic Assessment (DSA) would be necessary to confirm
	the seismic performance of this building with more reliability. A DSA
	would also investigate other potential weaknesses that may not have
	been considered in the initial seismic assessment. We note that a
	geotechnical desktop study would be required as part of the DSA.

Appendix B – Initial Evaluation Procedure (IEP)





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.

 InA: Iame of building: Initian e of building: Initian e of building: Table IEP-2 Initian e of the second second	Avalon Park Pa Avalon, Lower tial Evaluation Proced on of (%NBS) _b icular building - refer Section B5 (%NBS) = (%NBS) _{nom} ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S	avilion Hutt dure Step 2 () d in this direction ting has been strengthened Seismic Zone Building Type: Seismic Zone:	By: Date: Revisio	KJG 16/12/2019 0 Transverse □ N/A Pre 1935 1935-1965 1935-1965 1965-1976 1976-1984 1984-1992 1984-1992 1992-2004 2004-2011 Post Aug 2011 Post Aug 2011 O Soft Soil Not applicable
 city: Table IEP-2 Ini Step 2 - Determinati Baseline (%NBS) for par 1 Determine nomina a) Building Strengther Tick if building is k If strengthened, er b) Year of Design/Stread b) Year of Design/Stread c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment: 	Avalon, Lower Avalon, Lower tial Evaluation Proced on of (%NBS) _b icular building - refer Section B5 (%NBS) = (%NBS) _{nom} ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S gthening, Building Type and S	Hutt dure Step 2	Longitudinal Image: constraint of the second seco	Transverse Image: Second state
 c) Soil Type c) Soil Type From NZS1 From NZS1 Gorment: 	tial Evaluation Proced on of (%NBS) _b cular building - refer Section B5 (%NBS) = (%NBS) _{nom} ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	dure Step 2	Longitudinal Longitudinal Longitudinal to N/A Pre 1935 () 1935-1965 () 1965-1976 () 1965-1976 () 1965-1976 () 1965-1976 () 1965-1976 () 1965-1976 () 1995-2004 () 2004-2011 () Post Aug 2011 () Pos	Image: Constraint of the second system
 c) Soil Type From NZS1 from nz54 (f) Estimate Period, T 	on of (%NBS) _b icular building - refer Section B5 (%NBS) = (%NBS) _{nom} ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	d in this direction ting has been strengthened Seismic Zone Building Type: Seismic Zone:	Longitudinal Image: constraint of the state of the stateo	Image: Constraint of the second state of the second sta
 asseline (%//BS) for par 1 Determine nomina a) Building Strengther Tick if building is k If strengthened, er b) Year of Design/Stren b) Year of Design/Stren c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment: 	cular building - refer Section B5 (%NBS) = (%NBS) _{nom} ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)) d in this direction ding has been strengthened Seismic Zone Building Type: Seismic Zone:	Longitudinal Image: constraint of the state of the stateo	Image: Constraint of the second system
 a) Building Strengther Tick if building is k If strengthened, er b) Year of Design/Stren b) Year of Design/Stren c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment: 	ing Data nown to have been strengthened ter percentage of code the build gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	d in this direction ling has been strengthened Seismic Zone Building Type: Seismic Zone:	Image: Constraint of the state of the s	□ N/A Pre 1935 1935-1965 1935-1966 1965-1976 1965-1976 1984-1992 1992-2004 1992-2004 2004-2011 Post Aug 2011
c) Soil Type From NZS1 From NZS4 (for 1992 to D) Estimate Period, T Comment:	ter percentage of code the build gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	d in this direction ting has been strengthened Seismic Zone Building Type: Seismic Zone:	to N/A Pre 1935 () 1935-1965 () 1965-1976 () 1976-1984 () 1976-1984 () 1992-2004 () 2004-2011 () Post Aug 2011 (N/A Pre 1935 1935-1965 1965-1976 1965-1976 1976-1984 1992-2004 2004-2011 Post Aug 2011 Public Buildings Zone A D Soft Soil
c) Soil Type From NZS1 From NZS4 (for 1992 to D Estimate Period, T Comment:	gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Seismic Zone Building Type: Seismic Zone:	Pre 1935 O 1935-1965 O 1965-1976 O 1976-1984 O 1984-1992 O 1992-2004 O 2004-2011 O Post Aug 2011 O Public Buildings V Zone A V D Soft Soil V Not applicable	N/A Pre 1935 1935-1965 1965-1976 1976-1984 1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Public Buildings Zone A D Soft Soil
b) Year of Design/Stree c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	gthening, Building Type and S 170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Seismic Zone Building Type: Seismic Zone:	Pre 1935) 1935-1965) 1965-1976) 1976-1884) 1984-1992) 1992-2004) 2004-2011) Post Aug 2011) Public Buildings * Zone A * D Soft Soil *	Pre 1935 1935-1965 1965-1976 1976-1984 1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Post Aug 2011 Public Buildings 2014 Zone A 1 D Soft Soil 1
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	Pre 1935) 1935-1965) 1965-1976) 1976-1984) 1984-1992) 1992-2004) 2004-2011) Post Aug 2011) Public Buildings * Zone A * D Soft Soil *	Pre 1935 1935-1965 1935-1966 1976-1984 1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Post Aug 2011 Public Buildings 2004-2011 Zone A Soft Soil D Soft Soil Soft Soil
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	1965-1976 1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Post Aug 2011 Public Buildings Zone A D Soft Soil Not applicable 	1965-1976 1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Public Buildings Zone A D Soft Soil Not applicable
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	1976-1984 0 1984-1992 0 1992-2004 0 2004-2011 0 Post Aug 2011 0 Public Buildings • Zone A • D Soft Soil • Not applicable	1976-1984 1984-1992 1992-2004 2004-2011 Post Aug 2011 Post Aug 2011 Public Buildings Total and the second seco
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	1992-2004 0 2004-2011 0 Post Aug 2011 0 Public Buildings • Zone A • D Soft Soil • Not applicable	1992-2004 0 2004-2011 0 Post Aug 2011 0 Public Buildings 1 Zone A 1 D Soft Soil 1 Not applicable 1
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	2004-2011 O Post Aug 2011 O Public Buildings Zone A D Soft Soil Not applicable	2004-2011 O Post Aug 2011 O Public Buildings I Zone A I D Soft Soil I Not applicable I
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Building Type: Seismic Zone:	Public Buildings Zone A D Soft Soil Not applicable	Public Buildings
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, <i>T</i> <i>Comment:</i>	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)	Seismic Zone:	Zone A D Soft Soil Not applicable	Zone A D Soft Soil Not applicable
c) Soil Type From NZS1 From NZS4 (for 1992 to d) Estimate Period, T Comment:	170.5:2004, Cl 3.1.3 : 203:1992, Cl 4.6.2.2 : 2004 and only if known)		D Soft Soil	D Soft Soil Not applicable
From NZS4 (for 1992 to d) Estimate Period, T Comment:	203:1992, Cl 4.6.2.2 : 2004 and only if known)		Not applicable	Not applicable
d) Estimate Period, T Comment:				
Comment:				
			$h_n = \frac{4}{A_c} = \frac{1.00}{1.00}$	4 m 1.00 m ²
Moment Resisting (concrete Frames:	$T = \max\{0.09h_n^{0.75}, 0.4\}$	0	0
Moment Resisting S	teel Frames:	$T = \max\{0.14h_n^{0.75}, 0.4\}$	Ō	Į Õ
All Other Frame Str	uctures:	$T = \max\{0.06h_n^{0.75}, 0.4\}$	ŏ	l õ
Concrete Shear Wa Masonry Shear Wa	lls Is:	$T = \max\{0.09h_n^{0.75}/A_c^{0.5}, 0.4\}$ $T < 0.4 \sec 1$		
User Defined (input	Period):		ŏ	l õ
	Where $h_n =$ height in metres from the base uppermost seismic weight or mass.	ase of the structure to the	T: 0.40	0.40
e) Factor A: Strength if not str	ening factor determined using result from engthened)	m (a) above (set to 1.0	Factor A: 1.00	1.00
f) Factor B: Determi results (ed from NZSEE Guidelines Figure 3A.1) to (e) above	using	Factor B: 0.06	0.06
g) Factor C: For rein C = 1.2,	prced concrete buildings designed betwee otherwise take as 1.0.	een 1976-84 Factor	Factor C: 1.00	1.00
h) Factor D: For build and Nag take as	ings designed prior to 1935 Factor D = 0 ier (1931-1935) where Factor D may be .0.	0.8 except for Wellington taken as 1.0, otherwise	Factor D: 1.00	1.00
(%NBS) _{nom} = AxBxC	٢D		(%NBS) _{nom} 6%	6%

NKA: lame of building: Sity: Table IEP-2 Initial EV 2 Near Fault Scaling Factor, If $T \leq 1.5$ sec, Factor E = 1 a) Near Fault Factor, $N(T,D)$ (from NZS1120 5-2004 Cl 3.1.6)	Avalon Park Avalon, Lowe valuation Proce	Pavilion er Hutt		By: Date:	KJG 16/12/2019	
Table IEP-2 Initial Ev La Near Fault Scaling Factor, If $T \leq 1.5$ sec, Factor $E = 1$ a) Near Fault Factor, $N(T,D)$ (from N751120 5-2004 Cl 3.1.6)	Avalon, Lowe	er Hutt		Dale.	10/12/2019	
Table IEP-2Initial Ev.2 Near Fault Scaling Factor,If $T \leq 1.5$ sec, Factor E = 1a) Near Fault Factor, $N(T,D)$ (from NZS1170 5:2004 Cl 31 6)	Valuation Proce			Revision No.:	0	
2.2 Near Fault Scaling Factor, If $T \leq 1.5$ sec, Factor E = 1 a) Near Fault Factor, $N(T,D)$ (from N7S1170 5-2004 Cl 3.1.6)	Factor F	edure Step 2	continued			
If $T \leq 1.5$ sec, Factor E = 1 a) Near Fault Factor, $N(T,D)$ (from NZS1170.5-2004, Cl 3.1.6)	, 1 40101 E	-				
a) Near Fault Factor, <i>N</i> (<i>T</i> , <i>D</i>) (from NZS1170 5:2004, CL3 1.6)			Longitudinal	1	Transverse	
(from NZS1170 5:2004, CL3 1.6)			N(T,D): 1		1	
b) Eactor E		= 1/N(T D)	Eactor E: 1 00		1.00	
		= 1/14(1,D)			1.00	
.3 Hazard Scaling Factor, Fa a) Hazard Factor, <i>Z</i> , for site	ctor F					
Locatio	on: Hutt Valley-south of	Taita Gorge 🛛 🔻	Refer right for user-defined location	ons		
	Z = 0.4	(from NZS1170.	5:2004, Table 3.3)			
Z ₁₉	992 = 1.2	(NZS4203:1992	Zone Factor from accompanying Figure 3.5(b))			
Z ₂₀	0.4	(from NZS1170.	5:2004, Table 3.3)			
D) Factor F For pre 1992	_	1/7				
For 1992-2011	=	Z_{1992}/Z				
For post 2011	=	Z ₂₀₀₄ /Z				
			Factor F: 2.50		2.50	
(set to 1.0 if other than 1976-2004, or c) Return Period Factor, R (from NZS1170.0:2004 Building Impor	not known) rtance Level)	<u>Choose Impo</u>	$R_{o} = 1$ $Ortance Level \bigcirc 1 \textcircled{0} 2 \bigcirc 3$ $R = 1.0$	O 4 O	1 1 • 2 • 3 • 4 1.0	
d) Factor G	=	IR _o /R				
.5 Ductility Scaling Factor, F	actor H		Factor G: 1.33		1.33	
a) Available Displacement Duct Comment: Reinforced masonry shear w	tility Within Existing	Structure	μ = <u>2.00</u>		2.00	
b) Factor H			k		<i>k.</i> .	
,	For pre 1976 (ma	aximum of 2)	= 1.57		1.57	
	For 1976 onward	15	= 1 Factor H: 1.57		1.57	
(where $k\mu$ is NZS1170.5:2004 Inelasti	c Spectrum Scaling Factor,	from accompanying T	able 3.3)			
.6 Structural Performance So a) Structural Performance Fact	caling Factor, Fact or, S _p	or I				
(from accompanying Figure 3.4) Tick if light timber-framed cor	nstruction in this direct	ion				
2			S _p = 0.70		0.70	
h) Structural Barformanas Carl	ling Easter	- 1/9	Eactor lu		1 42	
Note Factor B values for 1992 to 200	4 have been multiplied by 0	– ۲/۵ _p).67 to account for Sp i	in this period		1.43	
.7 Baseline %NBS for Buildi (equals (%NBS) _{nom} x E x F	ng, <i>(%NBS)</i> b xGxHxI)		45%		45%	
	,					

eet Number & Name:	61 Taita Drive, Avalon			Jo	b No.:	9741	
A: me of building:	Avalon Park Pavilion			By Da	/: ate:	KJG 16/12/2019	
y:	Avalon, Lower Hutt			Re	evision No.:	0	
able IEP-3 Initial E	valuation Procedure St	tep 3					
ep 3 - Assessment of Pe afer Appendix B - Section B3.2)	rformance Achievement Ra	atio (PAR)					
Longitudinal Direction							
potential CSWs	Effe	ect on Struct	ural Perform	ance			
Plan Irregularity	(Ch	oose a value - i	Do not interpo	nate)		5.00	
Effect on Structural Perform	ance () Severe	() Si	gnificant		O Insignificant	Factor A	
Vertical Irregularity						-	
Effect on Structural Perform	ance O Severe	⊖ Si	gnificant		Insignificant	Factor B	
Chart Caluz							
Effect on Structural Perform	ance 🔿 Severe	∩ <i>S</i> i	gnificant		Insignificant	Factor C	
Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin	ct e building has a frame structure ng the coefficient to the right of	e. For stiff build the value appli	lings (eg shea cable to frame	r walls), the effe e buildings.	ct of pounding]	
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of	ct be building has a frame structure ng the coefficient to the right of of Factor D1	e. For stiff build the value appli Facto	lings (eg shea cable to frame or D1 For Lo Severe	r walls), the effe e buildings. ngitudinal Dire Significant	ct of pounding]	
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of	ct e building has a frame structure ng the coefficient to the right of of Factor D1 Alianment of Floors within 20% of	e. For stiff build the value appli Facto Separation Storey Height	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h< td=""><td>n walls), the effe e buildings. ngitudinal Dire Significant .005<sep<.01h< td=""><td>ct of pounding ction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<></td></sep<.005h<>	n walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h< td=""><td>ct of pounding ction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<>	ct of pounding ction: 1.0 Insignificant Sep>.01H		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection o	ct ne building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of	e. For stiff build the value appli Facto Separation Storey Height	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1</sep<.005h 	n walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h O 1</sep<.01h 	ct of pounding ction: 1.0 Insignificant Sep>.01H () 1		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig	ct ne building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of	e. For stiff build the value appli Facto Separation ⁶ Storey Height <u>6 Storey Height</u>	tings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 04</sep<.005h 	r walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h 0 1</sep<.01h 	ct of pounding oction: 1.0 Insignificant Sep>.01H () 0.8		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2:- Height	ct ne building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect	e. For stiff build the value appli Facto Separation 5 Storey Height 5 Storey Height	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 04</sep<.005h 	n walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h 01 0.7</sep<.01h 	ct of pounding ction: 1.0 Insignificant Sep01H ① 1 ① 0.8		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2:- Height	ct ne building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4</sep<.005h 	n walls), the effe	ct of pounding ction: 1.0 Insignificant Sep>.01H © 1 0.8 ction: 1.0 Insignificant		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of b) Factor D2:- Height	ct e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2	e. For stiff build the value appli Factor Separation Storey Height Storey Height Factor	tings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 0.4 0 0.4</sep<.005h 	r walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h 0 1 0 0.7 ngitudinal Dire Significant .005<sep<.01h< td=""><td>ct of pounding oction: 1.0 Insignificant Sep>.01H ① 0.8 oction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<></sep<.01h 	ct of pounding oction: 1.0 Insignificant Sep>.01H ① 0.8 oction: 1.0 Insignificant Sep>.01H		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2:- Height	ct ne building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Factor Factor 2 to 4 Storeys	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 04 0 cor D2 For Lo Severe 0<sep<.005h 0 cor 02 For Lo</sep<.005h </sep<.005h 	n walls), the effe	ct of pounding ction: 1.0 Insignificant Seps.01H © 1 0.8 ction: 1.0 Insignificant Seps.01H 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 0 0		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of b) Factor D2:- Height Table for Selection of	ct e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference	e. For stiff build the value appli Factor Separation f Storey Height f Storey Height f Storey Height Factor e > 4 Storeys 2 to 4 Storeys ce < 2 Storeys	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 04 or D2 For Lo Severe 0<sep<.005h 0 04 0 07 0 1</sep<.005h </sep<.005h 	r walls), the effe	ct of pounding ection: 1.0 Insignificant Sep>.01H © 1 © 0.8 ection: 1.0 Insignificant Sep>.01H © 1 © 1 © 1 © 1		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of b) Factor D2:- Height Table for Selection of	ct e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Factor e > 4 Storeys 2 to 4 Storeys ce < 2 Storeys	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 or D2 For Lo Severe 0<sep<.005h 0.4 0.7 0.1</sep<.005h </sep<.005h 	r walls), the effe	ct of pounding		
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2: - Height	ct e building has a frame structure of the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Factor E > 4 Storeys 2 to 4 Storeys ce < 2 Storeys	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 c Severe 0<sep<.005h 0.4 0.5 Severe 0<sep<.005h 0.4 0.7 0 1</sep<.005h </sep<.005h </sep<.005h 	n walls), the effe	ct of pounding ction: 1.0 Insignificant Sep>.01H © 1 0.8 ction: 1.0 Insignificant Sep>.01H 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Factor D	
) Factor D1:- Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2:- Height Table for Selection of Site Characteristics - Sta	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference	e. For stiff build the value appli Facto Separation Storey Height Storey Height Storey Height Eactor E > 4 Storeys 2 to 4 Storeys ce < 2 Storeys	tings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 04 or D2 For Lo Severe 0<sep<.005h 0.4 0 0.7 0 1</sep<.005h </sep<.005h 	r walls), the effe e buildings.	ct of pounding ection: 1.0 Insignificant Sep.01H © 1 ○ 0.8 ection: 1.0 Insignificant Sep.01H ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1	Factor D	
) Factor D1:- Pounding Effe Note: Values given assume the may be reduced by taking Table for Selection of Alig b) Factor D2:- Height Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS vie	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference Height Difference Weight Difference Height Difference	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Storey Height Factor e > 4 Storeys 2 to 4 Storeys ce < 2 Storeys e etc as it affects	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 0.4 0 csep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H 0.5ep<.005H</sep<.005h 	n walls), the effe e buildings. ngitudinal Direc Significant .005 <sep<.01h 0.7 005<sep<.01h 0.7 0.9 0.9 0.1</sep<.01h </sep<.01h 	ct of pounding ction: 1.0 Insignificant Sep>.01H © 1 0.8 ction: 1.0 Insignificant Sep>.01H 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Factor D Factor E	
) Factor D1: - Pounding Effe Note: Values given assume th may be reduced by takin Table for Selection of Alig b) Factor D2: - Height Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS vie	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference ability, landslide threat, liquefaction nance _ Severe wer indicates low liquefaction pote	e. For stiff build the value appli Facto Separation Storey Height Storey Height Storey Height Eacto E > 4 Storeys 2 to 4 Storeys ce < 2 Storeys e etc as it affects o Sential.	tings (eg shea cable to frame or D1 For Lo Severe 0-Sep<.005H 0 1 0 4 0 0 4 0 Severe 0-Sep<.005H 0 4 0.5ep<.005H 0 0.4 0 0.7 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	r walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h 0.7 0.7 ngitudinal Dire Significant .005<sep<.01h 0.7 0.9 1 0.7 0.9 0.1</sep<.01h </sep<.01h 	ct of pounding	Factor D	
 Factor D1:- Pounding Effet Note: Values given assume the may be reduced by taking Table for Selection of Aligned b) Factor D2:- Height Table for Selection of Sel	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference Height Difference Weight Difference Height Differ	e. For stiff build the value appli Facto Separation f Storey Height f Storey Height f Storey Height Facto e > 4 Storeys 2 to 4 Storeys ce < 2 Storeys e etc as it affects of the buildin tics of the buildin	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 0.4 0 0.7 0 1 0 1 0 0.4 0 0.7 0 1 0 1 0 0.4 0 0.7 0 1 0 0.4 0 0.7 0 1 0 0.4 0 0.7 0 1 0 0.4 0 0.7 0 1 0 0.5 0 0.7 0 0.5 0 0.7 0 0.5 0 0.7 0 0.5 0 0.7 0 0.5 0 0.7 0 0.5 0 0.7 0 0.</sep<.005h 	r walls), the effe	ct of pounding ction: 1.0 Insignificant Seps.01H © 1 0.8 ction: 1.0 Insignificant Seps.01H 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Factor D Factor E Factor F	
 Factor D1: - Pounding Effet Note: Values given assume the may be reduced by taking Table for Selection of Aligned b) Factor D2: - Height Table for Selection of S	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference wer indicates low liquefaction pote mance O Severe wer indicates low liquefaction pote ince of all other relevant characters noice of Factor F: forced masonry shear walls in both	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Eactor Eacto	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 0.4 0 0.7 0 1 0 0.4 0 0.5 0 0.7 0 0.7 0</sep<.005h 	r walls), the effe	ct of pounding ection: 1.0 Insignificant Sep.01H © 1 ○ 0.8 ection: 1.0 Insignificant Sep.01H ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1	Factor D Factor E Factor F	
 Factor D1:- Pounding Effection of Selection of Selection of Aligned Selection of Select	et e building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference Height Difference wer indicates low liquefaction pote noice of all other relevant characters noice of Factor F: noice of Factor F: noice of Factor F: noice of all other relevant characters noice of Factor F: noice of Factor F: noice of all other relevant characters noice of all other relevant characters horced masonry shear walls in bottor onnewhat compensated for at ULS	e. For stiff build the value appli Facto Separation f Storey Height f Storey Height f Storey Height Facto e > 4 Storeys 2 to 4 Storeys ce < 2 Storeys e etc as it affects of the build this of the build h directions. Clo	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0 0.4 0.5ep<.005H 0.6ep<.005H 0.6ep<.005H 0.7 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1</sep<.005h 	r walls), the effe = buildings. ngitudinal Direc Significant .005 <sep<.01h 0.1 0.7 0.7 ngitudinal Direc Significant .005<sep<.01h 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.7 0.9 0.1 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7</sep<.01h </sep<.01h 	ct of pounding ction: 1.0 Insignificant Seps.01H © 1 0.8 ction: 1.0 Insignificant Seps.01H 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Factor D Factor E Factor F	
) Factor D1:- Pounding Effect Note: Values given assume the may be reduced by taking Table for Selection of Alig b) Factor D2:- Height b) Factor D2:- Height Table for Selection of Table for Selection of Site Characteristics - State Effect on Structural Perform Greater Wellington GIS view i Other Factors - for allowant Record rationale for che A significant number of reim Potential plan irregularity so building. 	et et et building has a frame structure ng the coefficient to the right of of Factor D1 Alignment of Floors within 20% of gnment of Floors not within 20% of Difference Effect of Factor D2 Height Difference Height Difference Height Difference Height Difference wer indicates low liquefaction pote nance \bigcirc Severe wer indicates low liquefaction pote nance of all other relevant characters noice of Factor F: horced masonry shear walls in bottor onewhat compensated for at ULS ant Batio (PAR)	e. For stiff build the value appli Factor Separation Storey Height Storey Height Storey Height Eactor Eacto	lings (eg shea cable to frame or D1 For Lo Severe 0 <sep<.005h 0 1 0 0.4 0.7 0.7 0 1 0.4 0.7 0 1 0.4 0.7 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5</sep<.005h 	r walls), the effe e buildings. ngitudinal Dire Significant .005 <sep<.01h 0.7 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1 0.7 0.9 0.1</sep<.01h 	ct of pounding ection: 1.0 Insignificant Sep01H © 1 ○ 0.8 ection: 1.0 Insignificant Sep01H ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1	Factor D Factor F	

treet Number & Name:	61 Taita Drive, Avalon		Jo	b No.:	9741
KA:			By		KJG
ame of building:	Avalon Park Pavilion		Da	te:	16/12/2019
ny:	Avaion, Lower Hutt		ne	VISION NO.:	0
able IEP-3 Initial Ev	valuation Procedure Step 3				
tep 3 - Assessment of Per Refer Appendix B - Section B3.2)	rformance Achievement Ratio (PAR)				
Transverse Direction					
potential CSWs	Effect on St (Choose a val	ructural Perform	nance polate)		Fact
1 Plan Irregularity	and the second se		196.04		
Effect on Structural Perform	nance O Severe	Significant		O Insignificant	Factor A 0.7
2 Vertical Irregulation					
2 Vertical irregularity Effect on Structural Perform		Significant		Insignificant	Factor B 1.
	U U			C - C - C - C - C - C - C - C - C - C -	
3 Short Columns					
Effect on Structural Perform	nance O Severe C	Significant		Insignificant	Factor C 1.
Note: Values given assume the may be reduced by takin	e building has a frame structure. For stiff bu ng the coefficient to the right of the value ap	ildings (eg shear plicable to frame	walls), the effect buildings.	t of pounding	
Note: Values given assume the may be reduced by takin	e building has a frame structure. For stiff bu ng the coefficient to the right of the value ap	ildings (eg shear olicable to frame Factor D1 For Tr	walls), the effect buildings. ransverse Dire	et of pounding	
Note: Values given assume the may be reduced by takin Table for Selection o	e building has a frame structure. For stiff bu ng the coefficient to the right of the value ap F of Factor D1 Separation	ildings (eg shear plicable to frame Factor D1 For Tr Severe n 0 <sep<.005h< td=""><td>walls), the effect buildings. ransverse Direc Significant .005<sep<.01h< td=""><td>et of pounding ction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<></td></sep<.005h<>	walls), the effect buildings. ransverse Direc Significant .005 <sep<.01h< td=""><td>et of pounding ction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.01h<>	et of pounding ction: 1.0 Insignificant Sep>.01H	
Note: Values given assume the may be reduced by takin Table for Selection o	e building has a frame structure. For stiff bu g the coefficient to the right of the value ap F f Factor D1 Separatio Alignment of Floors within 20% of Storey Heigh	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h at 0 1</sep<.005h 	walls), the effect buildings. ransverse Direc Significant .005 <sep<.01h< td=""><td>et of pounding ction: 1.0 Insignificant Sep>.01H ③ 1</td><td></td></sep<.01h<>	et of pounding ction: 1.0 Insignificant Sep>.01H ③ 1	
Note: Values given assume the may be reduced by takin Table for Selection of Alig	e building has a frame structure. For stiff bu ng the coefficient to the right of the value ap of Factor D1 Alignment of Floors within 20% of Storey Heigh nment of Floors not within 20% of Storey Heigh	ildings (eg shear plicable to frame Factor D1 For Tr Severe n 0 <sep<.005h nt 0 1 nt 0 0.4</sep<.005h 	walls), the effect buildings. ransverse Direct Significant .005 <sep<.01h 0 1</sep<.01h 	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1.8	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height	e building has a frame structure. For stiff bu In the coefficient to the right of the value appression of Factor D1 Separation Alignment of Floors within 20% of Storey Heigh Difference Effect	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h nt 0 1 nt 0 0.4</sep<.005h 	walls), the effect buildings. ransverse Direc Significant .005 <sep<.01h 0 1</sep<.01h 	et of pounding ction: 1.0 Insignificant Sep>.01H ③ 1 ○ 0.8	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of Factor D1 Separation Alignment of Floors within 20% of Storey Heigh gnment of Floors not within 20% of Storey Heigh Difference Effect	actor D1 For Tr Severe 0 0 <sep<.005h 0 1 0 4</sep<.005h 	ansverse Directors of the second seco	et of pounding ction: 1.0 Insignificant Sep>.01H ① 0.8 ction: 1.0	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of the value appertunction of Floors within 20% of Storey Heightingnment of Floors not within 20% of Storey Heighting and the store of the stor	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h nt 0 1 nt 0 0.4 Factor D2 For Tr Severe 0<sep<.005h< td=""><td>walls), the effect buildings. ansverse Direct Significant 005<sep<.01h 0 1 0 0.7</sep<.01h </td><td>et of pounding ction: 1.0 Insignificant Sep>.01H ① 0.8 ction: 1.0 Insignificant Sep>.01H</td><td></td></sep<.005h<></sep<.005h 	walls), the effect buildings. ansverse Direct Significant 005 <sep<.01h 0 1 0 0.7</sep<.01h 	et of pounding ction: 1.0 Insignificant Sep>.01H ① 0.8 ction: 1.0 Insignificant Sep>.01H	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of	e building has a frame structure. For stiff buing the coefficient to the right of the value appendix of Factor D1 Separation Alignment of Floors within 20% of Storey Heigh Difference Effect Factor D2 Height Difference > 4 Storey	ildings (eg shear plicable to frame actor D1 For Tr Severe 0 0 <sep<.005h at 0 0.4 actor D2 For Tr Severe 0<sep<.005h 5 0 0.4</sep<.005h </sep<.005h 	ansverse Direct Significant .005 <sep<.01h 0.1 0.7 ansverse Direct Significant .005<sep<.01h 0.7</sep<.01h </sep<.01h 	et of pounding ction: 1.0 Insignificant Sep01H ① 1. ① 0.8 ction: 1.0 Insignificant Sep01H ① 1	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height	e building has a frame structure. For stiff builting has a frame structure. For stiff builting the coefficient to the right of the value appertent of Floors within 20% of Storey Height Difference Effect For Factor D2 Height Difference 2 to 4 Storey	ildings (eg shear plicable to frame cactor D1 For Tr Severe n 0 <sep<.005h t 0 1 nt 0 0.4 cactor D2 For Tr Severe 0<sep<.005h s 0.4 s 0.7</sep<.005h </sep<.005h 	ansverse Direction Significant 005 <sep<.01h 0 1 0 0.7 Cansverse Direction Significant 0.05<sep<.01h 0.07 0.9</sep<.01h </sep<.01h 	et of pounding ction: 1.0 Insignificant Sep>.01H ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ② 1 ③ 1	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of the value appertu	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h at 0 1 nt 0 0.4 actor D2 For Tr Severe 0<sep<.005h s 0.4 s 0.7 s 0 1</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding	
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of the value appertu	ildings (eg shear cactor D1 For Tr Severe n 0 <sep<.005h< td=""> ft 1 nt 0.4</sep<.005h<>	walls), the effect buildings.	et of pounding	Factor D 1.0
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of Site Characteristics - Sta	e building has a frame structure. For stiff builting has a frame structure. For stiff builting the coefficient to the right of the value appropriate to the right of the value to the right of the r	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h at 0 1 nt 0 0.4 actor D2 For Tr Severe 0<sep<.005h s 0 0.4 s 0 0.7 s 0 1 cts the structural out</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding	Factor D 1.0
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of 5 Site Characteristics - Sta	e building has a frame structure. For stiff builting the coefficient to the right of the value appertent of the value appertent of Floors within 20% of Storey Height gamment of Floors not within 20% of Storey Height Difference Effect For Factor D2 Height Difference 2 to 4 Storey, Height Difference < 2 Storey	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h t 0 1 nt 0 0.4 actor D2 For Tr Severe 0<sep<.005h s 0.4 s 0.7 s 0.1 cts the structural particular</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ② 1 ③ 1 ③ 1 ③ 1 ④ 1 ④ 1 ④ 1 ④ 1 ④ 1 ④ 1 ④ 1 ④	Factor D 1.0
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height 1 Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS view	e building has a frame structure. For stiff builting the coefficient to the right of the value appendix of the	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h t 0 1 nt 0.4 Cactor D2 For Tr Severe 0<sep<.005h s 0.4 s 0.7 s 0.1 cts the structural pe Significant</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1	Factor D 1.0 rective Factor E 1.0
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS view	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of the value appertu	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h nt 0 1 nt 0 0.4 actor D2 For Tr Severe 0<sep<.005h s 0.4 s 0.4 s 0.7 s 0 1 t s 0.1 s 0.5 gnilicant</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1	Factor D 1.0 vective Factor E 1.0
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height 1 Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS view	e building has a frame structure. For stiff builting the coefficient to the right of the value appertent of the coefficient to the right of the value appertent of Floors within 20% of Storey Height Difference Internet of Floors not within 20% of Storey Height Difference 2 to 4 Storey Height Difference 2 Storey Height Difference 3 Storey Height Difference 3 Storey Height Difference 3 Storey Height Difference 3 Storey Height Difference 4 Storey Height Difference 4 Storey Height Difference 4 Storey Height Difference 5 Storey Height 5	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h nt 0 1 nt 0 4 Factor D2 For Tr Severe 0<sep<.005h s 0 4 s 0 7 s 1 cts the structural pe Significant</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ② 1 a life-safety persp ③ Insignificant mum value 2.5 mum value 2.5	Factor D 1.0 Pective Factor E 1.0 Factor F 1.3
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS view 6 Other Factors - for allowar Record rationale for of A significant number of reind	e building has a frame structure. For stiff builting the coefficient to the right of the value appertunction of the coefficient to the right of the value appertunction of the coefficient to the right of the value appertunction. Alignment of Floors within 20% of Storey Height annent of Floors not within 20% of Storey Height Difference Effect Difference Effect Height Difference > 4 Storey. Height Difference < 2 Storey. Height Difference < 3 Height Difference < 4 Storey. Height Difference < 4 Storey. Height Difference < 4 Storey. Height Difference < 2 Storey. Height Difference < 3 Height Difference < 4 Storey. Height Difference < 5 Height Difference < 4 Storey. Height Difference < 5 Height Difference < 6 Height Difference < 7 Height Difference < 7 Height Difference < 7 Height Difference < 7 Height Difference < 8 Height Difference	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h at 0 1 at 0 0.4 actor D2 For Tr Severe 0<sep<.005h s 0 0.4 s 0 0.7 s 0 1 cts the structural pe 0 Significant</sep<.005h </sep<.005h 	walls), the effect buildings. ransverse Direct Significant 005 <sep<.01h 1 0.7 ransverse Direct Significant 005<sep<.01h 0.7 0.9 1 erformance from s 3 storeys - Maxin otherwise - Maxin Nom</sep<.01h </sep<.01h 	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1 ① 1	Factor D 1.0 Nective Factor E 1.0 Factor F 1.3
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of Table for Selection of Site Characteristics - Sta Effect on Structural Perform Greater Wellington GIS view 6 Other Factors - for allowar Record rationale for of A significant number of rein Potential plan irregularity so building	e building has a frame structure. For stiff builting the coefficient to the right of the value appertent of the coefficient to the right of the value appertent of Floors in the right of the value appertent of Floors within 20% of Storey Height Difference Effect Difference Effect Height Difference > 4 Storey: Height Difference > 2 Storey: Height Difference < 2 St	iddings (eg shear cactor D1 For Tr Severe 0 <sep<.005h< td=""> 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0.4 Severe 0<sep<.005h< td=""> 5 0.4 5 0.4 5 0.4 5 0.4 5 0.4 5 0.1 cts the structural per Significant Iding For a Closely spaced por ing relatively even</sep<.005h<></sep<.005h<>	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H © 1 ○ 0.8 ction: 1.0 Insignificant Sep>.01H ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1 ○ 1	Factor D 1.0 Pective Factor E 1.0 Factor F 1.3
Note: Values given assume the may be reduced by taking Table for Selection of Alig b) Factor D2: - Height I Table for Selection of	e building has a frame structure. For stiff builting the coefficient to the right of the value appertent of the coefficient to the right of the value appertent of factor D1 Separation. Alignment of Floors within 20% of Storey Height gament of Floors not within 20% of Storey Height Difference Effect The factor D2 Height Difference > 4 Storey. Height Difference 2 to 4 Storey. Height Difference 2 to 4 Storey. Height Difference 2 to 4 Storey. Height Difference 2 storey. Height Difference 3 storey. Height Difference 4 Storey. Height Difference 5 storey. Height Difference 5 storey. Height Difference 6 storey. Height Difference 5 storey. Height 5 storey.	ildings (eg shear plicable to frame actor D1 For Tr Severe n 0 <sep<.005h it 0 1 nt 0 4 actor D2 For Tr Severe 0<sep<.005h s 0 4 s 0 7 s 0 1 cts the structural pe Significant Iding For a Closely spaced por ping relatively even</sep<.005h </sep<.005h 	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H © 1 0.8 ction: 1.0 Insignificant Sep>.01H 0 1 1 0 1 1 0 1 0 1 0 1 0 1 0	Factor D 1.0 Nective Factor E 1.0 Factor F 1.3
Note: Values given assume the may be reduced by takin Table for Selection of Alig b) Factor D2: - Height I Table for Selection of Selection of Comparison of Compa	e building has a frame structure. For stiff builting the coefficient to the right of the value appropriate to the relation of the rate to the rate to the rate to the rate to the relation of the rate to the ra	iddings (eg shear cactor D1 For Tr Severe 0<	walls), the effect buildings.	et of pounding ction: 1.0 Insignificant Sep>.01H ① 1 ① 0.8 ction: 1.0 Insignificant Sep>.01H ① 1 ① 1 ① 1 ② 1 a life-safety persp ③ Insignificant mum value 2.5 Inimum. the hall. bughout the	Factor D 1.0 rective Factor E 1.0 Factor F 1.3 PA ransverse 0.9

AVA: BY: Avaion Park Pavilion Date: Avaion, Lower Hutt Date: Verification Date: Avaion, Lower Hutt Revision No.: U Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7 Step 4 - Percentage of New Building Standard (%/NBS) Longitudinal Transverse A.1 Assessed Baseline %/NBS (%/NBS), 45% 45% 45% A.2 Percentage of New Building Standard (%/NBS) 0.91 0.91 0.91 A.3 PAR x Baseline (%/NBS), 40% 40% 40% A.4 Percentage New Building Standard (%/NBS) - Seismic Rating 0.92 0.92 0.92 A.4 Percentage New Building Standard (%/NBS) - Seismic Rating 0.92 0.92 0.92 Step 5 - Is %/NBS < 34? No 30% 0% 0% 0% Step 6 - Potentially Earthquake Risk (is %/NBS < 67)? YES Seismic Grade C Motificinal Comments (items of note affecting IEP based seismic rating)	Street Number & Name:	61 Taita Drive, Avalon	Job No.:	9741
Zhy: Avaion, Lower Hutt Revision No.: 0 Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7 Step 4 - Percentage of New Building Standard (%/MS5) Longitudinal Transverse 41 Assessed Baseline %/MS5 (%/MS5), (tom Table EP - 1) 45% 45% 12 Performance Achievement Ratio (PAR) (tom Table EP - 2) 0.91 0.92 13 PAR x Baseline (%/MS5), 40% 00% 14 Percentage New Building Standard (%/MS5) - Seismic Rating (Use lower of two values from Step 4.3) 00% 15 Step 5 - Is %/MS5 < 34? NO Step 5 - Potentially Earthquake Risk (is %/MS5 < 67)? YES Step 7 - Provisional Grading for Seismic Risk based on IEP Seismic Grade C Additional Comments (items of note affecting IEP based seismic rating) 4 C	Name of building:	Avalon Park Pavilion	By: Date:	KJG 16/12/2019
Table IE-14 Initial Evaluation Proceedure Steps 4, 5, 6 and 7 Step 4 - Percentage of New Building Standard (%/MS) I Initial Commune Achievement Ratio (PAR) (Imm Table IEP - 2) 3) APA x Baseline (%/MS) 4) Initial Standard (%/MS) - Seismic Rating (Ibe lower of two values from Step 4.3) Or point all for a standard (%/MS) - Seismic Rating (Ibe lower of two values from Step 4.3) Or point all for al	City:	Avalon, Lower Hutt	Revision No	o.: 0
But p 4 - Percentage of New Building Standard (%/MBS) Longitudinal Tanaverse 1 Assessed Baseline %/MS (%/MBS) (tom Table IEP - 0) 3 PAR & Baseline (%/MBS) 3 PAR & Baseline (%/MBS) 4 Market Baseline (%/MBS) 3 PAR & Baseline (%/MBS) 4 Market Baseline (%/MBS) 3 PAR & Baseline (%/MBS) 4 Market Baseline (%/MBS) 4 Market Baseline (%/MBS) 4 Market Baseline (%/MBS) 5 1 Market Baseline (%/MBS) 4 Market Baseline (%/MBS) 5 4 Market Baseline (%/MBS) 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 7	Table IEP-4 Initial E	valuation Procedure Steps 4, 5, 6 an	d 7	
1.1 Assessed Baseline %WBS (%WBS) ₀ 45% 45% 1.2 (from Table (F) - 1) 0.91 0.91 1.3 PAR x Baseline (%WBS) ₀ 40% 40% 1.4 Percentage New Building Standard (%MBS) - Seismic Rating (Use lower of two values from Stop 4.3) 40% 1.4 Percentage New Building Standard (%MBS) - Seismic Rating (Use lower of two values from Stop 4.3) 40% 1.5 Skep 5 - Is %MBS < 34?	Step 4 - Percentage of Ne	w Building Standard (%NBS)	Longitudinal	Transverse
1.2 Performance Achievement Ratio (PAR) 0.91 0.91 1.3 PAR x Baseline (%/MBS)s 40% 40% 1.4 Percentage New Building Standard (%/MBS) - Seismic Rating (Use lower of two values from Skep 4.3) 40% 1.4 Percentage New Building Standard (%/MBS) - Seismic Rating (Use lower of two values from Skep 4.3) 40% 1.4 Percentage New Building Standard (%/MBS) - Seismic Rating (Use lower of two values from Skep 4.3) 40% 1.4 Percentage New Building Standard (%/MBS) - Seismic Rating (Use lower of two values from Skep 4.3) 100% 1.5 Skep 5 - Is %/MBS < 34?	4.1 Assessed Baseline % (from Table IEP - 1)	NBS (%NBS) _b	45%	45%
1.3 PAR x Baseline (%MBS), 40% 40% 1.4 Percentage New Building Standard (%MBS) - Seismic Rating (Use lower of two values from Step 4.3) 40% 38ep 5 - Is %MBS < 34?	1.2 Performance Achiever (from Table IEP - 2)	nent Ratio (PAR)	0.91	0.91
1.4 Percentage New Building Standard (%/NES) - Seismic Rating (Use lower of two values from Step 4.3) 40% Step 5 - Is %/NES < 34?	4.3 PAR x Baseline (%NB	5) _b	40%	40%
Step 5 - Is %/BS < 34?	I.4 Percentage New Build (Use lower of two valu	ing Standard (%NBS) - Seismic Rating es from Step 4.3)		40%
Step 6 - Potentially Earthquake Risk (is %/BS < 67)?	Step 5 - Is <i>%NBS <</i> 34?			NO
Set 7 - Provisional Grading for Seismic Risk based on IEP Additional Comments (items of note affecting IEP based seismic rating) Relationship between Grade and %NBS: Serade: At B C B Set of the set of th	Step 6 - Potentially Eartho	uake Risk (is <i>%NBS <</i> 67)?		YES
Additional Comments (items of note affecting IEP based seismic rating) Image: A+ A B C D Science: A+ A B C D %NBS: > 100 100 to 80 79 to 67 66 to 34 < 34 to 20	Non 7 Descriptional Condi	ng for Solomia Bick based on IED		
Relationship between Grade and %NBS: Grade: A+ MBS: > 100 100 to 80 79 to 67 66 to 34 < 34 to 20	Step 7 - Provisional Grad	ing for Seisinic Hisk based on ter	Seismic Gr	ade C
Grade: A+ A B C D E %NBS: > 100 100 to 80 79 to 67 66 to 34 < 34 to 20 < 20	Additional Comments (it	ems of note affecting IEP based seismic rating)	Seismic Gr	ade C
%NBS: > 100 100 to 80 79 to 67 66 to 34 < 34 to 20 < 20	Additional Comments (it Relationship betv	ems of note affecting IEP based seismic rating)	Seismic Gr	rade C
	Additional Comments (it Relationship betv	reen Grade and <i>%NBS</i> :	Seismic Gr	ade C
	Additional Comments (it Relationship betv	veen Grade and %NBS:	C D I 66 to 34< < 34 to 20 < 3	rade C
	Additional Comments (it Relationship betv	reen Grade and %NBS: See A+ A B S: > 100 100 to 80 79 to 67	Seismic Gr	rade C
	Additional Comments (it Relationship betv	reen Grade and %NBS: de: A+ A B S: > 100 100 to 80 79 to 67	C D I 66 to 34 < 34 to 20	E 20

Street Number & Name: AKA: Name of building: City:		61 Taita Drive, Avalon Avalon Park Pavilion Avalon, Lower Hutt	Job No.: By: Date: Revision No.:	9741 KJG 16/12/2019 0
	Lo IED 5 Initial Ex	valuation Brocodura Ston 8	Terision no	
Step	p 8 - Identification of po significant risk to	otential Severe Structural Weaknesses (S a significant number of occupants	SSWs) that could result in	
.1	Number of storeys abc	ve ground level		1
.2	Presence of heavy con	crete floors and/or concrete roof? (Y/N)		N
	Potential Severe	e Structural Weaknesses (SSW ed out are not applicable and need not be considere	/s): ^{d.}	
	Occupancy not consi	idered to be significant - no further cons	ideration required	
	Risk not considered	to be significant - no further consideration	on required	
	The following points in the pointing that a	ini Silven Sinuctural Weaknesson (85Ws null) minuli (n ognilicom visi, ic a elginiic) here bren iden i fron and muniber of occupients	
	1 None Identified			
	9 Weide ar soll store	y (dynaph lapratately)		
	3. Britis columns and not consusted by	ti'ar biam-column (olnis rhis dirforminiar Lathur sriuciură) blemantii	in of which are	
	4. Flat alab bollaroos connections	with lateral casesity relamit of low duard	iny illan-to-ooluren	
	5) No (dentificable con	nocito's batween priming amoture and c	1100 hrvatoli	
	5 Lodge and gup the			
	IEP Assessm	nent Confirmed by	Signature	
			Name	
		1 C C C C C C C C C C C C C C C C C C C	CPEng. No	