



Aldwin Courts Quantitative Engineering Evaluation

Functional Location ID: PRO 0811 Address: 55 Aldwins Road, Phillipstown Reference: 237698 Prepared for:

Christchurch City Council

Revision: 5

Date: 15 December 2015

Document Control Record

Document prepared by:

Aurecon New Zealand Limited Level 2, 518 Colombo Street Christchurch 8011 PO Box 1061 Christchurch 8140 New Zealand

- T +64 3 375 0761
- **F** +64 3 379 6955
- E christchurch@aurecongroup.com
- W aurecongroup.com

A person using Aurecon documents or data accepts the risk of:

- a) Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version.
- b) Using the documents or data for any purpose not agreed to in writing by Aurecon.

Docu	Document control aurecon							
Repor	t Title	Quantitative Engineering Ev	Quantitative Engineering Evaluation					
Functi	onal Location ID	PRO 0811	Project Numb	er	237698			
File Pa	ath	P:\ 237698 - Aldwin Courts.	docx					
Client		Christchurch City Council	Client Contac	t	Michael Sheffield			
Rev	Date	Revision Details/Status	Prepared	Author	Verifier	Approver		
1	23 September 2013	Draft	M. Ardalany / H. Clark	M. Ardalany / H. Clark	D. Elliott	D. Elliott		
2	28 September 2013	Final	M. Ardalany / H. Clark	M. Ardalany / H. Clark	D. Elliott	D. Elliott		
3	1 November 2013	Final	M. Ardalany / M. Ardalany / H. Clark H. Clark		D. Elliott	D. Elliott		
4	26 August 2014	Final – Carports Updated	M. Ardalany / H. Columbus	M. Ardalany / H. Columbus	D. Elliott	D. Elliott		
5	14 December 2015	Final – Roof replaced to light weight and attached carports strengthened by OPUS	M. Ardalany	M. Ardalany	D. Elliott	D. Elliott		
Currer	nt Revision	5						

Approval Theel MI Andalow Approver Author Signature Signature on on behalf of behalf of Aurecon Aurecon David Elliott Manoochehr Ardalany Name Name Title Structural Engineer Title Structural Engineer

Contents

Exe	cutive	Summ	ary - Block A	1			
Exe	Executive Summary - Block B 2						
Exe	cutive	Summ	ary - Block C	3			
Exe	cutive	Summ	ary - Block D	4			
Exe	cutive	Summ	ary - Block E	5			
Exe	cutive	Summ	ary - Block F	6			
Exe	cutive	Summ	ary - Block G	7			
Exe	cutive	Summ	ary - Carport J	8			
Exe	cutive	Summ	ary- Carport K	9			
Exe	cutive	Summ	ary - Carport L	10			
Exe	cutive	Summ	ary - Carport M	11			
Exe	cutive	Summ	ary- Carport O	12			
1	Intro	duction		13			
	1.1	Genera	al	13			
2	Desc	ription	of the Building	13			
	2.1Building Age and Configuration13						
		2.1.1	Buildings	14			
		2.1.2	Carports	14			
	2.2	Buildin	g Designations	14			
	2.3	Buildin	g Structural Systems Vertical and Horizontal	15			
		2.3.1	Buildings	15			
		2.3.2	Carports	15			
	2.4	Refere	nce Building Type	16			
	2.5	Buildin	g Foundation System and Soil Conditions	16			
	2.6	Availat	ble Structural Documentation and Inspection Priorities	16			
	2.7	Availat	ble Survey Information	16			
3	Struc	tural in	vestigation	17			
	3.1	Summa	ary of Building Damage	17			
	3.2	Record	of Intrusive Investigation	18			
	3.3	3.3 Damage Discussion 19					
4	Build	ing Rev	view Summary	19			
	4.1 Building Review Statement 19						
	4.2 Critical Structural Weaknesses 19						
5	Build	ing Stro	ength	19			
(Re	fer to A	Append	lix C for background information)	19			
	5.1	Genera	al	19			

////		
	5.2 Existing Building Strength	19
6	Results Discussion	21
7	Conclusions and Recommendations	21
8	Explanatory Statement	22

Appendices

Appendix A Site Map, Photos, Levels Survey Results, and Assumptions Appendix B References Appendix C Strength Assessment Explanation

Appendix D Background and Legal Framework

Appendix E Standard Reporting Spread Sheets

Executive Summary - Block A

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block A building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block A			
Building Location ID	PRO 0811	B001 Multiple Building Site Y			
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	3
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976
Foot Print (m ²)	~144	Storeys above ground	1	Storeys below ground	0
Type of Construction	Corrugated grade floor	l metal roof, block veneer, timb	ber frame wa	lls, concrete strip footings and	slab on
Quantitative L5 Rep	ort Resul	ts Summary			
Building Occupied	Y	Aldwin Courts Block A is currently in use.			
Suitable for Continued Occupancy	Y	Aldwin Courts Block A is suit	able for cont	inued occupation.	
Key Damage Summary	Y	Refer to summary of building	damage in	Section 3.1 of this report.	
Critical Structural Weaknesses (CSW)	N	No critical structural weaknes	sses found.		
Levels Survey Results	Y	Levels are not within the recommended 0.5% grade.			
Building %NBS From Analysis	83%	Based on an analysis of capacity and demand for the bracing and firewall.			
Approval					

Author Signature	MArdalow	Approver Signature	Allet
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block B

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block B building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block B			
Building Location ID	PRO 0811	B002 Multiple Building Site Y			
Building Address	55 Aldwins	s Road, Phillipstown No. of residential units 3			
Soil Technical Category	N/A	Importance Level 2 Approximate Year Built			1976
Foot Print (m ²)	~165	Storeys above ground 1 Storeys below ground			0
Type of Construction	Corrugated metal roof, block veneer, timber frame walls, concrete strip footings and slab on grade floor.				
Quantitative L5 Report Results Summary					

Building Occupied	Y	Aldwin Courts Block B is currently in use.
Suitable for Continued Occupancy	Y	Aldwin Courts Block B building is suitable for continued occupancy.
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.
Critical Structural Weaknesses (CSW)	Ν	No critical structural weaknesses were found.
Levels Survey Results	Y	Levels are not within the recommended 0.5% grade.
Building %NBS From Analysis	73%	Based on an analysis of capacity and demand for the bracing and firewall.

Approval

Author Signature	MArdalow	Approver Signature	Albert
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block C

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block C building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block C				
Building Location ID	PRO 0811	B003		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	2	
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976	
Foot Print (m ²)	~138	Storeys above ground	1	Storeys below ground	0	
Type of Construction	Corrugated grade floor	d metal roof, block veneer, timber frame walls, concrete strip footings and slab on r.				
Quantitative L5 Repo	ort Resul	ts Summary				
Building Occupied	Y	Aldwin Courts Block C is curr	ently in use.			
Suitable for Continued Occupancy	Y	Aldwin Courts Block C is suitable for continued occupation.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.				
Levels Survey Results	Y	Levels are not within the recommended 0.5% grade.				
Building %NBS From Analysis	80%	Based on an analysis of capacity and demand for the bracing and firewall.				

Approval

Author Signature	MArdalow	Approver Signature	Albert
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block D

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block D building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block D			
Building Location ID	PRO 0811	B004		Multiple Building Site	Y
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	3
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976
Foot Print (m ²)	~144	Storeys above ground	1	Storeys below ground	0
Type of Construction	Corrugated grade floor	d metal roof, block veneer, timber frame walls, concrete strip footings and slab on r.			
Quantitative L5 Rep	ort Resul	ts Summary			
Building Occupied	Y	Aldwin Courts Block D is currently in use.			
Suitable for Continued Occupancy	Y	Aldwin Courts Block D building is suitable for continued occupancy.			
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.			
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.			
Levels Survey Results	Y	Levels are not within the recommended 0.5% grade.			
Building %NBS From Analysis	83%	Based on an analysis of capacity and demand for the bracing and firewall.			

Approval

Author Signature	M. Ardalow	Approver Signature	Allet
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block E

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block E building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block E				
Building Location ID	PRO 0811	B005		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	3	
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976	
Foot Print (m ²)	~144	Storeys above ground	1	Storeys below ground	0	
Type of Construction	Corrugated grade floor	d metal roof, block veneer, timber frame walls, concrete strip footings and slab on r.				
Qualitative L5 Report	rt Results	s Summary				
Building Occupied	Y	Aldwin Courts Block E is currently in use.				
Suitable for Continued Occupancy	Y	Aldwin Courts Block E is suitable for continued occupation.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknes	sses found.			

Levels Survey Results	Y	Floor levels are acceptable.
Building %NBS From Analysis	78%	Based on an analysis of capacity and demand for the bracing and firewall.

Approval

Author Signature

M Ardalour

Approver Signature

Hallhold

	1		
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block F

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block F building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block F				
Building Location ID	PRO 0811	B006		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	3	
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976	
Foot Print (m ²)	~144	Storeys above ground	1	Storeys below ground	0	
Type of Construction	Corrugated grade floor	l metal roof, block veneer, timb	er frame wa	lls, concrete strip footings and	slab on	
Qualitative L5 Report	rt Results	s Summary				
Building Occupied	Y	Aldwin Courts Block F is currently in use.				
Suitable for Continued Occupancy	Y	Aldwin Courts Block F is suitable for continued occupation.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.				
Levels Survey Results	Y	Floor levels are acceptable.				
Building %NBS From Analysis	83%	Based on an analysis of capacity and demand for the bracing and firewall.				

Approval

Author Signature	MArdalow	Approver Signature	Allet
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Block G

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Block G building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Block G				
Building Location ID	PRO 0811	B007		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	3	
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976	
Foot Print (m ²)	~144	Storeys above ground	Storeys above ground 1 Storeys below ground			
Type of Construction	Corrugated grade floor	l metal roof, block veneer, timb	ber frame wa	lls, concrete strip footings and	slab on	
Qualitative L5 Report Results Summary						
Building Occupied	Y	Aldwin Courts Block G is currently in use.				
Suitable for Continued Occupancy	Y	Aldwin Courts Block G is suitable for continued occupation.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknes	sses found.			

Levels Survey Results Υ Levels are not within the recommended 0.5% grade.

Building %NBS From	83%	Based on an analysis of capacity and demand for the bracing and firewall.
Analysis	0070	Babed off an analysis of capacity and demand for the bracking and mewall.

Approval

Analysis

Author Signature

M Ardalouy

Approver Signature

. Allet

Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Carport J

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Carport J and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts- Carport J					
Building Location ID	PRO 0811	O 0811 B008 Multiple Building Site Y					
Building Address	55 Aldwins	Road, Phillipstown	No. of residential units	-			
Soil Technical Category	N/A	Importance Level	1	Approximate Year Built	1976		
Foot Print (m ²)	60	Storeys above ground	1	Storeys below ground	0		
Type of Construction	Metal shee footing, ste	eet roof on timber joists and beams, lightly reinforced concrete masonry wall with strip steel pipe corner posts and slab on grade floor.					
Qualitative L5 Report Results Summary							
Building Occupied	Y	Aldwin Courts Carport J is currently in use.					
Suitable for Continued Occupancy	Y	Aldwin Courts Carport J is suitable for continued use.					
Key Damage Summary	Y	Refer to summary of building	Refer to summary of building damage in Section 3.1 of this report				

Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report.
Critical Structural Weaknesses (CSW)	Ν	No critical structural weaknesses found.
Levels Survey Results	Ν	Floor levels are acceptable.
Building %NBS From Analysis	100%	Strengthening is carried out by OPUS- Refer to OPUS strengthening.

Approval

Author SignatureMandadayApprover SignatureMandadayNameManoochehr ArdalanyNameDavid ElliottTitleStructural EngineerTitleSenior Structural Engineer

Executive Summary- Carport K

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Carport K building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts- Carports K			
Building Location ID	PRO 0811	B009	B009 Multiple Building Site Y		
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	-
Soil Technical Category	N/A	Importance Level	2	Approximate Year Built	1976
Foot Print (m ²)	60	Storeys above ground	1	Storeys below ground	0
Type of Construction	Metal shee footing, ste	et roof on timber joists and bear bel pipe corner posts and slab o	ms, lightly re on grade floc	inforced concrete masonry wa	ll with strip
Quantitative L5 Repo	Report Results Summary				
Building Occupied	Y	Aldwin Courts Carport K is currently in use.			
Suitable for Continued Occupancy	Y	Aldwin Courts Carport K is suitable for continued use.			
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report			
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.			
Levels Survey Results	N	Floor levels are acceptable.			
Building %NBS From Analysis	37%	Based on analysis of the masonry wall out-of-plane capacity.			
Approval					
	M	Ardalour			1-11-

Author Signature

Approver Signature

Hellet

	1		
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary - Carport L

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Carport L building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Carport L				
Building Location ID	PRO 0811	B010		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	-	
Soil Technical Category	N/A	Importance Level	Importance Level 2		1976	
Foot Print (m ²)	60	Storeys above ground	1	Storeys below ground	0	
Type of Construction	Metal shee footing, ste	Metal sheet roof on timber joists and beams, lightly reinforced concrete masonry wall with strip footing, steel pipe corner posts and slab on grade floor.				
Qualitative L5 Report Results Summary						
Building Occupied	Y	Aldwin Courts Carport L is currently in use.				
Suitable for Continued Occupancy	Y	Aldwin Courts Carport L is suitable for continued use.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.				
Levels Survey Results	N	Floor levels are acceptable.				

Approval

Analysis

Building %NBS From

37%

Author Signature	MArdalow	Approver Signature	Allet
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Based on analysis of the masonry wall out-of-plane capacity.

Executive Summary - Carport M

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Carport M building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Carport M				
Building Location ID	PRO 0811	B011		Multiple Building Site	Y	
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	-	
Soil Technical Category	N/A	Importance Level	1	Approximate Year Built	1976	
Foot Print (m ²)	45	Storeys above ground	1	Storeys below ground	0	
Type of Construction	Metal shee footing, ste	et roof on timber joists and bear el pipe corner posts and slab o	ms, lightly re on grade floc	inforced concrete masonry wal	I with strip	
Quantitative L5 Report Results Summary						
Building Occupied	Y	Aldwin Courts Carport M is currently in use.				
Suitable for Continued Occupancy	Y	Aldwin Courts Carport M is suitable for continued use.				
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report				
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.				
Levels Survey Results	N	Floor levels are acceptable.				
Building %NBS From Analysis	100%	Strengthening is carried out by OPUS- Refer to OPUS strengthening report.				
Approval						

Author Signature

M Ardalow

Approver Signature

Albert

	1		
Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

Executive Summary- Carport O

This is a summary of the Quantitative Engineering Evaluation for the Aldwin Courts Carport O building and is based on the Detailed Engineering Evaluation Procedure document issued by the Engineering Advisory Group on 19 July 2011, visual inspections, available structural documentation and summary calculations as appropriate.

Building Details	Name	Aldwin Courts Carport O			
Building Location ID	PRO 0811	B012 Multiple Building Site Y			
Building Address	55 Aldwins	Road, Phillipstown		No. of residential units	-
Soil Technical Category	N/A	Importance Level	1	Approximate Year Built	1976
Foot Print (m ²)	60	Storeys above ground	Storeys above ground 1		0
Type of Construction	Metal shee footing, ste	al sheet roof on timber joists and beams, lightly reinforced concrete masonry wall with strip ting, steel pipe corner posts and slab on grade floor.			
Qualitative L5 Report Results Summary					
Building Occupied	Y	Aldwin Courts Carport O is currently in use.			
Suitable for Continued Occupancy	Y	Aldwin Courts Carport O is suitable for continued use.			
Key Damage Summary	Y	Refer to summary of building damage in Section 3.1 of this report			
Critical Structural Weaknesses (CSW)	N	No critical structural weaknesses found.			

Levels Survey Results	Ν	Floor levels are acceptable.
Building %NBS From Analysis	100%	Strengthening is carried out by OPUS- Refer to OPUS strengthening report.

Approval

Author Signature

M Ardalour

Approver Signature

Helliet

Name	Manoochehr Ardalany	Name	David Elliott
Title	Structural Engineer	Title	Senior Structural Engineer

1 Introduction

1.1 General

On 14 August 2013 Aurecon engineers visited the Aldwin Courts to carry out a quantitative building damage assessment on behalf of Christchurch City Council. Detailed visual inspections were carried out to assess the damage caused by the earthquakes on 4 September 2010, 22 February 2011, 13 June 2011, 23 December 2011 and related aftershocks.

The scope of work included:

- Assessment of the nature and extent of the building damage;
- Visual assessment of the building strength particularly with respect to safety of occupants if the building is currently occupied; and
- Assessment of requirements for detailed engineering evaluation including geotechnical investigation, level survey and any areas where linings and floor coverings need removal to expose structural damage.

On 11 September 2015 we were informed by the council that the following repair and strengthening works are completed for residential blocks and carports:

- All units reroofed with lightweight metal roofing.
- Internal cosmetic repairs completed.
- Masonry wall veneers have been repaired and painted.
- Perimeter foundation cracks have been repaired.
- Concrete slab cracks have been repaired.
- Stand-alone Carports have been strengthened to 100% NBS based on an Opus design solution.
- Masonry walls have been repaired.
- Concrete slab cracks have been repaired.
- Grout injection under the intertenancy fire wall of Unit 4 and Unit 5 is undertaken.

Aurecon has not revisited Aldwin courts to review the strengthening work and this report is based on information provided by Christchurch City Council. Strengthening work on carports were completed by OPUS and we have updated our previous DEE report (report dated 1 November 2013) in accordance with information provided by the council. In addition, Structural performance factor (Sp) of 0.5 has been recommended in new version of NZSEE (NZSEE 2013) for seismic assessment of timber framed building. We have updated our calculations to include this new information which reflect good performance of the buildings.

This report outlines the updated results of our Quantitative Assessment of damage to Aldwin Courts and is based on the Detailed Engineering Evaluation Procedure document issued by the Structural Advisory Group on 19 July 2011.

2 Description of the Building

2.1 Building Age and Configuration

Built in 1976 the Aldwin Courts housing development consists of seven residential buildings (each containing multiple units) with five carports. Refer to Figure 1 for a plan arrangement of Aldwin Courts.

2.1.1 Buildings

The buildings are single storey timber frame buildings with plasterboard lining on the interior and a lightly reinforced masonry veneer on the exterior. Reinforced masonry firewalls with gable roofs are located between units and connected into the roof diaphragm. The high-pitched roofs supported by timber purlins and rafters have been replaced with light weight roofs.

All of the Aldwin Courts buildings are similar in construction methodology and materials but differ in layout, as shown in Figure 1. A number of the buildings are connected onto carports through the exterior masonry veneer.

2.1.2 Carports

The carports consist of lightly reinforced masonry walls (D12 @ 2000 mm c/c) with recently upgraded light weight steel sheeting roofing and steel tube posts.

Carports K and L are attached to Blocks C and E (respectively) while the other carports are all independent structures. For carports K and L, a portion of the carport roof is supported by the masonry veneer of the Residential Blocks C and E.

2.2 Building Designations

The labels of the buildings with their unit numbers are presented in Table 1. In addition, the locations of buildings are shown in Figure 1.

	• • • •	-
Label	Units	Туре
Block A	1, 2 & 3	Single storey
Block B	4, 5 & 6	Single storey
Block C	7 & 8	Single storey
Block D	9,10 &11	Single storey
Block E	12,12a & 14	Single storey
Block F	15,16 & 17	Single storey
Block G	18, 19 & 20	Single storey
Carport J	-	Separate carport
Carport K	-	Attached carport
Carport L	-	Attached carport
Carport M	-	Separate carport
Carport O	-	Separate carport

Table 1: Building Type and Designation



Figure 1. Plan View of Aldwin Courts (55 Aldwins Road, Phillipstown)

2.3 Building Structural Systems Vertical and Horizontal

2.3.1 Buildings

The single storey buildings of Aldwin Courts are regular structures. The light weight metal roofs are supported on timber trusses that transfer loads to the external timber walls. These timber walls (lined with plasterboard and tied into masonry veneers) take the horizontal earthquake induced forces in the along and across directions.

2.3.2 Carports

The vertical loads in the carports have a simple load path whereby they transfer directly to lightly reinforced masonry walls and steel posts. Lateral loads are taken in the along and across directions through in-plane shear and out-of-plane moment of the masonry walls. Strengthening of the separate carports (by OPUS) may have introduced a new load path for the seismic induced forces for separate carports.

2.4 Reference Building Type

The buildings in Aldwin Courts are basic structures with timber framed walls that are lined with plasterboard. This type of building has typically performed well under seismic loading.

2.5 Building Foundation System and Soil Conditions

The Aldwin Courts foundations consist of concrete strip footings and concrete slab on grade floor. Aldwin Courts is classified as TC2 based on Canterbury Geotechnical Database, which means "minor to moderate damage from liquefaction is possible in future significant earthquakes". However a significant amount of liquefied silt (sand boils) was observed in and around Blocks A, B and C during the first visit of the site in 2013. In addition, aerial photos taken soon after the 13th June 2011 earthquake show liquefaction in the area. A deep geotechnical investigation is required to indicate the categorisation of soil type.

2.6 Available Structural Documentation and Inspection Priorities

Structural and architectural drawings were available for Aldwin Courts. The generic building type for Aldwin Courts is a timber-framed building constructed in the 1970s. This type of structure has performed reasonably well during the Canterbury Earthquakes. To confirm drawings, inspections were undertaken in 2013 to understand the construction of the buildings and identify any likely critical areas. Potential damage such as cracking to the block walls and concrete floor slabs was also inspected.

2.7 Available Survey Information

A floor level survey of each building was previously undertaken to establish the level of unevenness across the floors. All levels were measured on top of the existing floor coverings which may have introduced a margin of error.

The Ministry of Business, Innovation and Employment (MBIE) published the guideline "Repairing and rebuilding houses affected by the Canterbury earthquakes" in 2012, which recommends some form of re-levelling or rebuilding of the floor for the following scenarios.

- 1. If the slope is greater than 0.5% for any two points more than 2 m apart; or
- 2. If the variation in level over the floor plan is greater than 50 mm; or
- 3. If there is significant cracking of the floor.

It is important to note that these figures are recommendations and are only intended to be applied to residential buildings. The levels and slopes of the carport slabs were visually inspected and found to be fit for purpose.

The floor levels for a number of buildings of Aldwin Courts were found to be outside of the recommended margins. While a summary of the critical results from the floor level survey is presented in Table 2, a complete level survey can be found in Appendix A.



Block	Residential Unit	Maximum Variation in Level Over The Floor (mm)	Maximum Slope Measured (%)
A	1	28	0.72
A	2	32	0.90
A	3	40	0.75
В	4	50	0.80
В	6	40	0.96
С	8	32	0.90
D	10	36	0.70
D	11	48	0.75
G	18	32	0.60
G	20	34	0.60

Table 2: Summary of Critical Slopes

Note: Table 2 shows the residential units with the maximum floor slope variation.

3 Structural investigation

3.1 Summary of Building Damage

Most units of Aldwin Courts were occupied at the time when the damage assessment was carried out. A damage assessment was performed on 14 August 2013 at the Aldwin Courts and the following damage was observed. Repair of the damage are discussed in section 7 of this report.

Table 3: Damage Summary

Building	Damage Observed
Block A	 Cracks in the area around openings (i.e. windows and door frames) Cracks in the window frame Cracks in the ceiling Cracks in the mortar joints Liquefied silt inside the building (unit 2) Cracks in the concrete slab on grade Cracks in the plasterboard walls Cracks in the mortar joints around the windows
	Cracks in the foundation
Block B	 Cracks in the area around openings (i.e. windows and door frames) Cracks in the plasterboard walls Cracked glass window panels Considerable amount of liquefied silt inside units 4 and 5 Note: The liquefaction inside units 4 and 5 has caused damage to and
Block C	Cracks in the area around epopings (i.e. windows and door frames)
DIOCK C	 Cracks in the plasterboard walls Cracks across the ceiling Step cracks in the masonry veneers

	 Cracks in the perimeter concrete foundation Cracks in the mortar joints of the masonry veneer Cracks in the concrete slab on grade
Block D	 Cracks in the area around openings (i.e. windows and door frames) Cracks in the plasterboard walls Cracks in the concrete slab on grade Step cracks in masonry veneers Cracked glass panels in door Cracks in the ceiling
Block E	 Concrete roof tiles have been displaced and become unattached. A number were missing and some had fallen to the ground. Cracks in the area around openings (i.e. windows and door frames) Cracks in the plasterboard walls Cracks in the perimeter concrete foundation Cracks in the mortar joints of the masonry veneer Step cracks in the masonry veneers
Block F	 Cracks in the area around openings (i.e. windows and door frames) Cracks in the plasterboard walls Cracks in the door frames Cracks in the perimeter concrete foundation Crack in the concrete slab on grade Step cracks in the masonry veneers Cracks in the mortar joint of the block veneer
Block G	 Cracks in the ceiling Cracks in the area around openings (i.e. windows and door frames) Large crack in concrete slab Cracks in the door frames Cracks in the plasterboard walls Step cracks in masonry veneer Cracks in the mortar joint of the masonry veneer
Carport J	 Step cracks in the masonry walls Cracks in the concrete floor Rotation of roof timber joints under the roof Mortar between standalone carport masonry wall and length of masonry wall connected onto Block buildings has come out Split in timber at connection point between timber post attached onto masonry wall and timber beam
Carports K, L, M and O	 Step cracks in the masonry walls Cracks in the concrete floor Rotation of roof timber joints under the roof Mortar between standalone carport masonry wall and length of masonry wall connected onto Block buildings has come out

3.2 Record of Intrusive Investigation

The concrete masonry walls of the carports were scanned using a Hilti rebar scanner and this confirmed the presence of reinforcement shown on the as-built drawings. Due to the generic nature of the Aldwin Courts, a significant amount of structural information can be inferred from the building form and construction materials. Because of this, and as there are a good number of structural drawings, no other intrusive investigations were carried out for the buildings at Aldwin Courts.

3.3 Damage Discussion

Moderate damage of the buildings was observed at Aldwin Courts. This is expected due to the regular shape and density of the walls in the building. Apart from liquefaction, the main damage noted in the buildings was minor to moderate cracking in the plasterboard walls and ceilings, and in the mortar joints of the masonry veneers. Some damage and separation of the concrete roof tiles was observed with a few tiles having fallen off the roof. The carport walls have moderate to severe cracks due to in-plane and out-of-plane earthquake induced forces.

We note that as a part of repair/strengthening works carried out by council a portion of above damage has been rectified and are discussed in chapter 1 and chapter 7.

4 Building Review Summary

4.1 Building Review Statement

The finishes of Aldwin Courts obstructed the viewing in some parts of the structure. Nevertheless, a damage assessment was undertaken assuming that the damage to the finishes of the building would indicate a commensurate level of displacement damage on the building's structure.

As no original calculations were available, assumptions had to be made in order to complete calculations using current NZ standards and NZSEE guidelines as referenced in Appendix A.

4.2 Critical Structural Weaknesses

No specific Critical Structural Weaknesses (CSW) were identified as a part of the building quantitative assessment.

5 Building Strength

(Refer to Appendix C for background information)

5.1 General

The Aldwin Courts buildings consist of a timber truss roof on timber framed walls which are lined with plasterboard. They are intrinsically ductile and have stood up well in the recent seismic events. This is evidenced by the low level of damage described in Section 3.1 above.

5.2 Existing Building Strength

We consider that the damage to the building has not resulted in any measurable reduction in the strength of the building and so our strength assessment is based on the pre-earthquake condition of the building. Selected assessment seismic parameters are presented in Table 4.

Seismic Parameter	Parameter	Comment/Reference
Site Soil Class	D	NZS 1170.5:2004, Clause 3.1.3, Deep or Soft Soil
Site Hazard Factor, Z	0.30	DBH Info Sheet on Seismicity Changes (Effective 19 May 2011)
Return period Factor, R_u	1.0	NZS 1170.5:2004, Table 3.5

able 4: Seismic	Assessment	Parameters
-----------------	------------	-------------------

Ductility Factor, μ	1.25	Lightly reinforced masonry walls
Ductility Factor μ	2.00	Timber framed walls lined with plasterboard
Structural performance factor S_p	0.93	As per NZS 1170.5 for ductility 1.25
Structural performance factor S_p	0.70	As per NZS 1170.5 for ductility 2
Structural performance factor S_p	0.50	As per NZSEE (2013) for timber framed buildings*

The seismic demand for Aldwin Courts has been calculated based on the current code requirements of NZS 1170.5 (Structural Design Actions 1170.5:2004). The capacity of the existing walls in the buildings were calculated from the assumed strengths of the existing materials and the number and length of walls present for both the along and across directions. Some assumptions as presented in Appendix B were made to calculate the capacity of the building. These values were compared with the calculated seismic demand for derivation of %NBS values. The %NBS results are summarized in Table 5.

As a part of the strength assessment, we have assumed that the masonry veneers are properly tied to the timber frame walls. This assumption is based on the construction specifications provided by Christchurch City Council and observations made on-site using a Hilti rebar scanner. Accordingly for the buildings no out-of-plane strength analysis was carried out and the strength of the buildings was limited to the in-plane strength of the timber framed walls (lined with plasterboard) in the along and across directions.

Building	Direction	%NBS Original	%NBS after strengthening with Sp = 0.7	%NBS after strengthening with Sp = 0.5	Note
Block A	Along	44	59	83	-
	Across	48	85	100	-
Firewall of Block A	Out of plane	41	85	-	-
Block B	Along	39	52	73	-
	Across	37	63	88	-
Firewall of Block B	Out of plane	41	85	-	-
Block C	Along	66	90	100	-
	Across	37	57	80	-
Firewall of Block C	Out of plane	41	85	-	-
Block D	Along	44	59	83	-
	Across	48	85	100	-
Firewall of Block D	Out of plane	41	85	85	-
Block E	Along	43	56	78	-
	Across	37	81	100	-
Firewall of Block E	Out of plane	41	85	-	-
Block F	Along	44	59	83	-
	Across	48	85	100	-
Firewall of Block F	Out of plane	41	85	_	-
Block G	Along	44	59	83	-
	Across	48	85	100	-

Table 5: Building Strength Summary

Building	Direction	%NBS Original	%NBS after strengthening with Sp = 0.7	%NBS after strengthening with Sp = 0.5	Note
Firewall of Block G	Out of plane	41	85	-	-
Carport J	Out of plane	26	100	-	Strengthening as per OPUS design works
Carport K	Out of plane	37	37	-	Limited by capacity of timber diaphragm
Carport L	Out of plane	26	37	-	Limited by capacity of timber diaphragm
Carport M	Out of plane	26	100	-	Strengthening as per OPUS design works
Carport O	Out of plane	36	100	-	Strengthening as per OPUS design works

Notes:

- As a part of the strengthening works, roofs are replaced with lightweight material and the new weight of the roof has been included in the calculations (refer to Appendix A for assumptios0.
- NZSEE (2013) has recommended Sp=0.5 to account for good performance of timber framed buildings during earthquake. We have included %NBS values for this upgrade in Table 5.

6 Results Discussion

This quantitative analysis was undertaken using the assumed approximate bracing capacity of the timber walls in accordance with the New Zealand Society of Earthquake Engineering (NZSEE) guidelines for the Assessment and Improvement of the Structural Performance of Buildings in Earthquakes and NZS 4230:2004, Design of Reinforced Concrete Masonry Structures.

The buildings had timber walls evenly distributed in both directions which provides a strength between 73% NBS to 100% NBS. The separate carports are strengthened to 100%. There remain two attached carparks (Carport K and L) which are lightly reinforced with the %NBS of 37% which will need to be strengthened to 67% NBS or 100% NBS if possible.

7 Conclusions and Recommendations

As noted within the report, moderate levels of visible damage were observed in previous damage assessment for the buildings and no critical structural weaknesses were identified as a part of strength assessment. Therefore, it is considered that Aldwin Courts is suitable for continued occupancy.

We note that following repair/strengthening works are completed for the buildings:

- Crack repair for internal wall and ceiling fibrous plaster linings;
- · Heavy roof tiles of the buildings are replaced with modern light weight roof;
- Cracks in the concrete floor of the units are epoxy injected;
- Some of the joints have been repaired by grout injection;
- A number of external concrete pathways slabs are replaced;
- Plasterboard walls and internal linings for Unit 4 and Unit 5 are replaced;
- Grout injection under the fire wall between Unit 4 and Unit 5 has been completed;
- Some old conservatory are removed from the buildings; and
- Separate carports have been strengthened to 100% NBS by a design works by OPUS.

We understand that no strengthening works are completed for the attached carports (carports K and L). We recommend strengthening of these carport to 67% NBS or 100% NBS if possible. In addition,

as no releveling has completed for the buildings and as per our previous report we recommend releveling of the units 1,2,3,4,5 and 6. Releveling of other units are not recommended because the level differences are limited to small areas and are still within tolerable limits for the buildings.

8 Explanatory Statement

The inspections of the building discussed in this report have been undertaken to assess structural earthquake damage. No analysis has been undertaken to assess the strength of the building or to determine whether or not it complies with the relevant building codes, except to the extent that Aurecon expressly indicates otherwise in the report. Aurecon has not made any assessment of structural stability or building safety in connection with future aftershocks or earthquakes – which have the potential to damage the building and to jeopardise the safety of those either inside or adjacent to the building, except to the extent that Aurecon expressly indicates otherwise in the report.

This report is necessarily limited by the restricted ability to carry out inspections due to potential structural instabilities/safety considerations, and the time available to carry out such inspections. The report does not address defects that are not reasonably discoverable on visual inspection, including defects in inaccessible places and latent defects. Where site inspections were made, they were restricted to external inspections and, where practicable, limited internal visual inspections.

To carry out the structural review, existing building drawings were obtained from the Christchurch City Council records. We have assumed that the building has been constructed in accordance with the drawings.

While this report may assist the client in assessing whether the building should be strengthened, that decision is the sole responsibility of the client.

This review has been prepared by Aurecon at the request of its client and is exclusively for the client's use. It is not possible to make a proper assessment of this review without a clear understanding of the terms of engagement under which it has been prepared, including the scope of the instructions and directions given to and the assumptions made by Aurecon. The report will not address issues which would need to be considered for another party if that party's particular circumstances, requirements and experience were known and, further, may make assumptions about matters of which a third party is not aware. No responsibility or liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this report by any third party.

Without limiting any of the above, Aurecon's liability, whether under the law of contract, tort, statute, equity or otherwise, is limited as set out in the terms of the engagement with the client.

Appendices



Appendix A Site Map, Photos, Levels Survey Results and assumptions



Aerial photograph of Aldwin Courts Showing along and across for buildings



Aldwin Courts (prior to repair/strengthening)		
Building elevation (typical).	<image/>	
Cracks in the ceiling (typical).		

Liquefied silt inside the building (unit 2).	
Liquefied silt inside the building (unit 2).	
Liquefied silt inside the building (unit 2).	

Cracks in the concrete floor (unit 2).	
Cracks in the plasterboard wall (unit2).	
Liquefied silt inside the building (unit 4).	

Liquefied silt inside the building (unit 4).	
Liquefied silt inside the building. Silt has penetrated inside the timber walls (unit 4).	
Damage to the plasterboard and timber walls (unit 4).	



Liquefied silt inside the building (unit 5).	13/08/2013
Damage to the plasterboard walls (unit 5).	
Void under fire wall due to liquefaction (unit 5).	
















Aldwin Courts Site Photographs

Aldwir	Courts (After strengthening)
General photos of the units	
General photos of the carports	
General photo of the repair woks	

Assumptions

- External blocks are properly connected to internal timber walls.
- Fire wall between units are reinforced solid blocks.
- Diaphragm of the units are properly connected to the intertenancy fire wall.
- Weight of new light weight roof = 0.3kPa
- Ductility 2 for out of plane of reinforced fire walls between units.
- Attached carports (Carports K and L) have timber diaphragm with nailing 2.50mm @250mm.
- The roof of attached carports (Carports K and L) are properly attached to the building blocks and can transfer earthquake induced loads to the buildings.

Appendix B References

- 1. Engineering Advisory Group (EAG): Guidance on Detailed Engineering Evaluation of Earthquake Affected Non-residential Buildings in Canterbury: July 2011
- 2. Ministry of Business, Innovation and Employment (MBIE) "Repairing and rebuilding houses affected by the Canterbury earthquakes", December 2012
- 3. New Zealand Society for Earthquake Engineering (NZSEE), "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes", April 2012
- 4. Standards New Zealand, "AS/NZS 1170 Part 0, Structural Design Actions: General Principles", 2002
- 5. Standards New Zealand, "AS/NZS 1170 Part 1, Structural Design Actions: Permanent, imposed and other actions", 2002
- Standards New Zealand, "NZS 1170 Part 5, Structural Design Actions: Earthquake Actions New Zealand", 2004
- 7. Standards New Zealand, "NZS 3101 Part 1, The Design of Concrete Structures", 2006
- 8. Standards New Zealand, "NZS 4230, Design of Reinforced Concrete Masonry Structures", 2004

Appendix C Strength Assessment Explanation

New building standard (NBS)

New building standard (NBS) is the term used with reference to the earthquake standard that would apply to a new building of similar type and use if the building was designed to meet the latest design Codes of Practice. If the strength of a building is less than this level, then its strength is expressed as a percentage of NBS.

Earthquake Prone Buildings

A building can be considered to be earthquake prone if its strength is less than one third of the strength to which an equivalent new building would be designed, that is, less than 33%NBS (as defined by the New Zealand Building Act). If the building strength exceeds 33%NBS but is less than 67%NBS the building is considered at risk.

Christchurch City Council Earthquake Prone Building Policy 2010

The Christchurch City Council (CCC) already had in place an Earthquake Prone Building Policy (EPB Policy) requiring all earthquake-prone buildings to be strengthened within a timeframe varying from 15 to 30 years. The level to which the buildings were required to be strengthened was 33%NBS.

As a result of the 4 September 2010 Canterbury earthquake the CCC raised the level that a building was required to be strengthened to from 33% to 67% NBS but qualified this as a target level and noted that the actual strengthening level for each building will be determined in conjunction with the owners on a building-by-building basis. Factors that will be taken into account by the Council in determining the strengthening level include the cost of strengthening, the use to which the building is put, the level of danger posed by the building, and the extent of damage and repair involved.

Irrespective of strengthening level, the threshold level that triggers a requirement to strengthen is 33%NBS.

As part of any building consent application fire and disabled access provisions will need to be assessed.

Christchurch Seismicity

The level of seismicity within the current New Zealand loading code (AS/NZS 1170) is related to the seismic zone factor. The zone factor varies depending on the location of the building within NZ. Prior to the 22nd February 2011 earthquake the zone factor for Christchurch was 0.22. Following the earthquake the seismic zone factor (level of seismicity) in the Christchurch and surrounding areas has been increased to 0.3. This is a 36% increase.

For this assessment, the building's earthquake resistance is compared with the current New Zealand Building Code requirements for a new building constructed on the site. This is expressed as a percentage of new building standard (%NBS). The new building standard load requirements have been determined in accordance with the current earthquake loading standard (NZS 1170.5:2004 Structural design actions - Earthquake actions - New Zealand).

The likely capacity of this building has been derived in accordance with the New Zealand Society for Earthquake Engineering (NZSEE) guidelines 'Assessment and Improvement of the Structural Performance of Buildings in Earthquakes' (AISPBE), 2006. These guidelines provide an Initial Evaluation Procedure that assesses a buildings capacity based on a comparison of loading codes from when the building was designed and currently. It is a quick high-level procedure that can be used when undertaking a Qualitative analysis of a building. The guidelines also



provide guidance on calculating a modified Ultimate Limit State capacity of the building which is much more accurate and can be used when undertaking a Quantitative analysis.

The New Zealand Society for Earthquake Engineering has proposed a way for classifying earthquake risk for existing buildings in terms of %NBS and this is shown in Figure C1 below.

Description	Grade	Risk	%NBS	Existing Building Structural Performance		Improvement of St	ructural Performance
					_►	Legal Requirement	NZSEE Recommendation
Low Risk Building	A or B	Low	Above 67	Acceptable (improvement may be desirable)		The Building Act sets no required level of structural improvement	100%NBS desirable. Improvement should achieve at least 67%NBS
Moderate Risk Building	B or C	Moderate	34 to 66	Acceptable legally. Improvement recommended		(unless change in use) This is for each TA to decide. Improvement is not limited to 34%NBS.	Not recommended. Acceptable only in exceptional circumstances
High Risk Building	D or E	High	33 or lower	Unacceptable (Improvement		Unacceptable	Unacceptable

Figure C1: NZSEE Risk Classifications Extracted from table 2.2 of the NZSEE 2006 AISPBE Guidelines

Table C1 below compares the percentage NBS to the relative risk of the building failing in a seismic event with a 10% probability of exceedance in 50 years (i.e. 0.2% in the next year). It is noted that the current seismic risk in Christchurch results in a 6% probability of exceedance in the next year.

Percentage of New Building Standard (%NBS)	Relative Risk (Approximate)
>100	<1 time
80-100	1-2 times
67-80	2-5 times
33-67	5-10 times
20-33	10-25 times
<20	>25 times

Table C1: Relative Risk of Building Failure In A

Appendix D Background and Legal Framework

Background

Aurecon has been engaged by the Christchurch City Council (CCC) to undertake a detailed engineering evaluation of the building

This report is a Qualitative Assessment of the building structure, and is based on the Detailed Engineering Evaluation Procedure document (draft) issued by the Structural Advisory Group on 19 July 2011.

A qualitative assessment involves inspections of the building and a desktop review of existing structural and geotechnical information, including existing drawings and calculations, if available.

The purpose of the assessment is to determine the likely building performance and damage patterns, to identify any potential critical structural weaknesses or collapse hazards, and to make an initial assessment of the likely building strength in terms of percentage of new building standard (%NBS).

At the time of this report, no intrusive site investigation, detailed analysis, or modelling of the building structure had been carried out. Construction drawings were made available, and these have been considered in our evaluation of the building. The building description below is based on a review of the drawings and our visual inspections.

Compliance

This section contains a brief summary of the requirements of the various statutes and authorities that control activities in relation to buildings in Christchurch at present.

Canterbury Earthquake Recovery Authority (CERA)

CERA was established on 28 March 2011 to take control of the recovery of Christchurch using powers established by the Canterbury Earthquake Recovery Act enacted on 18 April 2011. This act gives the Chief Executive Officer of CERA wide powers in relation to building safety, demolition and repair. Two relevant sections are:

Section 38 – Works

This section outlines a process in which the chief executive can give notice that a building is to be demolished and if the owner does not carry out the demolition, the chief executive can commission the demolition and recover the costs from the owner or by placing a charge on the owners' land.

Section 51 – Requiring Structural Survey

This section enables the chief executive to require a building owner, insurer or mortgagee carry out a full structural survey before the building is re-occupied.

We understand that CERA will require a detailed engineering evaluation to be carried out for all buildings (other than those exempt from the Earthquake Prone Building definition in the Building Act). It is anticipated that CERA will adopt the Detailed Engineering Evaluation Procedure document (draft) issued by the Structural Advisory Group on 19 July 2011. This document sets out a methodology for both qualitative and quantitative assessments.

The qualitative assessment is a desk-top and site inspection assessment. It is based on a thorough visual inspection of the building coupled with a review of available documentation such as drawings and specifications. The quantitative assessment involves analytical calculation of the buildings strength and may require non-destructive or destructive material testing, geotechnical testing and intrusive investigation.

It is anticipated that factors determining the extent of evaluation and strengthening level required will include:

- The importance level and occupancy of the building
- The placard status and amount of damage
- The age and structural type of the building
- Consideration of any critical structural weaknesses
- The extent of any earthquake damage

Building Act

Several sections of the Building Act are relevant when considering structural requirements:

Section 112 – Alterations

This section requires that an existing building complies with the relevant sections of the Building Code to at least the extent that it did prior to any alteration. This effectively means that a building cannot be weakened as a result of an alteration (including partial demolition).

Section 115 – Change of Use

This section requires that the territorial authority (in this case Christchurch City Council (CCC)) be satisfied that the building with a new use complies with the relevant sections of the Building Code 'as near as is reasonably practicable'. Regarding seismic capacity 'as near as reasonably practicable' has previously been interpreted by CCC as achieving a minimum of 67%NBS however where practical achieving 100%NBS is desirable. The New Zealand Society for Earthquake Engineering (NZSEE) recommend a minimum of 67%NBS.

Section 121 – Dangerous Buildings

The definition of dangerous building in the Act was extended by the Canterbury Earthquake (Building Act) Order 2010, and it now defines a building as dangerous if:

- in the ordinary course of events (excluding the occurrence of an earthquake), the building is likely to cause injury or death or damage to other property; or
- in the event of fire, injury or death to any persons in the building or on other property is likely because of fire hazard or the occupancy of the building; or
- there is a risk that the building could collapse or otherwise cause injury or death as a result of earthquake shaking that is less than a 'moderate earthquake' (refer to Section 122 below); or
- there is a risk that that other property could collapse or otherwise cause injury or death; or
- a territorial authority has not been able to undertake an inspection to determine whether the building is dangerous.

Section 122 – Earthquake Prone Buildings

This section defines a building as earthquake prone if its ultimate capacity would be exceeded in a 'moderate earthquake' and it would be likely to collapse causing injury or death, or damage to other property. A moderate

earthquake is defined by the building regulations as one that would generate ground shaking 33% of the shaking used to design an equivalent new building.

Section 124 – Powers of Territorial Authorities

This section gives the territorial authority the power to require strengthening work within specified timeframes or to close and prevent occupancy to any building defined as dangerous or earthquake prone.

Section 131 – Earthquake Prone Building Policy

This section requires the territorial authority to adopt a specific policy for earthquake prone, dangerous and insanitary buildings.

Christchurch City Council Policy

Christchurch City Council adopted their Earthquake Prone, Dangerous and Insanitary Building Policy in 2006. This policy was amended immediately following the Darfield Earthquake of the 4th September 2010.

The 2010 amendment includes the following:

- A process for identifying, categorising and prioritising Earthquake Prone Buildings, commencing on 1 July 2012;
- A strengthening target level of 67% of a new building for buildings that are Earthquake Prone;
- A timeframe of 15-30 years for Earthquake Prone Buildings to be strengthened; and,
- Repair works for buildings damaged by earthquakes will be required to comply with the above.

The council has stated their willingness to consider retrofit proposals on a case by case basis, considering the economic impact of such a retrofit.

We anticipate that any building with a capacity of less than 33%NBS (including consideration of critical structural weaknesses) will need to be strengthened to a target of 67%NBS of new building standard as recommended by the Policy.

If strengthening works are undertaken, a building consent will be required. A requirement of the consent will require upgrade of the building to comply 'as near as is reasonably practicable' with:

- The accessibility requirements of the Building Code.
- The fire requirements of the Building Code. This is likely to require a fire report to be submitted with the building consent application.

Building Code

The building code outlines performance standards for buildings and the Building Act requires that all new buildings comply with this code. Compliance Documents published by The Department of Building and Housing can be used to demonstrate compliance with the Building Code.

After the February Earthquake, on 19 May 2011, Compliance Document B1: Structure was amended to include increased seismic design requirements for Canterbury as follows:

- Hazard Factor increased from 0.22 to 0.3 (36% increase in the basic seismic design load)
- Serviceability Return Period Factor increased from 0.25 to 0.33 (80% increase in the serviceability design loads when combined with the Hazard Factor increase)

The increase in the above factors has resulted in a reduction in the level of compliance of an existing building relative to a new building despite the capacity of the existing building not changing.

Appendix E Standard Reporting Spread Sheets

Aldwin Courts Block A (Flats 1,2,3) Aldwin Courts Block B (Flats 4,5,6) Aldwin Courts Block C (Flats 7,8) Aldwin Courts Block D (Flats 9,10,11) Aldwin Courts Block E (Flats 12,13,14) Aldwin Courts Block F (Flats 15,16,17) Aldwin Courts Block G (Flats 18,19,20) Aldwin Courts Block G (Carport) Aldwin Courts Block K (Carport) Aldwin Courts Block L (Carport) Aldwin Courts Block M (Carport) Aldwin Courts Block M (Carport) PRO 0811 B001 PRO 0811 B002 PRO 0811 B003 PRO 0811 B004 PRO 0811 B005 PRO 0811 B006 PRO 0811 B007 PRO 0811 B010 PRO 0811 B011 PRO 0811 B012

	Detailed Engineering Evaluation Summary Data			V1.14
	Location	er Diesk A. Alduine Courte	Deviewer	Douid Elliott
Answer of the second of the	Building Nam	Diouk A - Aldwins Courts Unit	No: Street CPEng No: 55 Aldwine Dead	202002
	Building Addres	S: Block A (Units 1, 2 & 3) FLATS 1, 2 & 3	55 Aldwins Road Company:	Aurecon
	Legal Description	n: DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698 03 371 0761
Bit State S	GPS sour	b: Degrees 43	Min Sec 32 25.76 Date of submission:	16/12/2015
Budge (single shortsher (DZ) DE TAT ID D. LT ID DE TAT ID D. LT ID DE TAT ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin De Tat ID D. LT De Tat ID D. LT De Tat ID D. LT Bin <tdd< td=""><td>GPS ea</td><td>it: 172</td><td>40 0.57 Inspection Date:</td><td>13/08/2013</td></tdd<>	GPS ea	it: 172	40 0.57 Inspection Date:	13/08/2013
init State sta	Building Unique Identifier (CCC): PRO 0811 BLDG 001	Is there a full report with this summary?	yes
00 Status (Status (Statu				
Absolution Absolution <td>Site</td> <td></td> <td></td> <td></td>	Site			
Base State Bill 1995 1999 1991 1991 1991 1991 1991 19	Site slop Soil typ	e: flat e: mixed	Max retaining height (m): Soil Profile (if available):	
Andreg with the product of the prod	Site Class (to NZS1170). Proximity to waterway (m. if <100	i): D	If Ground improvement on site, describe:	
Image is consequence in the consequence	Proximity to clifftop (m, if < 100n Proximity to cliff base (m if <100n	i):		
handing han	Proximity to clin base (III,II Croon	/• [
No. do set or good or g	Building			
Automation Automation <td>No. of storeys above grour Ground floor spl</td> <td>d: 1 t? no</td> <td>single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):</td> <td></td>	No. of storeys above grour Ground floor spl	d: 1 t? no	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Angel to mag have been by each base of appendix to be of appe	Storeys below grou Foundation typ	id 0 e: strip footings	if Foundation type is other, describe:	
More delarging insert 7 Data delarging insert 100 Since delarging insert 100 Since delarging insert 100 Since delarging insert 200 00 Since delarging insert Since delarging insert 200	Building height (n Floor footprint area (appro	i):2.60	height from ground to level of uppermost seismic mass (for IEP only) (m):	
	Age of Building (year	i):37	Date of design:	1965-1976
And and mathematication And and mathematication And and mathematication And and mathematication Mathematication Mathematication Mathematication Mathematication Mathematication Mathematication Mathematication Mathematication Mathematication	0	10	If an unkno (unor)	
Bit is discussion Bit is discussion Bit is discussion Bit is discussion Galary Janualis Construction International system International system International system Galary Janualis Construction International system International system International system International system Galary Janualis Construction International system International system International system International system Galary Janualis Construction International system Internation system	Strengtnening preser	n no	And what load level (%g)?	
Lander Aussen in Reference Control Statution Control Statution </td <td>Use (ground floor Use (upper floor</td> <td>i): multi-unit residential i): multi-unit residential</td> <td>Brief strengthening description:</td> <td></td>	Use (ground floor Use (upper floor	i): multi-unit residential i): multi-unit residential	Brief strengthening description:	
	Use notes (if require Importance level (to NZS1170.	i): i): IL2		
Arrisking strature Sector statistics Sector statistics Sector statistics Total statistics Sector statistics Sector statistics Sector statistics Sector statistics Sector statistics </td <td>Gravity Structure</td> <td></td> <td></td> <td></td>	Gravity Structure			
And Sections of Section	Gravity System	i: load bearing walls	trues denth purlin type and cladding	timber purling 1.675m truss depth
Linking Linking <t< td=""><td>Floo</td><td>s: concrete flat slab</td><td>slab thickness (mm)</td><td>100mm slab with 665 mesh - moistop -</td></t<>	Floo	s: concrete flat slab	slab thickness (mm)	100mm slab with 665 mesh - moistop -
Markel and an anomaly and and an anomaly mathem in the data of an anomaly ma	Column	S:		
Land and energing shorters Land and energing sho	Wall	£		
Duthy issues in a constrained in a	Lateral load resisting structure Lateral system alor	g: lightweight timber framed walls	Note: Define along and across in note typical wall length (m)	
The defactor (LS) [m] maximum inscreent effective (LS) [m] ma	Ductility assumed, Period alor	μ: <u>2.00</u>	detailed report! 0.00 estimate or calculation?	estimated
maxman	Total deflection (ULS) (mn	0	estimate or calculation?	estimated
Note specific and specific	maximum interstorey detection (ULS) (mn		estimate or calculation?	estimated
The second process 0.00 extension or calculatory percenter Non-calculate demonster 0.00 extension or calculatory percenter percenter Aveilable documentation 0.00 extension or calculatory percenter pe	Lateral system acros Ductility assumed,	s: lightweight timber framed walls μ: 2.00	note typical wall length (m)	
maximum interactory deficition (ULS) [min]	Period acros Total deflection (ULS) (mn	s: 0.40	0.00 estimate or calculation? estimate or calculation?	estimated estimated
Selection: rent (m) exec black if not relevant Not-statutal elements Selection (not certify if each in the selection	maximum interstorey deflection (ULS) (mn	():	estimate or calculation?	estimated
Note all control in the intervention of the interventervention of the intervention of the inter	Separations:	n:	leave blank if not relevant	
Non-structural determits Sector tail determits Sector tail determits Sector tail determits Determits Sector tail determits Determits Sector tail determits Sector tail determits Sector tail determits Determits Sector tail determits Determits Sector tail determits Determi	east (mn):		
Non-structured elemental Weil clostics Constructured elemental Constructured elemental Constructured Constructured elemental Constructured elemental Co	west (mn):		
Weil Same Describe from carry's fixed Diright describe from carry's fixed Diright describe from carry's fixed Variable documentation Antibiate fixed Antibiate fixed Diright describe from carry's fixed Diright describe from carry's fixed Variable documentation Antibiate fixed Antibiate fixed Diright describe from carry's fixed Diright describe from carry's fixed Variable documentation Antibiate fixed Diright describe fixed<	Non-structural elements		1	
Proof Clocking Metal describe Service(1is) service(1is) Available documentation Architectural period Available documentation Architectural period Service(1is) ferring Original designer name/data Enterprise Homes LM/1274 Original designer name/data Enterprise Homes LM/1274 Structural period original designer name/data Benchice (1) force original designer name/data Consequence Enterprise Homes LM/1274 Bite Original designer name/data Defense Enterprise Homes LM/1274 Differential settement Enterprise Homes LM/1274 <tr< td=""><td>Star Wall claddir</td><td>s: g: brick or tile</td><td>describe (note cavity if exists)</td><td>Cavity between brick veneer and timber framing</td></tr<>	Star Wall claddir	s: g: brick or tile	describe (note cavity if exists)	Cavity between brick veneer and timber framing
Available documentation Architectural partial original designer name/designer name	Roof Claddir Glazir	g: Metal g:	describe	
Available documentation Available documentation Available documentation original designer name/date Encretion desig	Ceiling Services(lis	s: plaster, fixed t):		
Available documentation Architectural partial original designer namektase Enterprise Homes LM1'574 Bitted Original designer namektase Enterprise Homes LM1'574 Original designer namektase Original designer namektase Original designer namektase <td< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td></td><td></td></td<>	· · · · · · · · · · · · · · · · · · ·			
An instrume indication in the indication of the instruction in the instructio	Available documentation	el portiol		Enterprise Harrise Ltd/4074
Methodistic Original designer namedation Damage Genetin tipon Content tipon Damage Site (refer DEE Table 4-2) Site performance Differential setting (refer DEE Table 4-2) Describe damage (remark tabs moved out of unit 2 due to damage index description description removed in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the appendix description removed due to lagued action damage is regared in the	Structu	al partial	original designer name/date	Enterprise Homes Ltd/1974
Geotech report Ince original designer name/date Damage Bite: Site performance:	Electric	al none	original designer name/date original designer name/date	
Damage Site: Site performance: Describe damage Terrar has moved out of unit 2 due to damage Cerver Place 4-2) Settement: 25-100mm notes (if applicable)	Geotech rep	/rt_none	original designer name/date	
Site Site performance: Describe damage: Tent has moved out of unit 2 due to damage; (refer DEE Table 4-2) Settement: Zet:00mm notes (if applicable): notes (if applica	Damage			
Settement: Settement: <td>Site: Site performand (refer DEE Table 4-2)</td> <td>e:</td> <td>Describe damage:</td> <td>Tenant has moved out of unit 2 due to damage.</td>	Site: Site performand (refer DEE Table 4-2)	e:	Describe damage:	Tenant has moved out of unit 2 due to damage.
Legeneration Legeneration Line that is non-state Index that is non-state Differential lateral spread Index that is non-state Ground racks Index that is non-state Building: Current Placard Status: Index that is non-state Building: Current Placard Status: Index that is non-state Building: Current Placard Status: Index that is non-state Describe (summary): -20% CSWs: Demage?: <td>Settleme Differential settleme</td> <td>t: 25-100mm</td> <td>notes (if applicable):</td> <td></td>	Settleme Differential settleme	t: 25-100mm	notes (if applicable):	
Later a spread India a paper and indindia a paper and india a paper and indindindia a paper	Liquefactio	n: more than 10 m³/100m²	notes (if applicable):	Considerable liquefaction on-site.
Under apperting Describe (if applicable): Cracks in walls and base slab. Segments of plate index (if applicable): Building: Current Placard Status: green Along Damage ratio: -20% Describe (summary): -20% Describe (summary): -20% Describe (summary): -20% Diaphragms Damage? fo Damage? Describe (summary): CSW: Damage? Damage? Describe: Pounding: Damage? Damage? Describe: Careet Careet of repair/strengthening required; Interim occupancy Infor structural interim occupancy Building Consent required; Infor structural interim occupancy Along Assessed %NBS before elyuakes; Assessed %NBS before elyuakes; 63% Across Assessed %NBS before elyuakes; Across Assessed %NBS after elyuakes; Across Assessed %NBS after elyuakes; Across Assessed %NBS after elyuakes; Coros Assessed %NBS form IEP below Marge Assessed %NBS after elyuakes; 100% Marge Assess	Lateral Sprea Differential lateral sprea	d: none apparent	notes (it applicable): notes (if applicable):	
Building: Current Placard Status: green Along Damage ratio: -20% Describe (summary): -20% Across Damage ratio: -20% Diaphragms Damage? no Downding: Damage? Describe (summary): 0 Pounding: Damage? no Describe: 0 Non-structural: Damage? pes Describe: 0 Recommendations Level of repair/strengthening required; no ninor structural: Describe: 0 Describe: 0 Along Assessed %MBS before e/quakes: 63%, assessed %MBS from IEP below If IEP not used, please detail Based on calculations assessment methodology: Assessed %MBS before e/quakes: 100%, assessed %MBS from IEP below If IEP not used, please detail Based on calculations assessment methodology: Across Assessed %MBS before e/quakes: 100%, assessed %MBS from IEP below If IEP not used, please detail Based on calculations assessment methodology:	Ground crack Damage to are	a: moderate to substantial (1 in 5)	notes (if applicable): notes (if applicable):	Cracks in walls and base slab. Segments of pla
Current Placard Status: green Along Damage ratio: -20% Describe (summary): -20% Describe (summary): -20% Diaphragms Damage?: no Diaphragms: Damage?: no CSWs: Damage?: no Pounding: Damage?: pescribe: Non-structural: Damage?: pescribe: Describe:	Building:			
Along Damage ratio: -20% Describe (summary): -20% Darage ratio: -20% Describe (summary): -20% Diaphragms Damage?: Diaphragms: Damage?: CSWs: Damage?: Pounding: Damage?: Pounding: Damage?: Non-structural: Damage?: Vest of repair/strengthening required: Iniror structural Building Consent required: Iniror structural Interim occupancy recommendations: Evel of repair/strengthening required: Mong Assessed %NBS before equakes: 63% Across Assessed %NBS before equakes: 63% Across Assessed %NBS before equakes: 100% Mong Assessed %NBS before equakes: 100% Mong Assessed %NBS before equakes: 100%	Current Placard State	s: green		
Across Damage ratio; -20% Diamage ratio; -20% Diaphragms Damage?; Indeptragms Damage?; CSWs: Damage?; Pounding: Damage?; Non-structural: Damage?; Vest Describe; Carpet removed due to liquefaction damage. Cr Recommendations: Inifor structural Building Consent required; Inifor structural Interim occupancy recommendations: Iul occupancy Along Assessed %NBS before equakes; 83% 4Across Assessed %NBS before equakes; 100% 4Across Assessed %NBS before equakes; 100% 100% #### %NBS from IEP below If IEP not used, please detail based on calculations	Along Damage rat Describe (summar	o:20%	Describe how damage ratio arrived at:	
Darlage ratio: 20% During cname % NBS (before) Diaphragms Damage?: no % Diaphragms Damage?: no Describe:	Across	0.	Damage $Ratio = \frac{(\% NBS(before) - \% NBS(after))}{(\% NBS(before) - \% NBS(after))}$	
Diaphragms Damage?: no Describe:	Damage rat Describe (summar	-20%	% NBS (before)	
CSWs: Damage?: no Describe: Pounding: Damage?: no Describe: Non-structural: Damage?: yes Describe: Recommendations: Level of repair/strengthening required: no Describe: Building Consent required: no Describe: Interim occupancy recommendations: Indio consent required: no Describe: Along Assessed %NBS before equakes: 93% 83% 83% ### %NBS from IEP below If IEP not used, please detail Based on calculations assessment methodology: Across Assessed %NBS before equakes: 100% 83%	Diaphragms Damage	?: no	Describe:	
Pounding: Damage? no Describe: Describe: Describe: Carpet removed due to liquefaction damage. Criterion of repair/strengthening required: no Describe: Carpet removed due to liquefaction damage. Criterion occupancy recommendations: full occupancy Describe: Interim occupancy recommendations: full occupancy and the seesed %NBS here equakes: 83% #### %NBS from IEP below If IEP not used, please detail Based on calculations assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: Assessed %NBS here equakes: 100% #### %NBS from IEP below assessment methodology: 100% #### %NBS from IEP below assessment metho	CSWs: Damage	?: no	Describe:	
Non-structural: Damage?; yes Describe: Carpet removed due to liquefaction damage. Cr Recommendations Level of repair/strengthening required: no Describe: Relevel the building, rest of damage is regaired bescribe: Describe: Relevel the building, rest of damage is regaired bescribe: Describe: Relevel the building, rest of damage is regaired bescribe: Describe: Describe: Describe: Describe: Relevel the building, rest of damage is regaired bescribe: Describe:	Pounding: Damage	?: no	Describe:	
Recommendations Describe: Called in generative of damage is regained building consent required: no Building Consent required: Interim occupancy recommendations: Interim occupancy Describe: Along Assessed %NBS before equakes: 63% 83% 84### %NBS from IEP below If IEP not used, please detail based on calculations assessment methodology: Across Assessed %NBS latter equakes: 100% #### %NBS from IEP below	Non-structural:	? ves	Describe	Carpet removed due to liquefaction damage. Cr
Recommendations Importance Importance Importance Describe: Relevel the building, rest of damage is regained bescribe: Describe: Relevel the building, rest of damage is regained bescribe: Describe: Relevel the building, rest of damage is regained bescribe: Describe: Relevel the building, rest of damage is regained bescribe: Describe: Relevel the building, rest of damage is regained bescribe: Relevel the building, rest of damage is regained bescribe: Describe: Relevel the building, rest of damage is regained bescribe: Describe: Describ: <t< td=""><td>Damage</td><td></td><td>Describe.</td><td>Learren removed due to inqueraction damage. Of</td></t<>	Damage		Describe.	Learren removed due to inqueraction damage. Of
Level of repairstreightening required: minor structural Describe: Relevel the building, rest of damage is regaired Building Consent required: Interim occupancy recommendations: full occupancy Describe: Describe: Along Assessed %NBS before equakes: 63% #### %NBS from IEP below If IEP not used, please detail Eased on calculations Across Assessed %NBS latter equakes: 100% #### %NBS from IEP below Assessed %NBS latter equakes: 00%	Recommendations			
Interim occupancy recommendations: Iuli occupancy Describe: Along Assessed %NBS before equakes: 83% ### %NBS from IEP below If IEP not used, please detail <u>Based on calculations</u> assessment methodology: Across Assessed %NBS before equakes: 100% ### %NBS from IEP below Across Assessed %NBS after equakes: 100%	Level of repair/strengthening require Building Consent require	d: minor structural d: no	Describe: Describe:	Relevel the building, rest of damage is repaired
Along Assessed %NBS before e'quakes: 83% ### %NBS from IEP below If IEP not used, please detail Based on calculations Across Assessed %NBS before e'quakes: 100% ### %NBS from IEP below assessment methodology: Across Assessed %NBS after e'quakes: 100% #### %NBS from IEP below	Interim occupancy recommendation	s: full occupancy	Describe:	
Across Assessed %NBS before e/quakes: 100% #### %NBS from IEP below Assessed %NBS after e/quakes: 100%	Along Assessed %NBS before e'quake Assessed %NBS after e'quake	s: 83%	#### %NBS from IEP below If IEP not used, please detail assessment methodologu	Based on calculations
Assessed %NBS after e/quakes: 100%		00 /0	#### %NRS from IEP below	
	Assessed %NBS after e'quake	s: 100%		

Period of design of b	uilding (from above	e): 1965-1976				hn from abo	ve: m	
Seismic Zone, if designed bet	ween 1965 and 1993	2:			not requi not requi	red for this age of build red for this age of build	ing	
				Period (from above): (%NBS)nom from Fig 3.3:		along 0.4		across 0.4
И	ote:1 for specifically	y design public buildings, to th	e code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1. Note 2: for RC buildin ote 3: for buildings designed prior to	.33; 1965-1976, ngs designed bet o 1935 use 0.8,	Zone B = 1.2; all else 1 ween 1976-1984, use 1 except in Wellington (1.	.0 .2 0)	
				Final (%NBS)nom:		along 0%		across 0%
2.2 Near Fault S	caling Factor			Near Faul	It scaling factor,	from NZS1170.5, cl 3.1	.6:	
			Near Fault	caling factor (1/N(T,D), Factor A:		along #DIV/0!		across #DIV/0!
2.3 Hazard Scali	ng Factor			Hazard	factor Z for site f	from AS1170.5. Table 3	.3:	
					Hazaro	Z1992, from NZS4203:19 d scaling factor, Factor	92 B:	#DIV/0!
2.4 Return Perio	d Scaling Factor			Return Perio	Building Impo d Scaling factor	ortance level (from abov from Table 3.1, Factor	e): C:	2
2.5 Ductility Sca	ling Factor	Ductility scaling factor	Assessed du	ctility (less than max in Table 3.2) or =ku, if pre-1976, fromTable 3.3;		along	_	across
			,	Dualiju Caslina Castor Fester D i	r	0.00		0.00
				Ductility Scaling Factor, Factor D:		0.00		0.00
2.6 Structural P	erformance Scalin	g Factor:		Sp:				
			Structural Perf	ormance Scaling Factor Factor E:		#DIV/0!		#DIV/0!
2.7 Baseline %N	BS, (NBS%)♭ = (%♪	NBS)nom x A x B x C x D x E		%NBSb:		#DIV/0!		#DIV/0!
Global Critical Str	uctural Weaknesse	s: (refer to NZSEE IEP Table	3.4)					
3.1. Plan Irregula	arity, factor A:		1					
3.2. Vertical irre	gularity, Factor B:		1					
3.3. Short colum	ns. Factor C:			Table for selection of D1		Severe	Significant	Insignificant/none
3.4 Pounding p	otential	Pounding effect D1 from	n Table to right	Alignment of floors with	Separation	0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
5.4. Founding p	He	sight Difference effect D2, from	n Table to right	Alignment of floors not with	nin 20% of H	0.4	0.8	0.8
		There	efore, Factor D: 0	Table for Selection of D2		Severe	Significant	Insignificant/none
3.5. Site Charact	eristics				Separation	0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
				Height difference	e > 4 storeys	0.4	0.7	1
				Height difference 2	e < 2 storeys	0.7	0.9	1
				<u> </u>		Along		Across
3.6. Other factor	s, Factor F	For ≤ 3 storey	s, max value =2.5, otherw	vise max valule =1.5, no minimum				
			Rauc	naio tor enoice or rilactor, il fiot r	L		1	
	uctural Weaknesse List an	is: (refer to DEE Procedure ser	ction 6) Refer als	o section 6.3.1 of DEE for discussi	ion of F factor m	odification for other crit	ical structural weak	nesses
Detail Critical Str	ormance Achieven	nent ratio (PAR)				0.00		0.00
3.7. Overall Perf				DAD Des all'as 0(NDO)		#DIV/0!		#DIV/0!
3.7. Overall Perf 4.3 PAR x (%NE	S)b:			PAR x Baselline %NBS:				
Jetail Critical Str 3.7. Overall Perf 4.3 PAR x (%NE 4.4 Percentage I	S)b: lew Building Stand	dard (%NBS), (before)		PAR X Baselline %NBS:				#DIV/0!
Jetail Critical Sti 3.7. Overall Perf 4.3 PAR x (%NE 4.4 Percentage I Jse only:	S)b: lew Building Stand	dard (%NBS), (before)		PAR X Baseline %NBS:				#DIV/0!

Detailed Engineering E	valuation Summary Data		V1.14
Location	Building Name:	Block B - Aldwins Courts	Paviawar David Elliott
	Building Address:	Unit Block B (Units 4, 5 and 6)	Kois Street CPEng No: 202002 S5 Addwins Road Company Aurecon
	Legal Description:	FLATS 4, 5 & 6	Company project number: 227609
	Legal Description.	DF 40879 ON EOTS 1 3 DF 38888	Company project number. 237896 Company phone number: 03 371 0761
	GPS south:	43	32 25.34 Date of submission: 16/12/2015 39 55.07 Instruction Date: 13/08/2013
	Building Unique Identifier (CCC):	PRO 0811 BLDG 002	Revision: 3 Is there a full report with this summar/2 ves
Site			
	Site slope: Soil type:	flat mixed	Max retaining height (m): Soil Profile (if available):
F	Site Class (to NZS1170.5): Proximity to waterway (m. if <100m):	D	If Ground improvement on site, describe:
	Proximity to clifftop (m, if < 100m): Proximity to cliff base (m, if <100m):		Approx site elevation (m):
Building	No. of storeys above ground:	1	single storey = 1 Ground floor elevation (Absolute) (m):
	Ground floor split? Storeys below ground	no 0	Ground floor elevation above ground (m):
	Foundation type: Building height (m):	strip footings 2.60	if Foundation type is other, describe:
	Age of Building (years):	37	Date of design: 1965-1976
	0		Kan when (wen)?
	Strengthening present?	no	And what load level (%g)?
	Use (upper floors):	multi-unit residential	brei suengurening description.
	Importance level (to NZS1170.5):	IL2	
Gravity Structure	Granita Bard	load bearing walls	1
	Roof:	timber truss	truss depth, purin type and cladding timber purlins, 1.675m truss depth
	Beams:		
	Walls:		
Lateral load resisting struc	cture Lateral system along:	lightweight timber framed walls	Note: Define along and across in note typical wall length (m)
	Ductility assumed, µ: Period along:	2.00	detailed report! 0.00 estimate or calculation? estimated
maximur	Total deflection (ULS) (mm): m interstorey deflection (ULS) (mm):		estimate or calculation?
	Lateral system across:	lightweight timber framed walls	note typical wall length (m)
	Ductility assumed, µ: Period across:	2.00	0.00 estimate or calculation? estimated
maximur	Total deflection (ULS) (mm): m interstorey deflection (ULS) (mm):		estimate or calculation?
Separations:			
	north (mm): east (mm):		leave blank if not relevant
	south (mm): west (mm):		
Non-structural elements			
	Stairs: Wall cladding:	brick or tile	describe (note cavity if exists) Cavity between brick veneer and timber framing
	Glazing:	plastar fixed	
	Services(list):	plaster, inted	
Available documentatio	20		
	Architectural	partial	original designer name/date Enterprise Homes Ltd/1974
	Mechanical	none	original designer name/date
	Geotech report	none	original designer name/date
Damage			
Site: (refer DEE Table 4-2)	Site performance:	Moderate	Describe damage: Tenants have moved out of Units 4 & 5 due to
(· · · · · · · · · · · · · · · · · · ·	Settlement: Differential settlement:	25-100mm none observed	notes (if applicable): notes (if applicable):
	Liquefaction: Lateral Spread:	more than 10 m ³ /100m ² none apparent	notes (if applicable): Considerable liquefaction on-site. This has led notes (if applicable):
	Differential lateral spread: Ground cracks:	none apparent	notes (if applicable): notes (if applicable):
	Damage to area:	slight	notes (if applicable): Cracks in walls, cracks in glass panels.
Building:	Current Placard Status:	green]
Along	Damage ratio:	0%	Describe how damage ratio arrived at:
	Describe (summary):		Damage Patio = (% NBS(before) - % NBS(after))
Across	Damage ratio: Describe (summary):	0%	$\frac{M}{NBS(before)}$
Diaphragms	Damage?:	no	Describe:
CSWs:	Damage?:	no	Describe:
Pounding:	Damage?:	no	Describe:
Non-structural:	Damage?:	yes	Describe: Large amounts of liquefaction cover floors of u
Perommandations			
recommentations	aval of repair/etropathories	minor pop-etructural	Relevel the building. Majority of the
Le	Building Consent required: terim occupancy recommendations		Describe: Carriage is reapired by Council. Describe:
Alona	Assessed %NBS before elouatees	73%	#### %NBS from IEP below If IEP not used, please detail assessment Quantitative
	Assessed %NBS after e'quakes:	73%	methodology:
Across	Assessed %NBS before e'quakes: Assessed %NBS after e'quakes:	88%	#### %NBS from IEP below
		0076	

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Detailed Engineering Evaluation Summary Data			V1.14
Location	Block C. Alduine Courte	Deviewer	Devid Elliett
Duilding Name.	Unit	No: Street CPEng No:	202002
Building Address:	FLATS 7 & 8	55 Aldwins Road Company:	Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698 03 371 0761
GPS south:	Degrees 43	Min Sec 32 24.92 Date of submission:	16/12/2015
GPS east:	172	39 59.54 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 003	Is there a full report with this summary?	yes
Site			
Site slope: Soil type:	flat mixed	Max retaining height (m): Soil Profile (if available):	
Site Class (to NZS1170.5): Proximity to waterway (m. if <100m):	D	If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m): Proximity to cliff base (m if < 100m):		Annox site elevation (m):	
· · · · · · · · · · · · · · · · · · ·			
Building			
Ground floor split?	no	Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground Foundation type:	0 strip footings	if Foundation type is other, describe:	
Building height (m): Floor footprint area (approx):	2.60	height from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years):	37	Date of design:	1965-1976
Strengthening present?	no	If so, when (year)?	
	multi unit regidential	And what load level (%g)?	
Use (ground noor): Use (upper noor):	multi-unit residential		ļ
Importance level (to NZS1170.5):	IL2		
Gravity Structure			
Gravity System: Roof:	load bearing walls timber truss	truss depth, purlin type and cladding	timber purlins, 1.675m truss depth
Floors: Beams:	concrete flat slab	slab thickness (mm)	100mm slab with 665 mesh - moistop -
Columns:			
Televel lood resisting structure			
Lateral system along:	lightweight timber framed walls	Note: Define along and across in note typical wall length (m)	
Period along:	0.40	0.00 estimate or calculation?	estimated
Total deflection (ULS) (mm): maximum interstorey deflection (ULS) (mm):		estimate or calculation? estimate or calculation?	
Lateral system across:	lightweight timber framed walls	note tvoical wall length (m)	
Ductility assumed, µ:	2.00	0.00 estimate or calculation?	estimated
Total deflection (ULS) (mm):	0.40	estimate or calculation estimate or calculation?	
maximum interstorey delection (OLS) (mm).		estimate or calculation?	ļ
Separations: north (mm):		leave blank if not relevant	
east (mm): south (mm):			
west (mm):			
Non-structural elements Stairs:			
Wall cladding: Roof Cladding:	brick or tile Metal	describe (note cavity if exists) describe	Cavity between brick veneer and timber fram
Glazing: Ceilings	plaster, fixed		
Services(list):			
Available documentation Architectural	partial	original designer name/date	Enterprise Homes Ltd/1974
Structural Mechanical	partial none	original designer name/date original designer name/date	Enterprise Homes Ltd/1974
Electrical Geotech report	none	original designer name/date original designer name/date	
· · · · · · · · · · · · · · · · · · ·			· · ·
Damage Site: Site performance:		Describe damage:	
(refer DEE Table 4-2)	25-100mm	notes (if annlicable):	
Differential settlement:	none observed	notes (if applicable):	
Liqueraction: Lateral Spread:	none apparent	notes (if applicable): notes (if applicable):	
Differential lateral spread: Ground cracks:	none apparent	notes (if applicable): notes (if applicable):	
Damage to area:	slight	notes (if applicable):	Wall cracks in plaster, step cracks in masonr
Building: Current Placard Status:	green		
Along Damage ratio:	0%	Describe how damage ratio arrived at	
Describe (summary):	070		
Across Damage ratio:	0%	$Damage_Ratio = \frac{(\%NBS(before) - \%NBS(after))}{(\%NBS(before))}$	
Describe (summary):		% INBS (Defore)	
Diaphragms Damage?:	no	Describe:	
CSWs: Damage?:	no	Describe:	
Pounding: Damage?:	no	Describe:	
Non-structural: Damage?:	yes	Describe:	
Percommondations			
Level of repair/strengthening required:		Describe:	Damage is repaired by council.
Building Consent required: Interim occupancy recommendations:	no full occupancy	Describe: Describe:	
Along Assessed %NBS before e'quakes:	100%	#### %NBS from IEP below If IEP not used, please detail assessment	Quantitative
Assessed %NBS after e'quakes:	100%	methodology:	
Across Assessed %NBS before e'quakes:	80%	#### %NBS from IEP below	
Assessed %INDS aller e quakes:	80%		

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Detailed Engineering Evaluation Summary Data			V1.14
Location	Block D. Alduine Courte	Deviewer	David Filet
Duilding Name.	Unit	No: Street CPEng No:	202002
Building Address:	FLATS 9, 10 & 11	55 Aldwins Road Company:	Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698 03 371 0761
GPS south:	Degrees 43	Min Sec 32 25.05 Date of submission:	16/12/2015
GPS east:	172	40 0.85 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 004	Is there a full report with this summary?	yes
Site	L =		
Site slope: Soil type:	flat mixed	Max retaining height (m): Soil Profile (if available):	
Site Class (to NZS1170.5): Proximity to waterway (m, if <100m):	D	If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m): Proximity to cliff base (m, if <100m):		Approx site elevation (m):	
, , , ,	-		<u> </u>
Building	1	single storay = 1 Ground floor elevation (Absolute) (m):	
Ground floor split?	no	Ground floor elevation above ground (m):	
Foundation type:	strip footings	if Foundation type is other, describe:	
Floor footprint area (approx):	2.60	neight from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years):	37	Date of design:	1965-1976
Strengthening present?	no	If so, when (year)?	
Use (around floor):	multi-unit residential	And what load level (%g)? Brief strenathening description:	
Use (upper floors): Use notes (if required):	multi-unit residential		
Importance level (to NZS1170.5):	IL2		
Gravity Structure	lead bearing wells		
Roof:	timber truss	truss depth, purlin type and cladding	timber purlins, 1.675m truss depth
Beams:		siab (nickness (nim)	roomini siab with 665 mesh - moistop -
Columns: Walls:			
Lateral load resisting structure			
Lateral system along: Ductility assumed, μ:	lightweight timber framed walls 2.00	Note: Define along and across in note typical wall length (m) detailed report!	
Period along: Total deflection (ULS) (mm):	0.40	0.00 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Lateral system across:	lightweight timber framed walls	note typical wall length (m)	
Period across:	0.40	0.00 estimate or calculation?	estimated
I otal deflection (ULS) (mm): maximum interstorey deflection (ULS) (mm):		estimate or calculation? estimate or calculation?	
Separations:			
east (mm):		ieave diank if not relevant	
south (mm): west (mm):			
Non-structural elements			
Wall cladding:	brick or tile	describe (note cavity if exists)	Cavity between brick veneer and timber frami
Glazing:		describe	
Ceilings: Services(list):	plaster, fixed		
Available documentation Architectural	partial	original designer name/date	Enterprise Homes Ltd/1974
Structural Mechanical	partial none	original designer name/date original designer name/date	Enterprise Homes Ltd/1974
Electrical Geotech report	none	original designer name/date original designer name/date	
Damage Site: Site performance:		Describe damage:	
(refer DEE Table 4-2) Settlement:	25-100mm	notes (if applicable):	
Differential settlement: Liquefaction:	none observed more than 10 m ³ /100m ²	notes (if applicable): notes (if applicable):	
Lateral Spread: Differential lateral spread:	none apparent	notes (if applicable): notes (if applicable):	
Ground cracks:	none apparent	notes (if applicable):	Cracks in walls and base slab, step cracks in
Building	Longint		
Current Placard Status:	green		
Along Damage ratio:	0%	Describe how damage ratio arrived at:	
Describe (summary).		$Damaga_{eq} = Ratio_{eq} = (\% NBS(before) - \% NBS(after))$	
Damage ratio: Describe (summary):	0%	%NBS(before)	
Diaphragms Damage?:	no	Describe:	
CSWs: Damage?:	no	Describe:	
Pounding: Damage?:	no	Describe:	
Non-structural: Damage?	ves	Describe:	
Canage :			· ·
Recommendations		Describer	Damage is repaired by council
Building Consent required:	no full occupancy	Describe:	Carriage is repaired by council.
Along Accessed V/NRS before almoster	000	#### %NBS from IEP below If IEP not used place detail account	Quantitative
Assessed %NBS after e'quakes:	83%	methodology:	
Across Assessed %NBS before e'quakes:	100%	#### %NBS from IEP below	
Assessed %NBS after e'quakes:	100%		

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Detailed Engineering Evaluation Summary Data			V1.14
Location			
Building Name:	Block E - Aldwins Courts Unit	No: Street	CPEng No: 202002
Building Address:	Block E (Units 12, 12a & 14) FLATS 12, 12a & 14	55 Aldwins Road	Company: Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company Company	roject number: 237698
	Degrees	Min Sec	4E/42/2016
GPS south. GPS east:	43 172	39 59.99	spection Date: 13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 005	Is there a full report with	Revision: 3 this summary? yes
Sito			
Site slope:	flat	Max retai	ing height (m):
Soil type: Site Class (to NZS1170.5):	D	Soil Pro	le (if available):
Proximity to waterway (m, if <100m): Proximity to cliffton (m, if <100m):		If Ground improvement of	site, describe:
Proximity to cliff base (m,if <100m):		Approx sit	e elevation (m):
Building No. of storevs above ground:	1	single storey = 1 Ground floor elevation	(Absolute) (m):
Ground floor split? Storays below ground	no	Ground floor elevation abo	ve ground (m):
Foundation type:	strip footings	if Foundation type is	ther, describe:
Building height (m): Floor footprint area (approx):	2.60	height from ground to level of uppermost seismic mass (fo	r IEP only) (m):
Age of Building (years):	37		Date of design: 1965-1976
Strengthening procent?	20	lf e	when (vegt)?
Strengthening present?	no	And what I	ad level (%g)?
Use (ground floor): Use (upper floors):	multi-unit residential multi-unit residential	Brief strengthen	ng description:
Use notes (if required):	11.2		
Gravity Structure Gravity System:	load bearing walls		
Roof: Floors:	timber truss concrete flat slab	truss depth, purlin ty slab	e and cladding timber purlins, 1.675m truss depth hickness (mm) 100mm slab with 665 mesh - moistop -
Beams:			
Walls:			
Lateral load resisting structure			
Lateral system along:	lightweight timber framed walls	Note: Define along and across in note typica	wall length (m)
Period along:	0.40	0.00 estimate	or calculation? estimated
Total deflection (ULS) (mm): maximum interstorey deflection (ULS) (mm):		estimate	or calculation?
Lateral evetem across	lightweight timber framed walk	note tunica	wall length (m)
Ductility assumed, µ:	2.00		
Total deflection (ULS) (mm):	0.40	0.00 estimate estimate	or calculation? estimated or calculation?
maximum interstorey deflection (ULS) (mm):		estimate	or calculation?
Separations:		lanus blank X net relationt	
east (mm):			
south (mm): west (mm):			
Non-structural elements			
Stairs:	h dah an tik	decord of feed	
Roof Cladding:	Metal	describe (note	describe
Glazing: Ceilings:	plaster, fixed		
Services(list):			
-			
Available documentation Architectural	partial	original desi	ner name/date Enterprise Homes Ltd/1974
Structural	partial	original desi	ner name/date Enterprise Homes Ltd/1974
Electrical	none	original desi	ner name/date
Geotech report	none	original desi	ner name/date
Damage			
Site: Site performance:		De	scribe damage:
Settlement:	25-100mm	note	(if applicable):
Differential settlement: Liquefaction:	none observed more than 10 m ³ /100m ²	note	s (if applicable):
Lateral Spread: Differential lateral spread	none apparent	note	(if applicable):
Ground cracks:	none apparent	note	(if applicable):
Damage to area:	signt	note	(if applicable): [Cracks in walls, step cracks in masonry.
Building: Current Placard Status:	green		
Along	00/	Describe how demos	ratio arrived at
Damage ratio: Describe (summary):	0%	Describe now damage	
Across Damage ratio:	0%	$Damage_Ratio = (\% NBS(before) - \% NBS(after a started by the s$	er))
Describe (summary):		% NBS (before)	
Diaphragms Damage?:	no		Describe:
CSWs: Damage?:	no		Describe:
Pounding: Damage?	no		Describe:
Non-structural: Domono?	ves		Describe: Roof tiles unsecured a few hous falles aff
Damage?	0.00		Countres directured, a rew have idited the
Recommendations			
Level of repair/strengthening required: Building Consent required:	none		Describe: Damage is repaired by the council.
Interim occupancy recommendations:	full occupancy		Describe:
Along Assessed %NBS before e'quakes:	78%	#### %NBS from IEP below If IEP not used, please de	ail assessment Quantitative
Assessed %NBS after e'quakes:	78%		methodology:
Across Assessed %NBS before e'quakes:	100%	#### %NBS from IEP below	

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Detailed Engineering Evaluation Summary Data			V1.14
Location	Disak E. Alduine Courte	Deviewee	David Ellipt
Dullding Name.	Block F - Aldwins Courts Unit	No: Street CPEng No:	202002
Building Address:	Block F (Units 15, 16 & 17) FLATS 15, 16 & 17	55 Aldwins Road Company:	Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698
GPS south:	Degrees 43	Min Sec 32 23.91 Date of submission:	15/10/2015
GPS east:	172	40 0.32 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 006	Is there a full report with this summary?	yes
Site			
Site slope: Soil type:	flat mixed	Max retaining height (m): Soil Profile (if available):	
Site Class (to NZS1170.5): Proximity to waterway (m, if <100m):	D	If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m): Proximity to cliff base (m if <100m):		Approx site elevation (m):	
· · · · · · · · · · · · · · · · · · ·			
Building			
No. of storeys above ground: Ground floor split?	no 1	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground Foundation type:	0 strip footings	if Foundation type is other, describe:	
Building height (m): Floor footprint area (approx):	2.60	height from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years):	37	Date of design:	1965-1976
Strangthaning proceed?	[no	If so, when (year)?	
		And what load level (%g)?	
Use (ground floor): Use (upper floors):	multi-unit residential	Brief strengtnening description:	I
Use notes (if required): Importance level (to NZS1170.5):	IL2		
Gravity Structure			
Gravity System:	load bearing walls timber truss	truss depth, purlin type and cladding	timber purlins, 1.675m truss depth
Floors	concrete flat slab	slab thickness (mm)	100mm slab with 665 mesh - moistop -
Columns			
vvaiis:			
Lateral load resisting structure Lateral system along:	lightweight timber framed walls	Note: Define along and across in note typical wall length (m)	
Ductility assumed, μ: Period along	2.00	detailed report! 0.00 estimate or calculation?	estimated
Total deflection (ULS) (mm)		estimate or calculation?	
maximum interstorey deliection (DE3) (mm).			
Lateral system across: Ductility assumed, µ:	lightweight timber framed walls 2.00	note typical wall length (m)	
Period across: Total deflection (ULS) (mm):	0.40	0.00 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Separations:		leave blank if not relevant	
east (mm):			
west (mm):			
Non-structural elements			
Wall cladding:	brick or tile	describe (note cavity if exists)	Cavity between brick veneer and timber framir
Roof Cladding: Glazing:	Metal	describe	
Ceilings: Services(list):	plaster, fixed		
Available documentation	Datial		Enterprise Homes Ltd/1074
Structural	partial	original designer name/date	Enterprise Homes Ltd/1974
Electrica	none	original designer name/date original designer name/date	
Geotech report	none	original designer name/date	
Damage			
Site: Site performance: (refer DEE Table 4-2)		Describe damage:	
Settlement: Differential settlement	0-25mm	notes (if applicable):	
Liquefaction:	more than 10 m³/100m²	notes (if applicable):	
Differential lateral spread	none apparent	notes (il applicable). notes (if applicable):	
Ground cracks: Damage to area:	slight	notes (if applicable): notes (if applicable):	Cracks in walls, step cracks in masonry.
Building:			
Current Placard Status	green		
Along Damage ratio:	0%	Describe how damage ratio arrived at:	
A erece	00/	Damage $Ratio = \frac{(\%NBS(before) - \%NBS(after))}{(\%NBS(before) - \%NBS(after))}$	
Describe (summary):	0%	%NBS(before)	
Diaphragms Damage?:	no	Describe:	
CSWs: Damage?:	no	Describe:	
Pounding: Damage?:	no	Describe:	
Non-structural: Damage?		Describe:	
Damage?		Describe.	
Recommendations			· · ·
Level of repair/strengthening required: Building Consent required:	none	Describe: Describe:	Damage is repaired by council
Interim occupancy recommendations:	full occupancy	Describe:	
Along Assessed %NBS before e'quakes: Assessed %NBS after e'quakes:	83%	#### %NBS from IEP below If IEP not used, please detail assessment methodology	Quantitative
ribboood /inter e quakes.	. 03%	methodology.	
Across Assessed %NRS before elauphon	100%	#### %NBS from IEP below	
Across Assessed %NBS before e'quakes: Assessed %NBS after e'quakes:	100%	#### %NBS from IEP below	

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Location			*****
Puilding Nome	Plack G. Aldwing Courts	Paviawar	David Elliott
Building Name	Unit	No: Street CPEng No:	202002
Building Address	FLATS 18, 19 & 20	55 Aldwins Road Company:	Aurecon
Legal Description	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698 03 371 0761
GPS south	Degrees 43	Min Sec 32 24.51 Date of submission:	16/12/2015
GPS east	172	40 1.46 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC)	PRO 0811 BLDG 007	Is there a full report with this summary?	yes
Site			
Site slope Soil type	flat mixed	Max retaining height (m): Soil Profile (if available):	
Site Class (to NZS1170.5) Proximity to waterway (m, if <100m)	D	If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m) Proximity to cliff base (m if <100m)		Approx site elevation (m):	
· · · · · · · · · · · · · · · · · · ·			
Building		single states. 4 Crowed (loss slaveling (Abashda) (m))	
Ground floor split	no	Ground floor elevation (Absolute) (in). Ground floor elevation above ground (m):	
Storeys below ground Foundation type	strip footings	if Foundation type is other, describe:	
Building height (m) Floor footprint area (approx)	2.60	height from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years)	37	Date of design:	1965-1976
Strengthening present	no	If so, when (year)?	
Lice (ground fleer)	multi unit regidential	And what load level (%g)?	
Use (upper floors)	multi-unit residential	biel strengthening description.	L1
Importance level (to NZS1170.5)	IL2		
Gravity Structure			
Gravity System: Roof	load bearing walls timber truss	truss depth, purlin type and cladding	timber purlins, 1.675m truss depth
Floors Beams	concrete flat slab	slab thickness (mm)	100mm slab with 665 mesh - moistop -
Columns			
vv aiis.			
Lateral load resisting structure Lateral system along	lightweight timber framed walls	Note: Define along and across in note typical wall length (m)	
Ductility assumed, μ Period along	2.00	detailed report! 0.00 estimate or calculation?	estimated
Total deflection (ULS) (mm) maximum interstorev deflection (ULS) (mm)		estimate or calculation?	
	Eastweight timber fremed wells		
Ductility assumed, µ		note typicar wainlength (m)	
Period across Total deflection (ULS) (mm)	0.40	0.00 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm)		estimate or calculation?	
Separations: north (mm)		leave blank if not relevant	
east (mm)			
west (mm)			
Non-structural elements			
Non-structural elements Stairs Wall cladding	brick or tile	describe (note cavity if exists)	Cavity between brick veneer and timber framin
<u>Non-structural elements</u> Wall cladding Roof Cladding Glazing	brick or tile Metal	describe (note cavity if exists) describe	Cavity between brick veneer and timber framin
Non-structural elements Wall cladding Roof Cladding Giazing Ceilings Services(181)	brick or tile Metal plaster, fixed	describe (note cavity if exists) describe	Cavity between brick veneer and timber framin
Non-structural elements Wall cladding Roof Cladding Giazing Services(tist)	brick or tile Metal plaster, fixed	describe (note cavity il exists) describe	Cavity between brick veneer and timber frami
Non-structural elements Wall cladding Roof Cladding Giazing Ceilings Services(tst) Available documentation	brick or tile Metal plaster, fixed	describe (note cavity if exists) describe	Cavity between brick veneer and timber frami
Non-structural elements Wall clacking Roof Cladding Ceilings Services(lst) Available documentation Architectura Structura	brick or tile Metal plaster, fixed partial partial partial	describe (note cavity if exists) describe original designer name/date original designer name/date	Cavity between brick veneer and timber frami
Non-structural elements Wall cladding Cold Cladding Ceilings Services(tst) Available documentation Architectura Mechanica Electrica	brick or tile Metal Plaster, fixed partial partial none none	describe (note cavity if exists) describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Cavity between brick veneer and timber frami
Non-structural elements Wall cladding Roof Cladding Ceilings Services(ist) Available documentation Architectura Structura Mechanica Electrica Geotech report	brick or tile Metal Plaster, fixed partial partial none none none	describe (note cavity if exists) describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Cavity between brick veneer and timber framin
Non-structural elements Wall cladding Cold Cladding Ceilings Services(ist) Available documentation Architecture Structure Mechanice Geotech report Damage	brick or tile Metal plaster, fixed partial partial none none	describe (note cavity if exists) describe original designer name/date original designer name/date original designer name/date original designer name/date	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974
Non-structural elements Wall cladding Roof Cladding Ceilings Services(ist) Available documentation Architectura Structura Mechanice Geotech repor Damage Site: (refer DEE Table 4-2) Site performance	brick or tile Metal plaster, fixed partial partial none none	describe (note cavity if exists) describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(Ist) Available documentation Architectura Mechanica Electrica Geotech repor Damage Site: (refer DEE Table 4-2) Stet performance Differential settlement Differential sett	brick or tile Metal plaster, fixed partial partial none none 25-100mm pope.observed	describe (note cavity if exists) describe original designer name/date original designer name/date	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(Ist) Available documentation Architecture Mechanice Electrice Geotech repor Damage Site: (refer DEE Table 4-2) Settlement Differential settlement Liquefaction Liq	brick or tile Metal plaster, fixed partial partial partial none none 25-100mm none observed more than 10 m9/100m ²	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(ist) Available documentation Architecture Structure Mechanice Electrice Geotech repor Damage Site: Site performance (refer DEE Table 4-2) Settlement Differential settlement Lateral Spread Differential setal Spread	brick or tile Metal plaster, fixed partial partial partial none none 25-100mm none observed more than 10 m²/100m² none apparent none apparent	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Calaring Calings Services(Ist) Available documentation Architecture Structure Mechanice Electrice Geotech repor Damage Site: Site performance (refer DEE Table 4-2) Settlement Liguefactor Lateral Spread Differential settlement Lateral Spread Differential settlement Lateral Spread Ground cracks Damage to areas	brick or tile Metal plaster, fixed partial partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent slight	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Calaring Calings Services(Ist) Available documentation Architecture Structure Mechanice Electrice Geotech repor Damage Site: (refer DEE Table 4-2) Site performance (refer DEE Table 4-2) Site additional additionadditional additionadditionad additiona	brick or tile Metal plaster, fixed partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent sight	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(ist) Available documentation Architecture Structure Mechanice Electrice Geotech report Damage Site: (refer DEE Table 4-2) Site performance Site Site (refer DEE Table 4-2) Differential settlement Liquefaction Lateral Spread Differential lateral spread Ground cracks Damage to area Building: Current Placard Status	brick or tile Metal plaster, fixed partial partial partial partial pone none none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent sight green	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Calaring Calings Services(Ist) Available documentation Architecture Structure Mechanice Electrice Geotech repor Damage Site: Site performance (refer DEE Table 4-2) Site performance Differential settlement Lateral Spread Differential lateral spread Ground cracks Damage to area Building: Current Placard Status Along Descript (summan)	brick or tile Metal plaster, fixed partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent sight green 0%	describe (note cavity if exists) describe original designer name/date original designe	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(ist) Available documentation Architecture Structure Mechanice Electrice Geotech report Damage Site: (refer DEE Table 4-2) Site performance Stite: Settlement Differential settlement Lateral Spread Differential tetral spread Original tetral spread Differential tetral spread Ground cracks Damage to area Building: Current Placard Status Along Describe (summary) Assess Damage ratio	brick or tile Metal plaster, fixed partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent sight green 0%	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Cellings Services(Ist) Available documentation Architecture Structure Mechanice Celetchice Geotech report Damage Site: (refer DEE Table 4-2) Site performance Stite: Settlement Differential settlement Lateral Spread Differential tetral spread Spread Differential tetral spread Differential tetr	brick or tile Metal plaster, fixed partial partial partial partial pone none none 25-100mm none observed more than 10 mº/100m² none apparent none apparent sight green 0% 0%	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Cellings Services(Ist) Available documentation Architecture Structure Mechanice Celetchice Geotech report Damage Site: (refer DEE Table 4-2) Site performance Settlement Differential settlement Lateral Spread Differential tetral spread Of Inferential tetral spread Differential tetral spread Di	brick or tile Metal plaster, fixed partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent none apparent sight green 0% 0% no	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(list) Available documentation Architecture Structure Mechanics Electrics Geotech report Damage Site: (refer DEE Table 4-2) Site performance Settlement Lateral Spread Differential settlement Lateral Spread Differential lateral spread Differential lateral spread Differential settlement Lateral Spread Differential settlement Lateral Spread Differential settlement Lateral Spread Differential lateral spread Differential lateral spread Differential settlement Lateral Spread Differential settlement Lat	brick or tile Metal plaster, fixed partial partial partial partial partial pone none none 25-100mm none observed more than 10 m³/100m² none apparent none apparent sight green 0% 0% 0% no no	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974 Cracks in roof & walls, cracks in base slab, str
Non-structural elements Stairs Wall clading Roof Clading Cealings Services(lst) Available documentation Architecture Structure Geotech report Damage Site: (refer DEE Table 4-2) Site performance Differential settlement Laterial Spread Differential laterial spread Differential laterial spread Differential laterial spread Damage to area Building: Current Placard Status Damage ratio Describe (summary) Along Damage ratio Describe (summary) Along Damage ratio Describe (summary) Diaphragms Damage? Civis: Damage?	brick or tile Metal plaster, fixed partial partial partial pone none none 25-100mm none observed more than 10 mº/100m² none apparent none apparent sight green 0% 0% no no no	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall clading Roof Clading Ceilings Services(Ist) Available documentation Architecture Structure Structure Site: Damage Site: Site: Settement (refer DEE Table 4-2) Settement Differential settement Lateral Spread Differential settement Stateral Spread Differential settement Spread Differential settement Lateral Spread Differential settement Settement Lateral Spread Differential settement Spread Differential settement Lateral Spread Differential settement Lateral Spre	brick or tile Metal Metal plaster, fixed partial part prone apparent prone apparent prone apparent prone apparent prone apparent part part part part part part part par	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin
Non-structural elements Stairs Wall clading Roof Clading Ceilings Services(Ist) Clading Ceilings Services(Ist) Available documentation Architecture Structure Structure Geotech report Damage Site: (refer DEE Table 4-2) Site performance Differential settlement Lateral Spread Differential settlement Cateral Spread Differential settlement Lateral Spread Differential settlement Current Placead Status Damage to area Building: Current Placead Status Damage ratio Describe (summary) Along Damage ratio Describe (summary) Diaphragms Damage? CSWs: Damage? Swis: Damage? Non-structural: Damage?	brick or tile Metal Metal plaster, fixed partial part prone apparent prone app	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber frami
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(lst) Available documentation Architecture Structure Structure Geotech report Damage Site: Step Table 4-2) Step Table 4-2) Settlement Liquefaction Lateral Spread Offerential lateral spread Ground cracks Damage to area Building: Current Placard Status Describe (summary) Along Damage ratio Describe (summary) Along Damage ratio Describe (summary) Diaphragms Damage? CSWs: Damage? Non-structural: Damage? Recommendations Carrent Placard Status	brick or tile Metal Metal plaster, fixed partial partial partial pone prote p	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber frami
Non-structural elements Stairs Wall clading Roof Clading Ceilings Services(lst) Available documentation Architecture Structure Structure Geotech report Site: Damage Site: Site: Steprizes Steprizes Steprizes Site: Coursent Placeard Status Damage Site: Steprizes Atong Damage ratio Describe (summary) Diaphragms	brick or tile Metal Metal plaster, fixed partial partial partial porte prote	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber frami
Non-structural elements Stairs Wall clading Roof Clading Ceilings Services(Ist) Glazing Ceilings Services(Ist) Available documentation Architecture Structure Structure Geotech report Damage Site: (refer DEE Table 4-2) Site performance Settienent Liquefacton Lateral Spread Offerential Isterial spread Ground cracks Damage to area Building: Current Placard Status Describe (summary) Along Damage ratio Describe (summary) Along Damage ratio Describe (summary) Diaphragms Damage? CSW s: Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required Building Consent required Building Consent required	brick or tile Metal Metal plaster, fixed partial partial partial prone finone	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974 Cracks in roof & walls, cracks in base slab, sto Cracks in roof & walls, cracks in base slab, sto Damage is repaired by council minor repairs
Non-structural elements Stairs Wall cladding Roof Cladding Ceilings Services(Ist) Available documentation Architecture Structure Betrice Geotech report Site: Damage Site: Site: Differential settlement Liquefacton Lateral Spread Offerential lateral spread Ground cracks Damage to area Building: Current Placard Status Describe (summary) Along Damage ratio Describe (summary) Diaphragms Damage ratio Describe (summary) Diaphragms Damage? CSW s: Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required Building Consent required Subding Consent required Subding Consent required Subding Consent required Subding Consent required Subding Consent required	brick or tile Metal Metal Plaster, fixed partial partial partial partial prone none	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974 Cracks in roof & walls, cracks in base slab, stw Cracks in roof & walls, cracks in ba
Non-structural elements Stairs Wall clading Roof Clading Caling Services(Ist) Available documentation Architecture Structure Structure Structure Structure Step (refer DEE Table 4-2) Damage Site: (refer DEE Table 4-2) Steperformance Utferential settlement Lateral Spread Offerential lateral spread Ground cracks Damage to area Building: Current Placard Status Describe (summary) Along Damage ratio Describe (summary) Across Damage ratio Describe (summary) Diaphragms Damage? Recommendations Level of repair/strengthening required Building Consent required Building Consent required Status Level of repair/strengthening required Status Along Assessed %MBS before d'quakes Assessed %MBS hefore advakes	brick or tile Metal plaster, fixed partial partial partial none none 25-100mm none none 25-100mm none none 25-100mm none observed more than 10 mV100m² none apparent none apparent sight I green 0% no	describe (note cavity if exists) describe original designer name/date original designer name/date o	Cavity between brick veneer and timber framin Enterprise Homes Ltd/1974 Enterprise Homes Ltd/1974 Cracks in roof & walls, cracks in base slab, sto Cracks in roof & walls, cracks in base slab, sto Damage is repaired by council minor repairs Quantitative

	Use of this meth	hod is not mandatory - more detailed analysis m	ay give a different answer, which v	vould take precedence. D	o not fill in fields if not us	ing IEP.
F	Period of design of building (from above): 1	965-1976		hn f	rom above: m	
Seismic Zo	one, if designed between 1965 and 1992:			not required for this age	e of building	
				not required for this age		201000
			Period (from above): (%NBS)nom from Fig 3.3;	0.4		0.4
	Note:1 for specifically de	esign public buildings, to the code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33	; 1965-1976, Zone B = 1.2;	all else 1.0	
		N	Note 2: for RC buildings lote 3: for buildings designed prior to 1	designed between 1976-198 935 use 0.8, except in Wellin	34, use 1.2 ngton (1.0)	
				along		across
				0%		0%
	2.2 Near Fault Scaling Factor		Near Fault s	caling factor, from NZS1170 along	.5, cl 3.1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard fac	tor Z for site from AS1170.5 Z1992, from NZS	, Table 3.3: 4203:1992	
				Hazard scaling factor	, Factor B:	#DIV/0!
	2.4 Return Period Scaling Factor			Building Importance level (fr	om above):	2
			Return Period S	Scaling factor from Table 3.1	, Factor C:	
	2.5 Ductility Scaling Factor	Assessed d	uctility (less than max in Table 3.2)	along		across
		Backing county later Them for e entrande,	Ductiity Scaling Factor. Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Fa	actor:	Sp:			
		Structural Perf	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2 7 Receive %NRS (NRS%) - (%NRS		%NBS	#DIV/01		#DIV/01
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)	,		I	
	3.1. Plan Irregularity, factor A:	1				
	3.2. Vertical irregularity, Factor B:	1				
	3.3. Short columns, Factor C:	1	Table for selection of D1	eparation Ocsept 00	Significant	Insignificant/none
	3.4. Pounding potential	Pounding effect D1, from Table to right	Alignment of floors within	20% of H 0.7	0.8	1
	. ioigi	Therefore, Factor D: 0	Alignment of floors not within	20% of H 0.4	U.7	U.8
	3.5. Site Characteristics	1	S	eparation 0 <sep<.005< td=""><td>6H .005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005<>	6H .005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	L		Height difference > Height difference 2 to	4 storeys 0.4 4 storeys 0.7	0.7	1
			Height difference <	2 storeys 1	1	1
	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		Across
		Ratio	onale for choice of F factor, if not 1			
	Detail Critical Structural Weaknesses: (refer to DEE Procedure section 6)	section 6.3.1 of DEE for discussion	of E factor modification for o	her critical structural weak	000000
	Detail Critical Structural Weaknesses: () List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	0.00
	Detail Critical Structural Weaknesses: (List any: 3.7. Overall Performance Achievemen	refer to DEE Procedure section 6) Refer also	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00	her critical structural weakr	nesses 0.00
	Detail Critical Structural Weaknesses: ((List any:	refer to DEE Procedure section 6) Refer also t ratio (PAR)	o section 6.3.1 of DEE for discussion	of F factor modification for or 0.00 #DIV/0!	her critical structural weakr	esses 0.00 #DIV/01

Detailed Engineering Evaluation Summary Data			V1.14
Location Building Name:	Carport J - Aldwins Courts	Reviewer:	David Elliott
Building Address:	Unit Carport J	No: Street CPEng No: 55 Aldwins Road Company:	202002 Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698
GPS south:	Degrees 43	Min Sec 32 25.55 Date of submission:	16/12/2015
GPS east:	172	40 0.29 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 008	Is there a full report with this summary?	yes
Site Site slope:	flat	Max retaining height (m):	
Soil type: Site Class (to NZS1170.5):	mixed D	Soil Profile (if available):	
Proximity to waterway (m, if <100m): Proximity to clifftop (m, if <100m):		If Ground improvement on site, describe:	
Proximity to cliff base (m,if <100m):		Approx site elevation (m):	
Building			
No. of storeys above ground: Ground floor split?	1 no	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground Foundation type:	0 strip footings	if Foundation type is other, describe:	
Building height (m): Floor footprint area (approx):	2.00	height from ground to level of uppermost seismic mass (for IEP only) (m):	4065 4076
Age of Building (years).	37	Date of design.	1965-1976
Strengthening present?	no	If so, when (year)?	
Use (ground floor):	other (specify)	Brief strengthening description:	
Use notes (if required):	Carport (4 No. car spaces)		
Gravity Structure			
Gravity Structure Gravity System: Roof	frame system timber framed	rafter type, purlin type and cladding	
Floors: Beams:	concrete flat slab	slab thickness (mm)	100
Columns: Walls:	other (note) partially filled concrete masonry	typical dimensions (mm x mm) thickness (mm)	50 mm OD pipe posts 200
Lateral load resisting structure	(Farmer)		
Lateral system along: Ductility assumed, µ:	partially filled CMU 1.25	Note: Define along and across in note total length of wall at ground (m): detailed report!	12
Period along: Total deflection (ULS) (mm):	0.40	#### enter height above at H31 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Lateral system across:	partially filled CMU	note total length of wall at ground (m):	Out-of-plane (12 m length, 200 mm thick)
Ductility assumed, µ: Period across:	1.25	#### enter height above at H31 estimate or calculation?	estimated
Total deflection (ULS) (mm): maximum interstorey deflection (ULS) (mm):		estimate or calculation? estimate or calculation?	
Separations:	r		
Separations: north (mm): east (mm):		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm):		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Statis: Wall cladding: Parc Cladding: Parc Cladding:		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Ceitions:	Metal	leave blank if not relevant describe	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Val cladding: Roof Cladding: Glazing: Celings: Services(ist):	Metal	leave blank if not relevant describe	
Separations: north (mm): east (mm): south (mm): west (mm): Won-structural elements Wal cladding: Roof Cladding: Glazing: Cellings: Services(tst): Available documentation	Metalplaster, fixed	leave blank if not relevant describe	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Glazing: Geiings: Services(lst): Available documentation Architectural Structural	Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date	Foterorise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Wal cladding: Roof Cladding: Ceilings: Services(ist): Available documentation Architectural Structural Electrical Electrical	none partial none none none none none none none non	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Wal cladding: Roof Cladding: Ceilings: Services(ist): Available documentation Architectural Structural Electrical Geotech report	none none none none none none none none	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Ceilings: Services(ist): Available documentation Architectural Structural Geotech report Damage	none partial none none none none none	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements: Stairs: Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: (refer DEE Table 4-2) Site performance:	Metal plaster, fixed partial none none none none	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Claign: Services(lat): Available documentation Architectural Structural Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Differential settlement: Differential settlement:	Metal plaster, fixed none partial none	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in me
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Differential settlement: Liquetaction: Lateral Spread:	Metal plaster, fixed none none observed more than 10 m²/100m² none apparent	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (mm): east (mm): south (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Claidding: Roof Cladding: Cleings: Services(ist): Structural Available documentation Architectural Structural Mechanical Electrical Glearing: Site: Site performance: (refer DEE Table 4-2) Settlement: Liquefaction: Liquefaction: Liquefaction: <td>Metal plaster, fixed none partial none none observed none apparent none apparent none apparent none apparent none apparent</td> <td>leave blank if not relevant describe original designer name/date original designer designer</td> <td>Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m</td>	Metal plaster, fixed none partial none none observed none apparent none apparent none apparent none apparent none apparent	leave blank if not relevant describe original designer name/date original designer	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (mm): east (mm): south (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Ceings: Stairs: Services(ist): Stairs: Available documentation Architectural Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefactor: Liquefactor: Settlement: Differential settlement: Clarental spread: Differential settlement: Differential settlement: Differential settlement: Liquefactor: Stateral Spread: Differential settlement: Differential settlement: Liquefactor: Lighteration: Settlement: Differential settlement: Liquefactor: Stateral Spread: Differential settlement: Differential settlement: Liquefactor: Stateral Spread: Differential settlement: Differential stateral spread: Differential stateral spread: Differential stateral spread: Differential spread: D	Metal plaster, fixed none none apparent none apparent none apparent slight	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in mi
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Glazing: Cleings: Services[ist]: Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Liquefaction: Liquefaction: Liquefaction: Liquefaction: Liquefaction: Stellement: Differential lateral spread: Offerential lateral spread: Ground cracks: Damage to area: Building: Current Placard Status:	Metal plaster, fixed none partial none none apparent none apparent none apparent none apparent sight green	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Roof Cladding: Cellings: Services(lst): Available documentation Architectural Architectural Structural Mechanical Electrical Getech report Damage Site performance: Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settella spread: Differential settella spread: Differential stateral spread: Differential stateral spread: Building: Current Placard Status: Along Damage ratio:	Metal plaster, fixed none partial none none none observed more apparent none apparent none apparent sight green 0%	leave blank if not relevant describe	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Roof Cladding: Celling: Available documentation Architectural Mechanical Electrical Geotech report Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Ligurdation: Lateral Spread: Differential settlement: Ligurdation: Lateral Spread: Differential settlement: Ligurdation: Lateral Spread: Differential settlement: Ligurdation: Lateral Spread: Differential settleral spread: Differential settlement: Ligurdation: Lateral Spread: Differential settleral spread: Differential settleral spread:	Metal plaster, fixed none sight green 0%	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Root Cladding: Celings: Services(ts): Available documentation Architectural Structural Mechanical Geotech report Damage Site performance: (refer DEE Table 4-2) Site: Site performance: Lateral Spread: Differential settlement: Lugualatorial Differential settlement: Lugualatorial Differential settlement: Lateral Spread: Differential settlement: Lateral Spread: Differential settlement: Lugualatorial Differential settlement: Lugualatorial Dif	Metal plaster, fixed none none none none none none none none none apparent none apparent none apparent slight green 0%	leave blank if not relevant describe original designer name/date original designer name/date name/date original designer name/date original designer name/d	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Roof Cladding: Cellings: Available documentation Architectural Structural Mechanical Electrical Getechreiter Getorebreiter Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Current Placard Status: Along Damage ratio: Building: Current Placard Status: Along Damage ratio: Describe (summary): Damage ratio: Describe (summary): Diescribe (summary): Diaphragms Damage?	Metal plaster, fixed none none none none 0-25mm none observed more than 10 m%100m² none apparent none apparent none apparent slight green 0% no	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Root Cladding: Root Cladding: Celings: Available documentation Architectural Site: Site performance: (ref DEE Table 4-2) Site performance: Site: Site performance: Differential settlement: Liquefactors: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Building: Current Placard Status: Along Damage to area: Building: Current Placard Status: Along Damage ratio: Describe (summary): Describe (summary): Across Damage ratio: Describe (summary): Describe (summary): Diaphragms Damage? Citys: Damage?	Metal plaster, fixed none partial none none none 0-25mm none e 0 0 0 0 0 0 0 0 0 0 0% 00 00	leave blank if not relevant describe original designer name(date original designer name(date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wail cladding: Roof Cladding: Roof Cladding: Gelargs: Available documentation Architectural Step: Ste performance: (ref DEE Table 4-2) Stetement: Differential settlement: Ligurage to area: Building: Current Placard Status: Along Damage ratio: Describe (summary): Describe (summary): Diaphragms Damage? CSWs: Damage? Pounding: Damage?	Metal plaster, fixed none partial none none none none none none none none none inone inone inone inone apparent none apparent none apparent inone apparent 0% ino ino ino	leave blank if not relevant describe original designer name(date notes (if applicable): notes (if appl	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wail cladding: Roof Cladding: Roof Cladding: Glazing: Celling:: Stairs: Vail cladding: Cladding: Available documentation Architectural Structural Mechanical Electrical Getectre Getectre Stee performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liguadation: Lateral Spread: Differential lateral spread: Differential lateral spread: Describe (summary):	Metal plaster, fixed none partial none none none none none none none apparent none none none none none none none none none no	leave blank if not relevant describe original designer name/date original designer name/date notes (if applicable): notes	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Glazing: Cellings: Structural Mechanical Electrical Geotech report Stee performance: (refer DEE Table 4-2) Stee performance: Stee: (refer DEE Table 4-2) Stee: Current Placard Status: Along Damage ratio: Describe (summary): Describe (summary): Across Damage? Staty: Damage? Staty Describe (summary): Disphragms Damage? CSWs: Damage? Pounding: Damage?	Metal plaster, fixed none none none none none none none none none inone inone inone inone apparent none apparent sight igreen 0% no ino ino ino ino ino	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Glazing: Celings: Services(lst): Available documentation Architectural Ster Site performance: (ref DEE Table 4-2) Site performance: Ster Site performance: (ref DEE Table 4-2) Settlement: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlerement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlerement: Liguefaction: Lateral Spread: Differential settlerement: Liguefaction: Lateral Spread: Differential settlerement: Liguefaction: Across Damage rato:	Metal plaster, fixed none partial none none none none none none none none none green 0% no no no no	leave blank if not relevant describe original designer name/date original designer name/date origi	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m
Separations: north (mm): east (mm): south (mm): west (mm): south (mm): Non-structural elements Stairs: Wall cladding: Coldiding: Roof Cladding: Ceinings: Services(Ist): Available documentation Architectural Structural Barning: Ceinings: Site: Site performance: (refer DEE Table 4-2) Settlement: Damage Settlement: Differential sterial spread: Differential sterial spread: Differential sterial spread: Differential sterial spread: Building: Current Placard Status: Along Damage ratio: Describe (summary): Describe (summary): Across Damage ratio: Disphragms Damage ? Pounding: Damage ? Non-structural: Damage ? Recommendations Level of repair/strengthening required:	Metal plaster, fixed none partial none none none none 0-25mm none none none none none apparent none apparent sight green 0% no	leave blank if not relevant describe original designer name/date original designer name/date origi	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, ste
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Calaring: Roof Cladding: Ceinings: Services(ist): Available documentation Architectural Architectural Site: Site performance: (refer DEE Table 4-2) Settlement: Damage Site performance: Differential settlement: Lateral Spread: Differential settlement: Differential settlement: Damage to area: Building: Current Placard Status: Damage ratio: Along Damage ratio: Disphragms Damage ratio: Diaphragms Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required: Building Consent required: Building Consent required:	Metal Metal plaster, fixed none partial none none C C C S S S S S S S S S S	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me Cracks in concrete floor slab, s
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Collarding: Wal cladding: Collarding: Collarding: Collarding: Available documentation Architectural Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefactor: Liquefactor: Differential settlement: Differential settlement: Differential settle	Image: second	leave blank if not relevant describe original designer name/date original designer name/date neme/date original designer name/date original designer name	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me Cracks in concrete floor slab, ste
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Colliding: Wal cladding: Colliding: Colling: Stairs: Valiable documentation Architectural Available documentation Architectural Site: Site performance: (refer DEE Table 4-2) Settlement: Liquefaction: Liquefaction: Liquefactor: Liquefactor: Liquefactor: Damage to area: Building: Current Placard Status: Along Damage ratio: Diaphragms Damage ratio: Diaphragms Damage? Solws: Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required: Recommendations Level of repair/strengthening required: Along Assessed %NBS before e'quakes: Along Assessed %NBS before e'quakes: Along Assessed %NBS before e'quakes:	Image: second	leave blank if not relevant describe original designer name/date original designer name/date describe: Describe:	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, ste

ıg IEP.	fields if not using	recedence. Do not fill in f	h would take p	ay give a different answer, which	d is not mandatory - more detailed analysis n	Use of this m	IEP
	m	hn from above:			65-1976	Period of design of building (from above)	
		ired for this age of building	not requ			one, if designed between 1965 and 1992	Seismic Z
across		along	norrequ				
0.4	T	0.4	-	Period (from above): (%NBS)nom from Fig 3.3:			
		, Zone B = 1.2; all else 1.0	.33; 1965-1976	365 = 1.25; 1965-1976, Zone A =1	ign public buildings, to the code of the day: pre-1	Note:1 for specifically	
		ween 1976-1984, use 1.2 except in Wellington (1.0)	gs designed be o 1935 use 0.8,	Note 2: for RC building tote 3: for buildings designed prior to	,		
across	e	along					
0%		0%		Final (%NBS)nom:			
		from NZS1170.5, cl 3.1.6:	It scaling factor,	Near Fau		2.2 Near Fault Scaling Factor	
#DIV/0!	a #	#DIV/0!		scaling factor (1/N(T,D), Factor A:	Near Fault		
	·	from AS1170.5, Table 3.3:	factor Z for site	Hazard		2.3 Hazard Scaling Factor	
#DIV/0!	#	d scaling factor, Factor B:	Haza				
1		ortance level (from above):	Building Imp			2.4 Return Period Scaling Factor	
		from Table 3.1, Factor C:	od Scaling facto	Return Perio			
across	<u>a</u>	along		uctility (less than max in Table 3.2)	Assessed	2.5 Ductility Scaling Factor	
				or =kµ, if pre-1976, fromTable 3.3:	Ductility scaling factor: =1 from 1976 onwards;		
0.00		0.00		Ductiity Scaling Factor, Factor D:			
				Sp:	tor:	2.6 Structural Performance Scaling	
#DIV/0!	#	#DIV/0!		ormance Scaling Factor Factor E:	Structural Per		
#DIV/0!	#	#DIV/0!		%NBS _b :	om x A x B x C x D x E	2.7 Baseline %NBS, (NBS%) _b = (%N	
					fer to NZSEE IEP Table 3.4)	Global Critical Structural Weaknesses	
					1	3.1. Plan Irregularity, factor A:	
Insignificant/none	Significant	Severe		Table for selection of D1	1	3.2. Vertical irregularity, Factor B:	
Sep>.01H	05 <sep<.01h< th=""><th>0<sep<.005h .00<="" th=""><th>Separation</th><th></th><th>1</th><th>3.3. Short columns, Factor C:</th><th></th></sep<.005h></th></sep<.01h<>	0 <sep<.005h .00<="" th=""><th>Separation</th><th></th><th>1</th><th>3.3. Short columns, Factor C:</th><th></th></sep<.005h>	Separation		1	3.3. Short columns, Factor C:	
1 0.8	0.8 0.7	0.7 0.4	nin 20% of H nin 20% of H	Alignment of floors with Alignment of floors not with	Pounding effect D1, from Table to right Difference effect D2, from Table to right	3.4. Pounding potential Hei	
Insignificant/none	Significant	Severe		Table for Selection of D2	Therefore, Factor D: 0		
Sep>.01H	05 <sep<.01h< td=""><td>0<sep<.005h .00<="" td=""><td>Separation</td><td>Height difference</td><td>1</td><td>3.5. Site Characteristics</td><td></td></sep<.005h></td></sep<.01h<>	0 <sep<.005h .00<="" td=""><td>Separation</td><td>Height difference</td><td>1</td><td>3.5. Site Characteristics</td><td></td></sep<.005h>	Separation	Height difference	1	3.5. Site Characteristics	
1	0.9	0.7	to 4 storeys	Height difference 2			
1	1	1	e < 2 storeys	Height difference			
ACIOSS		Along		wise max valule =1.5, no minimum	For ≤ 3 storeys, max value =2.5, othe	3.6. Other factors, Factor F	
	1				i van		
sses	structural weakness	odification for other critical s	on of F factor m	section 6.3.1 of DEE for discussion	fer to DEE Procedure section 6) Refer als	Detail Critical Structural Weaknesses List any	
0.00		0.00			atio (PAR)	3.7. Overall Performance Achievem	
#DIV/0!	#	#DIV/0!		PAR x Baselline %NBS:		4.3 PAR x (%NBS)b:	
#DIV/0!	#	[%NBS), (before)	4.4 Percentage New Building Stand	
		0.00 #DIV/0!		PAR x Baselline %NBS:	atio (PAR) %NBS), (before)	3.7. Overall Performance Achievem 4.3 PAR x (%NBS)b: 4.4 Percentage New Building Stand Accepted By Date	Official Use only:

Detailed Engineering Evaluation Summary Data			V1.14
Location Building Name:	Carport K - Aldwins Courts	Reviewer	David Elliott
Building Address:	Unit	No: Street CPEng No: 55 Advise Road Company	202002
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number:	237698
000	Degrees	Min Sec	03 3/1 0/61
GPS south: GPS east:	43	32 25.31 Date of submission: 39 59.84 Inspection Date:	16/10/2015
Building Unique Identifier (CCC):	PRO 0811 BLDG 009	Revision: Is there a full report with this summary?	yes
Site			
Site slope:	flat	Max retaining height (m): Soil Profile (if available):	
Site Class (to NZS1170.5): Provinity to waterway (m, if <100m)	D	If Ground improvement on site describe:	
Proximity to waterway (m, if < 100m): Proximity to clifftop (m, if < 100m):			
Proximity to can base (m,ii < room).		Approx sile elevation (m).	
Building			
No. of storeys above ground: Ground floor split?	1 no	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground Foundation type:	0 strip footings	if Foundation type is other, describe:	
Building height (m): Floor footprint area (approx):	2.00	height from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years):	37	Date of design:	1965-1976
Strengthening present?	no	If so, when (year)?	
Lise (ground floor):	other (specify)	And what load level (%g)? Brief strendbening description:	
Use (upper floors):	Carport (4 No. car spaces)	Dier dreigerening deserption.	
Importance level (to NZS1170.5):	L2		
Gravity Structure			
Gravity System: Roof:	frame system timber framed	rafter type, purlin type and cladding	
Floors: Beams:	concrete flat slab	slab thickness (mm)	100
Columns: Walls:	other (note) partially filled concrete masonry	typical dimensions (mm x mm) thickness (mm)	50 mm OD pipe posts 200
Lateral load resisting structure			
Lateral system along: Ductility assumed. u:	partially filled CMU 1.25	Note: Define along and across in note total length of wall at ground (m):	12
Period along:	0.40	#### enter height above at H31 estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate of calculation?	
		note total length of wall at ground (m):	
Lateral system across: Ductility assumed, µ:	partially filled CMU 1.25		[Out-of-plane (12 m length, 200 mm thick)]
Period across: Total deflection (ULS) (mm):	0.40	#### enter height above at H31 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Separations: north (mm):		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm):		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm):		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs:		leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Val cladding: Part Cladding: Part Cladding:	Level Level	leave blank if not relevant	
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Val cladding: Roof Cladding: Glazing: Glazing:	Metal	leave blank if not relevant describe	
Separations: north (mm): east (mm): south (mm): west (mm): Wall cladding: Roof Cladding: Roof Cladding: Ceilings: Services(is):	Metal plaster, fixed	leave blank if not relevant describe	
Separations: north (mn): east (mn): south (mn): west (mn): Wal cladding: Roof Cladding: Roof Cladding: Cellings: Services(list):	Metal plaster, fixed	leave blank if not relevant describe	
Separations: north (mm): east (mm): south (mm): west (mm): Wal cladding: Roof Cladding: Roof Cladding: Ceiling: Services(ist): Available documentation Architectural	Metal plaster, fixed	leave blank if not relevant describe original designer name/date	
Separations: north (mm): east (mm): south (mm): west (mm): Wall cladding: Roof Cladding: Roof Cladding: Ceilings: Services(list): Available documentation Architectural Structural	Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mn): east (mn): south (mn): west (mn): west (mn): Wal cladding: Roof Cladding: Glazding: Glazding: Glazding: Services(ist): Available documentation Architectural Electrical Geotech record	Metal plaster, fixed none partial none none none none none none none non	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): south (mm): west (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Glazing: Cellings: Services(ist): Available documentation Architectural Mechanical Electrical Geotech report	Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Glazing: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: Site nerformance:	Netal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Glazing: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: (refor DEE Table 4-2) Site performance: Cellings:	Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: (refer DEE Table 4-2) Stel performance: Settlement: Differential settlement:	Metai plaster, fixed partial none none none none none none	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor skab, step cracks in m
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Geotech report Damage Site: Step enformance: (refer DEE Table 4-2) Dateral Spread: Uteral Spread: Setteral Spread: Liquetaction: Liquetaction:	Metal plaster, fixed none none opparent	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Mechanical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Ufferential settlement: Liquefaction: Lateral Spread: Differential settlement: Ciquefaction: Lateral Spread: Differential settlement:	Metal plaster, fixed none partial none none apparent none apparent none apparent	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(lst): Available documentation Architectural Structural Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Settlement: Liquefaction: Lateral Spread: Offerential settlement: Cifferential settlement: Ciffe	Metal plaster, fixed none partial none none opparent none apparent none apparent none apparent slight	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor siab, step cracks in m
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(lst): Available documentation Architectural Structural Geotech report Damage Site performance: (refer DEE Table 4-2) Setternet: Liquefaction: Lateral Spread: Differential settlement: Cifferential settlement: Differential settlement: Cifferential settlement: Differential settlement:	Metai plaster, fixed none partial none none none none 0-25mm none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent sight green	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (rmn): east (rmn): south (rmn): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Building: Damage Site performance: (refer DEE Table 4-2) Stetrarel Stetrarel Differential settlement: Ciferential settlement: Differential settlement: Differential settlement: Differential settlement: Building: Building: Current Placard Status: Status:	Metal plaster, fixed none partial none none none none none 000 none observed more than 10 mV100m² none apparent none apparent none apparent slight	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Separations: north (rmf): east (rmf): south (rmf): west (rmf): Non-structural elements Stairs: Wal claiding: Roof Claiding: Cellings: Services(list): Available documentation Architectural Structural Building: Damage Site: (refer DEE Table 4-2) Site performance: Cellement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Building: Current Placard Status: Along Aung Damage ratio: Describe (surmary): Describe (surmary):	Metal plaster, fixed none partial none none none none none none none none observed more than 10 mV100m² none apparent none apparent none apparent slight green 0%	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976
Separations: north (rmf): east (rmf): south (rmf): Non-structural elements Stairs: Wal claiding: Roof Claiding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Literal Spread: Differential settlement: Differential settlement: Describe (summar); Describe (summar); Across	Metal plaster, fixed none partial none none none none none none observed more than 10 mV100m² none apparent none apparent slight green 0%	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (rmf): east (rmf): south (rmf): west (rmf): west (rmf): Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Structural Geatings: Cellings: Services(list): Damage Site: (refer DEE Table 4-2) Site performance: Literal Spread: Differential settlement: Differential settlement: Citeral Spread: Differential settlement: Differential settlement: Citeral Spread: Differential settlement: Differential settlement: Citeral Spread: Differential settlement: Differential settlement: Citeral Spread: Differential settlement: Differential settlement: Differential settlement: Current Placard Status: Along Aung Damage ratio: Describe (summary):	Metal plaster, fixed none partial none none none none none none none none observed more than 10 m³/100m³ none apparent none apparent none apparent slight green 0%	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976
Separations: north (rmn): east (rmn): south (rmn): Non-structural elements Statis: Wal cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Ufferential settlement: Differential settlement: Differential settlement: Current Placard Status: Damage to area: Damage to area: Damage to area: Statural Spread; Current Placard Status: Along Aung Damage ratio: Describe (summary); Diaphragms	Metal plaster, fixed partial none partial none none none none none none none none none data none apparent none apparent none apparent green 0% no	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (rmf): east (rmf): south (rmf): west (rmf): Non-structural elements Statis: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Ufferential settlement: Differential settlement: Current Placard Status: Damage to area: Describe (summary): Diaphragms Airops Damage? CSWs:	Metal plaster, fixed partial none partial none none none none none none none none none observed more than 10 m³/100m² none apparent none apparent sight green 0% no no	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Separations: north (rmf): east (rmf): south (rmf): west (rmf): Non-structural elements Statis: Wall cladding: Roof Cladding: Cellings: Services(las): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Cellings: Differential settlement: Differential settlement: Liquetacion: Liquetac	Image: constraint of the second se	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Motar between masonry wall connected to Bk
Separations: north (rmf): east (rmf): south (rmf): west (rmf): Non-structural elements Statis: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Cellings: Differential settlement: Differential settlement	Image: Second	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Mortar between masonry wall connected to Bk
Separations: north (rm): east (rm): south (rm): west (rm); Non-structural elements Stairs: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Cellings: Differential settlement: Differential settlement: Current Placard Status: Damage to area: Damage to area: Damage to area: Damage to area: Describe (summary); Along Damage ratio: Describe (summary); Diaphragms Damage?: CSWs: Damage?: Damage?: Non-structural:	Metal plaster, fixed none partial none none none none none none none none none none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent offer apparent 0% 0% 0% ves yes	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Mortar between masonry wall connected to Bk
Separations: north (rmn): east (rmn): south (rmn): south (rmn): west (rmn): Non-structural elements Statis: Wall cladding: Roof Cladding: Roof Cladding: Cellings: Available documentation Architectural Structural Mechanical Electrical Geotech Geotech Site performance: (refer DEE Table 4-2) Settement: Differential settlement: Lighteaction: Lighteaction: Damage to area: Differential settlement: Damage to area: Damage to area: Damage to area: Differential settlement: Damage to area: Damage to area: Damage to area: Differential settlement: Damage to	Metal plaster, fixed none partial none none none none none none none none none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent none apparent of% 0% ves yes	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Mortar between masonry wall connected to Bk Mortar between masonry wall connected to Bk Need to be strengthened to 67% NBS or
Separations: north (rmf): east (rmf): south (rmf): Non-structural elements Statis: Wal cladding: Roof Cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Utferential settlement: Differential settlement: Current Placard Status: Damage to area Building: Current Placard Status: Damage to area Along Damage to area Diaphragms Damage?: Describe (summary): Diaphragms Diaphragms Damage?: Damage?: Non-structural: Recommendations Level of repair/strengthening required: Building Consent required: Building Consent required:	Metal plaster, fixed none partial none none none none none none none none none observed more than 10 m³/100m³ none apparent none apparent none apparent slight green 0% no yes yes minor structural	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Mortar between masonry wall connected to Bk
Separations: north (rmf): east (rmf): south (rmf): south (rmf): west (rmf): Non-structural elements Statis: Wal cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Literal Spread: Differential settlement: Differential settlement: Cifferential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Differential settlement: Cifferential settlement: Differential settlement: Differential settlement: Differential settlement: Cifferential settlement: Differential settlement: Differential settlement: Cifferential settlement: Differential settlement: Differential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Differential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Differential settlement: Cifferential settlement: Differential settlement: Damage to area Cifferential settlement: Describe (summary): Diaphragms Cifferential settlement: Damage?: Non-structural: Damage?: Cifferential cifferential settlement: Cifferential settlement: Differential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferential settlement: Cifferentia	Metal plaster, fixed none partial none none none none none none none none none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent none apparent none apparent yes yes yes minor structural yes full occupancy	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor slab, step cracks in m Mortar between masonry wall connected to Bk
Separations: north (rm): east (rm): south (rm): west (rm); Non-structural elements Stais: Wal cladding: Roof Cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Cellings: Differential settlement: Differential settlement: Crurrent Placard Status: Damage to area: Damage to area: Damage to area: Damage to area: Damage to area: Describe (summary): Diaphragms Along Damage?: CSWs: Damage?: Damage?: Non-structural: Non-structural: Damage?: Casesed %NBS before equakes: Assessed %NBS there outakes: Assessed %NBS there outakes: Assessed %NBS there outakes:	Metal plaster, fixed none partial none none none none none none none none observed more than 10 m³/100m² none apparent none apparent none apparent none apparent none apparent yes yes yes ful occupancy	leave blank if not relevant describe original designer name/date oride (f applicable): <t< td=""><td>Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, ste</td></t<>	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, ste
Separations: north (rm): south (rm): south (rm): south (rm): south (rm): south (rm): west (rm): Non-structural elements Stais: Wail cladding: Roof Cladding: Roof Cladding: Calings: Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: Site: Site performance: (refer DEE Table 4-2) Settement: Differential sateral spread: Differential settement: Lighteration: Lateral Spread: Differential settement: Differential settement: Lighteration: Lateral Spread: Differential settement: Differential settement: Lighteration: Current Placard Status: Along Damage to area Pounding: Damage? Non-structural: Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required: Building Consent required: Building Consent required: Building	Metal plaster, fixed none partial none none none none none none none none observed more than 10 m/100m² none apparent none apparent sight green 0% no yes yes ful occupancy 53% 53%	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Mortar between masonry wall connected to Blo Mortar

IEP	Use of this method is not mandatory - more detailed analysis may give a	lifferent answer, which would ta	ke precedence. Do not fill i	n fields if not usir	g IEP.
	Period of design of building (from above): 1965-1976		hn from above	: m	
	Seismic Zone, if designed between 1965 and 1992:	not	required for this age of building	9	
		not	required for this age of building	9	
		Period (from above):	along 0.4		across 0.4
	(%	NBS)nom from Fig 3.3:			
	Note:1 for specifically design public buildings, to the code of the day: pre-1965 = 1.25;	1965-1976, Zone A =1.33; 1965-1 Note 2: for RC buildings designed	976, Zone B = 1.2; all else 1.0 d between 1976-1984, use 1.2		
	Note 3: for b	uildngs designed prior to 1935 use	0.8, except in Wellington (1.0)	·	
		Final (%NBS)nom:	along 0%		across 0%
	2.2 Near Fault Scaling Factor	Near Fault scaling fa	ctor, from NZS1170.5, cl 3.1.6 along	i:	across
	Near Fault scaling fact	or (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor	Hazard factor Z for	site from AS1170.5, Table 3.3	:	
		F	lazard scaling factor, Factor B		#DIV/0!
	2.4. Patum Pariod Scaling Factor	Duilding	Importance level (from chours)		1
	2.4 Return Feriou Scaling Factor	Return Period Scaling f	actor from Table 3.1, Factor C		
	2.5 Ducility Casting Factor	then may in Table 2.2)	along	1	across
	2.5 Ductility scaling factor Ductility scaling factor: =1 from 1976 onwards; or = $k\mu$, if pr	e-1976, fromTable 3.3:			
	Ductiity Sc	aling Factor, Factor D:	0.00	1	0.00
	2.6 Structural Performance Scaling Factor:	Sp:		1	
	Structural Performance S	caling Factor Factor E:	#DIV/0!		#DIV/0!
	Z./ Baseline %NBS, (NBS%)b = (%NBS)nom X A X B X C X D X E	%NB36:	#DIV/0!		#DIV/0!
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)				
	3.1. Plan irregularity, factor A:				
	3.2. Vertical irregularity, Factor B:	for selection of D1	Severe	Significant	Insignificant/none
	3.3. Short columns, Factor C:	Separatio	on 0 <sep<.005h .<="" th=""><th>005<sep<.01h< th=""><th>Sep>.01H</th></sep<.01h<></th></sep<.005h>	005 <sep<.01h< th=""><th>Sep>.01H</th></sep<.01h<>	Sep>.01H
	3.4. Pounding potential Pounding effect D1, from Table to right A Height Difference effect D2, from Table to right Alignment	ignment of floors within 20% of ment of floors not within 20% of	Н 0.7 Н 0.4	0.8 0.7	1 0.8
	Therefore, Factor D: 0 Table	for Selection of D2	Severe	Significant	Insignificant/none
	3.5. Site Characteristics	Separatio	on 0 <sep<.005h .<="" th=""><th>005<sep<.01h< th=""><th>Sep>.01H</th></sep<.01h<></th></sep<.005h>	005 <sep<.01h< th=""><th>Sep>.01H</th></sep<.01h<>	Sep>.01H
		Height difference > 4 store	vs 0.4 vs 0.7	0.7	1
		Height difference < 2 store	ys 1	1	1
	3.6. Other factors Easter E East - 2 storage may value - 2.5 otherwise may value		Along	1	Across
	Rationale for ch	oice of F factor, if not 1			
	Datail Critical Structural Washpasses: (refer to DEE Drasadura section 6)				
	List any: Refer also section 6.	3.1 of DEE for discussion of F factor	or modification for other critical	structural weakne	sses
	3.7. Overall Performance Achievement ratio (PAR)		0.00	[0.00
	4.3 PAR x (%NBS)b:	PAR x Baselline %NBS:	#DIV/0!		#DIV/0!
	4.4 Percentage New Building Standard (%NBS), (before)				#DIV/0!
Officia	al Use only:				
	Accepted By Date:				

Detailed Engineering Evaluation Summary Data			V1.14
Location			
Building Name:	Carport L - Aldwins Courts Unit	No: Street CPEng No:	David Elliott 202001
Building Address: Legal Description:	Carport L - Aldwins Courts DP 40879 ON LOTS 1 3 DP 38888	55 Aldwins Road Company: Company project number:	Aurecon 237698
· · ·	Degrees	Company phone number:	03 371 0761
GPS south:	43	32 24.54 Date of submission:	26/08/2014
GPS east.	172	4010.44 Inspection Date: Revision:	3
Building Unique Identifier (CCC):	PRO 0811 BLDG 010	Is there a full report with this summary?	yes
Site	a .	•• ••• ••••	
Site slope: Soil type:	mixed	Max retaining neight (m): Soil Profile (if available):	
Site Class (to NZS1170.5): Proximity to waterway (m. if <100m):	D	If Ground improvement on site, describe:	
Proximity to clifftop (m, if < 100m):			
Proximity to clini base (m,ii < 100m):		Approx site elevation (m):	
Building			
No. of storeys above ground: Ground floor split?	1	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground	0		
Foundation type: Building height (m):	strip footings 2.00	if Foundation type is other, describe: height from ground to level of uppermost seismic mass (for IEP only) (m):	
Floor footprint area (approx): Age of Building (years):	37	Date of design:	1965-1976
······································	<u> </u>		
Strengthening present?	no	If so, when (year)?	
Use (around floor):	other (specify)	And what load level (%g)? Brief strengthening description:	
Use (upper floors):	Corport (4 No. cor appage)		
Importance level (to NZS1170.5):	IL2		
Gravity Structure			
Gravity System:	frame system timber framed	rafter type, purlin type and cladding	
Floors	concrete flat slab	slab thickness (mm)	100
Beams: Columns:	other (note)	typical dimensions (mm x mm)	50 mm OD pipe posts
Walls:	partially filled concrete masonry	thickness (mm)	200
Lateral load resisting structure	and the filled CMU	Note: Define along and access in the state log shot of well at access (m).	40
Ductility assumed, µ:	1.25	detailed report!	12
Period along: Total deflection (ULS) (mm):	0.40	##### enter height above at H31 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
		note total length of wall at ground (m):	
Lateral system across: Ductility assumed, ut	partially filled CMU 1.25		Out-of-plane (12 m length, 200 mm thick)
Period across: Total deflection (ULS) (mm)	0.40	##### enter height above at H31 estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Separations:			
north (mm): east (mm):		leave blank if not relevant	
south (mm): west (mm)			
Neg structure classeste			
Stairs:			
Wall cladding: Roof Cladding:	Metal	describe	
Glazing: Ceilings	nlaster fixed		
Services(list):			
Available documentation Architectural	none	original designer name/date	
Structural	partial	original designer name/date	Enterprise Homes Ltd/1976
Electrical	none	original designer name/date original designer name/date	
Geotech report	none	original designer name/date	<u> </u>
Damage			
Site: Site performance:		Describe damage:	Cracks in concrete floor slab, step cracks in m
(refer DEE Table 4-2) Settlement:	0-25mm	notes (if applicable):	
Differential settlement:	none observed more than 10 m ³ /100m ²	notes (if applicable): notes (if applicable):	
Lateral Spread:	none apparent	notes (if applicable):	
Ground cracks:	none apparent	notes (if applicable): notes (if applicable):	
Damage to area:	slight	notes (if applicable):	
Building:	green		
Alere			
Along Damage ratio: Describe (summary):	0%	Describe how damage ratio arrived at:	
Across Damage ratio	0%	Damage $Ratio = \frac{(\% NBS(before) - \% NBS(after))}{(\% NBS(before) - \% NBS(after))}$	
Describe (summary):	070	% NBS (before)	
Diaphragms Damage?:	no	Describe:	
CSWs: Damage?	no	Describe:	
Pounding: Devent	Vac	December 2000/200	Mortar between maconsy well connected to Di
Damage?		Describe:	montal between masority wall connected to Bit
Non-structural: Damage?:	Lives	Describe:	
Recommendations			
			Need strengthening to 67% NBS or 100%
Level of repair/strengthening required:		Describe:	INDO.
Building Consent required:	yes	Describe:	
Building Consent required: Interim occupancy recommendations:	minor structural yes full occupancy	Describe: Describe:	
Building Consent required: Interim occupancy recommendations: Along Assessed %NBS before e/uakes:	minor structural yes full occupancy 53%	Describe: ##### %NBS from IEP below If IEP not used, please detail assessment with other	Quantitative
Along Assessed %NBS after e/quakes	minor structural yes full occupancy 53% 53%	Describe: Describe: ##### %NBS from IEP below If IEP not used, please detail assessment methodology:	Quantitative
Across Assessed %NBS after e/quakes: Assessed %NBS before e/quakes: Assessed %NBS before e/quakes: Assessed %NBS after e/quakes: Assessed %NBS after e/quakes:	minor structural yes full occupancy 53% 37% 37%	Describe: Describe: ##### %NBS from IEP below If IEP not used, please detail assessment methodology: ##### %NBS from IEP below	Quantitative

	Use of this method is not mandatory - more	e detailed analysis ma	y give a different answer, which would take	precedence. Do not fil	I in fields if not using	IEP.
	Period of design of building (from above): 1965-1976			h₀ from ab	iove: m	
Seismic	Zone, if designed between 1965 and 1992:		not re	equired for this age of bui	Iding	
			norm	elere		
			Period (from above): (%NBS)nom from Fig 3.3:	along 0.4		across 0.4
	Note:1 for specifically design public buildings, to the	code of the day: pre-19	965 = 1.25; 1965-1976, Zone A =1.33; 1965-19	76, Zone B = 1.2; all else	1.0	
		N	Note 2: for RC buildings designed ote 3: for buildings designed prior to 1935 use 0	between 1976-1984, use .8, except in Wellington (1.2	
			Final (%NBS)nom:	along 0%		across 0%
	2.2 Near Fault Scaling Factor		Near Fault scaling fact	or, from NZS1170.5, cl 3	.1.6:	001000
		Near Fault se	caling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
	2.3 Hazard Scaling Factor		Hazard factor Z for s	ite from AS1170.5, Table	3.3:	
			Ha	Z ₁₉₉₂ , from NZS4203: zard scaling factor, Factor	1992 or B:	#DIV/0!
					-	
	2.4 Return Period Scaling Factor		Building I	mportance level (from abo	ove):	1
			Return Penod Scaing lad	tor from Table 3.1, Pacto	я с:	
	2.5 Ductility Scaling Factor	Assessed du	ctility (less than max in Table 3.2)	along		across
	Ductility scaling factor: =1	from 1976 onwards; o	r =kµ, if pre-1976, fromTable 3.3:			
		1	Ductiity Scaling Factor, Factor D:	0.00		0.00
	2.6 Structural Performance Scaling Factor:		Sp:			
		Structural Perfo	rmance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
	2.7 Baseline %NBS, (NBS%)b = (%NBS)nom x A x B x C x D x E		%NBS6:	#DIV/0!		#DIV/0!
	Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)					
	3.1. Plan Irregularity, factor A:	1				
	3.2 Vertical irregularity Eactor B:					
			Table for selection of D1	Severe	Significant	Insignificant/none
	3.3. Short columns, Factor C:		Separation	0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	3.4. Pounding potential Pounding effect D1, from Ta Height Difference effect D2, from Ta	able to right	Alignment of floors within 20% of H Alignment of floors not within 20% of H	0.7 0.4	0.8 0.7	1 0.8
	Therefore	, Factor D: 0	Table for Selection of D2	Severe	Significant	Insignificant/none
	2.5. Site Characteristics		Separation	0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
	A D DIVERTIMENT OF THE DATE OF THE OF THE OF THE DATE OF THE					
	3.5. Site Characteristics		Height difference > 4 storeys	0.4	0.7	1
	5.5. Site Unaracteristics		Height difference > 4 storeys Height difference 2 to 4 storeys Height difference < 2 storeys	0.4 0.7 1	0.7 0.9 1	1 1 1
	5.5. Site Unaracteristics		Height difference > 4 storeys Height difference 2 to 4 storeys Height difference < 2 storeys	0.4 0.7 1	0.7 0.9 1	1 1 1 Across
	3.6. Other factors, Factor F For ≤ 3 storeys,	max value =2.5, otherw	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference < 2 storeys	0.4 0.7 1 Along	0.7 0.9 1	1 1 1 Across
	3.6. Other factors, Factor F For \leq 3 storeys,	max value =2.5, otherv Ratio	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference < 2 storeys ise max value =1.5, no minimum nale for choice of F factor, if not 1	0.4 0.7 1 Along	0.7 0.9 1	1 1 Across
	3.6. Other factors, Factor F For ≤ 3 storeys, Detail Critical Structural Weaknesses: (refer to DEE Procedure section	max value =2.5, otherv Ratio	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference 2 to 4 storeys ise max valule =1.5, no minimum nale for choice of F factor, if not 1	0.4 0.7 1 Along	0.7 0.9 1	1 1 Across
	3.6. Other factors, Factor F For ≤ 3 storeys, Detail Critical Structural Weaknesses: (refer to DEE Procedure section List any) 13.7. Ouerall Berformance Achievement ratio (BAR)	max value =2.5, otherv Ratio	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference 2 to 4 storeys ise max valule =1.5, no minimum nale for choice of F factor, if not 1 section 6.3.1 of DEE for discussion of F factor i	0.4 0.7 1 Along	0.7 0.9 1	1 1 Across
	3.6. Other factors, Factor F For ≤ 3 storeys, Detail Critical Structural Weaknesses: (refer to DEE Procedure section List any: 3.7. Overall Performance Achievement ratio (PAR)	max value =2.5, otherv Ratio	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference 2 to 4 storeys ise max valule =1.5, no minimum nale for choice of F factor, if not 1 section 6.3.1 of DEE for discussion of F factor	0.4 0.7 1 Along modification for other critic	0.7 0.9 1	1 1 1 Across
	3.6. Other factors, Factor F For ≤ 3 storeys, Detail Critical Structural Weaknesses: (refer to DEE Procedure section List any: 3.7. Overall Performance Achievement ratio (PAR) 4.3 PAR x (%NBS)b:	max value =2.5, otherv Ratio	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference 2 to 4 storeys ise max valule =1.5, no minimum nale for choice of F factor, if not 1 section 6.3.1 of DEE for discussion of F factor i PAR x Baselline %NBS:	0.4 0.7 1 Along modification for other critic 0.90	0.7 0.9 1	1 1 1 Across Ses 0.00
	3.6. Other factors, Factor F For ≤ 3 storeys, Detail Critical Structural Weaknesses: (refer to DEE Procedure section List any:	max value =2.5, otherv Ratio (6) Refer also	Height difference > 4 storeys Height difference 2 to 4 storeys Height difference 2 to 4 storeys Height difference < 2 storeys ise max valule =1.5, no minimum nale for choice of F factor, if not 1 section 6.3.1 of DEE for discussion of F factor i PAR x Baselline %NBS:	0.4 0.7 1 Along modification for other critic 0.90	0.7 0.9 1	1 1 1

Location			V1.14
Building Name:	Carport M - Aldwins Courts	Reviewer:	David Elliott
Building Address:	Unit Carport M - Aldwins Courts	No: Street CPEng No: 55 Aldwins Road Company:	202002 Aurecon
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number: Company phone number:	237698
GPS south:	Degrees 43	Min Sec 32 23.96 Date of submission:	16/12/2015
GPS east:	172	40 1.12 Inspection Date: Revision:	13/08/2013
Building Unique Identifier (CCC):	PRO 0811 BLDG 011	Is there a full report with this summary?	yes
Site Slope:	flat	Max retaining height (m):	
Soil type: Site Class (to NZS1170.5):	mixed D	Soil Profile (if available):	
Proximity to waterway (m, if <100m): Proximity to clifftop (m, if <100m):		If Ground improvement on site, describe:	
Proximity to cliff base (m,if <100m):		Approx site elevation (m):	
Building			
No. of storeys above ground: Ground floor split?	1 no	single storey = 1 Ground floor elevation (Absolute) (m): Ground floor elevation above ground (m):	
Storeys below ground Foundation type:	0 strip footings	if Foundation type is other, describe:	
Building height (m): Floor footprint area (approx):	2.00	height from ground to level of uppermost seismic mass (for IEP only) (m):	
Age of Building (years):		Date of design:	1965-1976
Strengthening present?	no	If so, when (year)?	
Use (ground floor):	other (specify)	And what load level (%g)? Brief strengthening description:	
Use (upper hoors): Use notes (if required):	Carport (3 No. car spaces)		
importance level (to N251170.5):			
Gravity Structure Gravity System:	frame system	refer time in which the and electric	
Floors: Beams	concrete flat slab	slab thickness (mm)	100
Columns: Walk:	other (note)	typical dimensions (mm x mm)	50 mm OD pipe posts 200
Lateral load resisting structure			
Lateral system along: Ductility assumed, µ:	partially filled CMU 1.25	Note: Define along and across in note total length of wall at ground (m): detailed report!	9
Period along: Total deflection (ULS) (mm)	0.40	#### enter height above at H31 estimate or calculation? estimate or calculation?	estimated
maximum interstorey deflection (ULS) (mm):		estimate or calculation?	
Lateral system across:	partially filled CMU	note total length of wall at ground (m):	Out-of-plane (9 m length, 200 mm thick)
Ductilitý assumed, μ: Period across:	1.25	#### enter height above at H31 estimate or calculation?	estimated
Total deflection (ULS) (mm): maximum interstorey deflection (ULS) (mm):		estimate or calculation? estimate or calculation?	
Separations:			
north (mm): east (mm):		leave blank if not relevant	
south (mm): west (mm):			
Non-structural elements Stoire			
Non-structural elements Stairs: Wall cladding: Boof Cladding:	Metal	describe	
<u>Non-structural elements</u> Stairs: Wall cladding: Roof Cladding: Glazing: Ceiling:	Metal Diaster fixed	describe	
<u>Non-structural elements</u> Wall cladding: Roof Cladding: Gelazing: Ceilings Services(ist):	Metal plaster, fixed	describe	
Non-structural elements Wall cladding: Roof Cladding: Glazing: Ceilings: Services(list): Available documentation	Metal plaster, fixed	describe	
Non-structural elements Wall cladding: Roof Cladding: Celings: Services(ist): Available documentation Architectural Structural	Metal plaster, fixed	describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Non-structural elements Wall cladding: Roof Cladding: Ceilings: Services(ist): Available documentation Architectural Structural Mechanica Electrica	Metal plaster, fixed none partial none none	describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Non-structural elements Wall cladding: Roof Cladding: Ceiings: Services(lat) Available documentation Architectural Structural Mechanica Electrica Geotech report	Metal plaster, fixed	describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Non-structural elements Stairs: Wall cladding: Roof Cladding: Ceilings: Services(ist) Available documentation Architectural Structural Electrica Geotech report Damage	Metal plaster, fixed none partial none none none	describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976
Non-structural elements Stairs: Wall cladding: Roof Cladding: Celling: Cell	Metal plaster, fixed none partial none none none	describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma
Non-structural elements Stairs: Wall cladding: Roof Cladding: Celings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Settlement: Differential settlement: Differential settlement:	Metal plaster, fixed none none none none none 0-25mm none observed	describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in mi
Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Liquefaction: Li	Metal plaster, fixed none partial none none none 0-25mm none observed more than 10 m/100m² none aparent	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Cellings: Structural Cellings: Structural Stru	Metal plaster, fixed none partial none none C-25mm none observed more than 10 m?100m² none apparent none apparen	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Services(list) Available documentation Architectural Structural Structural Cleaners Structural Str	Metal plaster, fixed none partial none none none C-25mm none observed nore apparent none apparent none apparent none apparent none apparent slight	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Non-structural elements Stairs: Wall cladding: Roof Cladding: Stairs: Roof Cladding: Stairs: Roof Cladding: Roo	Metal plaster, fixed none partial none none none C-25mm none observed none apparent none apparent none apparent none apparent none apparent green green	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me
Non-structural elements Stairs: Wal i cladding: Roof Cladding: Cellings: Services(list) Available documentation Architectural Structural Mechanica Celetrica Celetrica Steperformance: Electrica Geotech report Differential settlement: Lateral Spread: Differential settlement Lateral Spread: Differential settlement Lateral Spread: Differential settlement Eleured Differential settleme	Metal plaster, fixed none partial none none none C-25mm none observed more than 10 m³/100m² none apparent none apparent none apparent slight green 0%	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976
Non-structural elements Stairs: Wall cladding: Roof Cladding: Goldizing: Cellings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Stetlement: Differential settlement: Liquefaction: Lateral Spread: Differential lateral spre	Metal plaster, fixed none partial none none C-25mm none beserved more than 10 m9/100m² none apparent none apparent green green 0%	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976
Non-structural elements Stairs: Wall cladding: Roof Cladding: Octification Glazing: Available documentation Architectural Mechanica Structural Bectrica Geotech Step: Step performance: Step: Step performance: Creating: Step performance: Building: Current Placard Status: Along Damage ratio: Describe (summary): Describe (summary): Across Damage ratio:	Metal plaster, fixed none partial none none C-25mm none cone cone cone cone cone cone cone	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976
Non-structural elements Stairs: Wall cladding: Roof Cladding: Operation of Cladding: Celling: Available documentation Architectural Mechanica Structural Mechanica Geotech Geotech report Ste: Site performance: Ste: Site performance: Creft DEE Table 4-2) Settlement: Differential settlement: Liquefaction: Lateral Spread Offerential settlement: Differential settlement: Liquefaction: Lateral Spread Differential settlement: Liquefaction: Current Placard Status: Damage to area: Differential settlement: Liquefaction: Current Placard Status: Damage to area: Damage to area: Building: Current Placard Status: Across Damage ratio: Describe (summary): Describe (summary): Daphragms Damage?	Metal plaster, fixed none partial none partial none none C-25mm none observed more than 10 m/100m² none apparent none apparent slight green 0% 0% 0%	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma
Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Steperformance: Uniferential settlement: Liquefaction: Lateral Spread: Differential lateral spread: Damage to area: Building: Current Placard Status: Damage ratio: Describe (summary): Along Damage ratio: Describe (summary): Across Damage ratio: Describe (summary): Diaphragms Damage?: CSWs: Damage?	Metal plaster, fixed none partial none green 0% no no	describe original designer name/date original designer name/date origin	
Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Site: Services(list) Differential settlement: Liquefaction: Liqu	Metal plaster, fixed none partial none none none none none none none none none none observed more than 10 m/100m² none apparent none apparent none apparent slight green 0% no no	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m
Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site performance: Cellengs: Steries Site: (refer DEE Table 4-2) Site performance: Sterral Stateral Spread: Differential settlement: Liquefaction: Liquefaction: Liquefaction: Liquefaction: Stateral Spread: Differential lateral spread: Ground cracks: Damage tabic Describe (summary): Across Damage ratio Describe (summary): Describe (summary): Along Damage ratio Describe (summary): Damage ratio Describe (summary): Diaphragms Damage? Damage? Damage? Damage? Ourse: Damage? Damage? Non-structural: Damage? Damage?	Metal plaster, fixed none one none observed more than 10 m/100m² none apparent none apparent none apparent slight green 0% no no no yes	describe original designer name/date original designer name/date origin	
Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(list): Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Steperformance: Crefer DEE Table 4-2) Stetiement: Lateral Spread Differential settlement: Lateral Spread Differential steral spread Offerential settlement: Lateral Spread Differential steral spread Ground cracks: Damage tabing: Building: Current Placard Status: Along Along Damage ratio Describe (summary): Describe (summary): Diaphragms Damage? CSW s: Damage? Pounding: Damage? Non-structural: Damage? Recommendations Endamage?	Metal plaster, fixed none none none none none none none none none none observed more than 10 m9/100m² none apparent none apparent none apparent slight green 0% no no yes	describe original designer name/date original designer designer netes (if applicable): notes	
Non-structural elements States: Wall cladding: Roof Cladding: Roof Cladding: Cellings: Services(list): Structural Available documentation Architectural Architectural Structural Barage Structural Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefaction: Lateral Spread: Damage to area: Building: Current Placard Status: Along Damage ratio: Describe (summary); Describe (summary); Across Damage ratio: Diaphragms Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required:	Metal plaster, fixed none none apparent sight green 0% no no no no no	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, ste
Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Services(list) Available documentation Architectural Structural Mechanica Electrica Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Ligureation Ligureation Lateral Spread; Differential settlement: Ligureation Lateral Spread; Differential settlement: Differential settlement: Ligureation Lateral Spread; Differential settlement: Differential settlement: Ligureation Lateral Spread; Differential settlement: Differential settlement: Ligureation Lateral Spread; Differential settlement: Ligureation Describe (summary); Diaphragms Across Damage ratio Describe (summary); Diaphragms Diaphragms Damage? CSWs: Non-structural: Damage? Recommendations Level of repair/strengthening required; Building Consent required; Interim occupancy recommendations	Metal plaster, fixed none partial none none none none 0-25mm none observed more inparent none apparent green 0% 0% no no no no no no no none no	describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Comparison Compare
Non-structural elements States: Wall cladding: Roof Cladding: Roof Cladding: Services(list) Available documentation Architectural Structural Mechanica Geotecherport Damage Site: (refer DEE Table 4-2) Ste performance: Stetlement: Differential settlement: Liquefaction Lateral Spread: Differential lateral spread: Structural: Building: Current Placard Status Along Damage ratio: Describe (summary): Diaphragms Damage ratio: Describe (summary): Damage ratio: Describe (summary): Diaphragms Damage ?: Damage? Non-structural: Damage? Recommendations Level of repair/strengthening required: Building Consent required: Interim occupancy recommendations; Along Assessed %MBS before e'quakes;	Metal plaster, fixed none partial none none observed none apparent none green 0% no no no no no no no no none no no no no no no no no no none none	describe original designer nameldate original designer nameldate ness (if applicable): ness (if appl	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me Cracks in concrete floor slab
Non-structural elements States: Wall cladding: Reof Cladding: Ocean classifier Glazzing: Available documentation Architectural Structural Structural Damage Structural Site: Ste performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Along Damage ratio: Describe (summary): Damage ratio: Describe (summary): Damage? Non-structural: Damage? Pounding: Damage? Non-structural: Damage? Recommenda	Metal plaster, fixed none partial none none observed none apparent none apparent none apparent slight green 0% no	describe original designer name/date original designer original designer Describe: Describe: Describe: Describe:	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in concrete floor slab, step cracks in ma Cracks in sterengthed by council and cracks in strengthed by OPUS minor repairs Cracks in sterengthed by Council and cracks in sterengthed by CPUS minor repairs Cracks in sterengthed by CPUS

EP	Use of this met	hod is not mandatory - more detailed analysis m	ay give a different answer, which wo	uld take precedence. Do not fi	II in fields if not usir	ıg IEP.
Per	riod of design of building (from above):	965-1976		hn from ab	ove: m	
Seismic Zone	e, if designed between 1965 and 1992:			not required for this age of built	ding	
				along		301055
			Period (from above): (%NBS)nom from Fig 3.3:	0.4		0.4
	Note:1 for specifically d	esign public buildings, to the code of the day: pre-19	165 = 1.25; 1965-1976, Zone A =1.33; 1	1965-1976, Zone B = 1.2; all else	1.0	
		N	Note 2: for RC buildings de ote 3: for buildings designed prior to 193	esigned between 1976-1984, use 35 use 0.8, except in Wellington (*	1.2 1.0)	
			Final (%NBS)mm	along		across
				078		078
2	2.2 Near Fault Scaling Factor		Near Fault sca	ling factor, from NZS1170.5, cl 3. along	1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
2	2.3 Hazard Scaling Factor		Hazard facto	r Z for site from AS1170.5, Table Z1992, from NZS4203:1	3.3: 992	
				Hazard scaling factor, Facto	r B:	#DIV/0!
2	2.4 Return Period Scaling Factor		B	uilding Importance level (from abo	ve):	1
			Return Period Sc	aling factor from Table 3.1, Facto	rc:	007000
2	2.5 Ductility Scaling Factor	Assessed de	uctility (less than max in Table 3.2)	along		acioss
			Ductiity Scaling Factor, Factor D:	0.00		0.00
2	2.6 Structural Performance Scaling F	actor:	Sp:			
		Structural Perfe	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
2	2.7 Baseline %NBS. (NBS%)ь = (%NBS	S)nom x A x B x C x D x E	%NBS6:	#DIV/0!		#DIV/0!
(Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)				
3	3.1. Plan Irregularity, factor A:	1				
3	3.2. Vertical irregularity, Factor B:	1				
3	3.3. Short columns, Factor C:	1	Table for selection of D1 Sep	Severe oaration 0 <sep<.005h< th=""><th>Significant .005<sep<.01h< th=""><th>Insignificant/none Sep>.01H</th></sep<.01h<></th></sep<.005h<>	Significant .005 <sep<.01h< th=""><th>Insignificant/none Sep>.01H</th></sep<.01h<>	Insignificant/none Sep>.01H
3	3.4. Pounding potential Heigh	Pounding effect D1, from Table to right	Alignment of floors within 20	0% of H 0.7	0.8	1
		Therefore, Factor D: 0	Table for Selection of D2	Severe	Significant	Insignificant/none
3	3.5. Site Characteristics	1	Sep	oaration 0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
			Height difference 2 to 4	storeys 0.4 storeys 0.7	0.9	1
			Height difference < 2	storeys 1	1	1
3	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		ACIOSS
		TVCH.				
	Detail Critical Structural Weaknesses: (List any:	refer to DEE Procedure section 6) Refer also	section 6.3.1 of DEE for discussion of	F factor modification for other crit	ical structural weakne	sses
	3.7. Overall Performance Achievemen	t ratio (PAR)		0.00		0.00
				#DIN//01		
				#DIV/0!		#DIV/0!
4	4.3 PAR x (%NBS)b:		PAR X Dasemine /mbb3.			#DIV/01
Detailed Engineering Evaluation Summary Data			V1.14			
---	---	---	--			
Location Building Name:	Carport Q - Aldwins Courts	Reviewer	David Elliott			
Building Address:	Unit	No: Street CPEng No: 55 Advine Road Company	202002			
Legal Description:	DP 40879 ON LOTS 1 3 DP 38888	Company project number:	237698			
CDC south	Degrees	Min Sec	40/42/2015			
GPS south. GPS east:	43	40 1.10 Date of submission.	13/08/2013			
Building Unique Identifier (CCC):	PRO 0811 BLDG 011	Revision: Is there a full report with this summary?	yes			
Site						
Site slope: Soil type:	flat mixed	Max retaining height (m): Soil Profile (if available):				
Site Class (to NZS1170.5): Proximity to waterway (m, if <100m):	D	If Ground improvement on site, describe:				
Proximity to clifftop (m, if < 100m): Proximity to cliff base (m, if <100m):		Approx site elevation (m):				
Building	1	single storay = 1 Ground floor elevation (Absolute) (m):				
Ground floor split?	no	Ground floor elevation (Ausolide) (III). Ground floor elevation above ground (III):				
Foundation type:	strip footings	if Foundation type is other, describe:				
Floor footprint area (approx):	2.00	neight from ground to level of uppermost seismic mass (for IEP only) (m):	1005 1070			
Age of Building (years):	37	Date of design:	1965-1976			
Strengthening present?	no	If so, when (year)?				
Use (ground floor):	other (specify)	And what load level (%g)? Brief strengthening description:				
Use (upper floors): Use notes (if required):	Carport (4 No. car spaces)					
Importance level (to NZS1170.5):	IL1					
Gravity Structure Gravity System:	frame system					
Roof:	timber framed	rafter type, purlin type and cladding slab thickness (mm)	100			
Beams:	other (note)	twoicel dimensions (mm y mm)	50 mm OD pipe posts			
Walls:	partially filled concrete masonry	thickness (mm)	200			
Lateral load resisting structure		Note: Define a low or discusses the state total low attack of well at another (m)				
Lateral system along: Ductility assumed, µ:	partially filled CMU 1.25	detailed report!	12			
Period along: Total deflection (ULS) (mm):	0.40	#### enter height above at H31 estimate or calculation? estimate or calculation?	estimated			
maximum interstorey deflection (ULS) (mm):		estimate or calculation?				
Lateral system across:	partially filled CMU	note total length of wall at ground (m):	Out-of-plane (12 m length, 200 mm thick)			
Ductility assumed, µ:	1.25	#### enter height above at H31 estimate or calculation?	estimated			
Total deflection (ULS) (mm):		estimate or calculation?				
Separations:						
north (mm):		leave blank if not relevant				
separations: north (mm): east (mm): south (mm): weet (mm):		leave blank if not relevant				
separations: north (mm): east (mm): south (mm): west (mm):		leave blank if not relevant				
separations: north (mm): east (mm): south (mm): west (mm): <u>Non-structural elements</u> Stairs: Vital inte date:		leave blank if not relevant				
Separations: north (mm): east (mm): south (mm): west (mm): <u>Non-structural elements</u> Stairs: Wal cladding: Roof Cladding:	Metal	leave blank if not relevant				
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Glazing: Cellings Cellings	Metal plaster, fixed	leave blank if not relevant				
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Ceilings: Services(list):	Metal plaster, fixed	leave blank if not relevant				
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Ceilings: Services(ist): Available documentation	Metal plaster, fixed	leave blank if not relevant describe				
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural	Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976			
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Electrical	none partial none none none none none none none non	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976			
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Cellings: Services(ist): Available documentation Architectural Structural Electrical Geotech report	Metal plaster, fixed none partial none none none none	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976			
Separations: north (mm): east (mm): south (mm): west (mm): Non-structural elements Wall cladding: Roof Cladding: Celings: Services(ist): Available documentation Architectural Electrical Geotech report Damage	Netal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976			
Separations: north (nm): east (nm): south (nm): west (nm): Non-structural elements Val cladding: Roof Cladding: Celings: Services(st): Available documentation Architectural Geotech report Damage Site: (refer DE Table 4-2) Site performance:	Metal plaster, fixed none partial none none none	leave blank if not relevant describe original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (nm): east (nm): south (nm): west (nm): Non-structural elements Val cladding: Roof Cladding: Celings: Services(st): Available documentation Architectural Geotech report Damage Site: (refer DEE Table 4-2) Settlement: Differential settlement: Differential settlement:	Metal plaster, fixed none partial none none none none none none	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in mi			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Glazding: Good Cladding: Services(tst): Available documentation Architectural Structural Geotech report Damage Site: Site: Site: Site performance: Uniferential settlement: Liquefactors Differential settlement: Differential settlement: Liquefactors	Metal plaster, fixed fone partial none none none	leave blank if not relevant describe original designer name/date original designer name/date	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (mm): east (mm): south (mm): west (mm): Wall cladding: Roof Cladding: Roof Cladding: Roof Cladding: Celings: Services(tst): Available documentation Architectural Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Liquefaction: Liquefact	Metal plaster, fixed none partial none none apparent none apparent	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Glazding: Glazding: Services(tst): Available documentation Architectural Structural Geotech report Damage Site: Uter DEE Table 4-2) Site performance: Lateral Spread: Differential settlement: Liquefaction: Lateral Spread: Differential settlement: Lateral Spread: Differential settlement: Lateral Spread: Ground cracks: Damage to area;	Metal plaster, fixed none partial none signt	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Glazding: Glazding: Services(tst): Available documentation Architectural Structural Geotech report Damage Site performance: Uniferential settlement: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Liquefaction: Lateral Spread: Differential settlement: Liquefaction: Liquefa	Metai plaster, fixed finone partial none none none	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Cellings: Services(tst): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: Step erformance: (refer DEE Table 4-2) Differential settlement: Liquefaction: Ufferential settlement: Liquefaction: Differential settlement: Structural Differential settlement: Liquefaction: Easter Spread: Differential settlement: Liquefaction: Easter Spread: Differential settlement: Liquefaction: Easter Spread: Differential settlement: Liquefaction: Easter Spread: Differential settlement: Liquefaction: Current Placard Status:	Metai plaster, fixed none partial none none 0-25mm none 0-25mm none paparent none apparent none apparent none apparent none apparent sight green	leave blank if not relevant describe original designer name/date original designer nam	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Roof Cladding: Roof Cladding: Services(ist): Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site performance: (refer DEE Table 4-2) Steternial settlement: Liquefaction: Calings: Services(ist): Differential settlement: Differential settlement: Liquefaction: Differential settlement: Building: Current Placard Status: Along	Metal Metal plaster, fixed	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma			
Separations: north (mm): east (mm): south (mm): west (mm): west (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Celings: Available documentation Architectural Mechanical Structural Mechanical Electrical Geotech report Steperformance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefactors: Damage Steperformance: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefactors: Damage to area: Differential settlement: Liquefactors: Damage to area: Building: Current Placard Status: Along Damage ratio: Describe (summary): Across	Metal Paster, fixed	leave blank if not relevant describe original designer name/date original designer name/date notes (if applicable); notes (if applicable)	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in ma			
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Glazding: Roof Cladding: Stairs: Valiable documentation Architectural Structural Becord Cladding: Structural Structural Mechanical Geotech report Damage Site: Site: (refer DEE Table 4-2) Stetement: Differential settlement: Liguefactors: Damage to area: Building: Current Placard Status: Along Damage rato: Describe (summary): Describe (summary): Across Damage rato:	Metal plaster, fixed none partial none none none none more none none apparent none apparent none apparent sight igreen 0%	leave blank if not relevant describe original designer name/date notes (if applicable): n	Enterprise Homes Ltd/1976			
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Stairs: Roof Cladding: Cellings: Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: Site: (refer DEE Table 4-2) Settlement: Differential settlement: Liquefactor: Liquefactor: Differential settlement: Liquefactor: Liquefactor: Settlement: Differential settlement: Liquefactor: Liquefactor: Liquefactor: Building: Current Placard Status: Along Damage rato: Describe (summary): Describe (summary): Across Damage? Diaphragms Damage?	Metal plaster, fixed none partial none none none none orgen 0-25mm none observed more han 10 m/100m² none apparent none apparent none apparent sight igreen 0% no	leave blank if not relevant describe original designer name/date original designer name/date origin	Enterprise Homes Ltd/1976			
Separations: north (mm): east (mm): south (mm): west	Metal plaster, fixed none partial none none none 0-25mm none none 0 0 0 0 0 0 0 0 0 0 0% 0% 0% 0% 0%	leave blank if not relevant describe original designer name/date original designer name/date notes (if applicable); notes (Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Roof Cladding: Roof Cladding: Structural Barning: Structural Available documentation Architectural Structural Structural Becification Architectural Cellings: Structural Barnage Structural State: Steperformance: (refer DEE Table 4-2) Settlement: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Current Placard Status: Along Damage tabit Describe (summary): Describe (summary): Across Damage rabit Describe (summary): Describe (summary): Diaphragms Damage? Pounding: Damage? <td>Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0 0% 0% 0% 0% 0% 0% 0% 0% 0%</td> <td>leave blank if not relevant describe original designer name/date notes (if applicable): notes (if a</td> <td>Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m</td>	Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0 0% 0% 0% 0% 0% 0% 0% 0% 0%	leave blank if not relevant describe original designer name/date notes (if applicable): notes (if a	Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Roof Clading: Roof Clading: Structural Barbane Structural Structural Structural Barbane Structural Structural Structural Barbane Structural Structural Structural Cellings: Structural Celores: Structural Barbane Structural Celever Structural Mechanical Geotech report Damage State: Cieffortial settiement: Liguefaction: Liguefaction: Lateral Spread: Differential settiement: Liguefaction: Lateral Spread: Differential settiement: Liguefaction: Lateral Spread: Differential settiement: Liguefaction: Liguefaction: Barage rato: Describe (summary): Across Damage rato: Describe (summary): Desc	Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0% 0% 0 0%	leave blank if not relevant describe original designer name/date notes (if applicable): notes (if applic	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Celings: Available documentation Architectural Structural Structural Barnage Structural Site: Steperformance: (refer DEE Table 4-2) Settement: Differential settement: Liguefactors: Damage State: Site: Current Placard Status: Damage to: Current Placard Status: Along Damage rato: Describe (summary): Describe (summary): Across Damage? CSWs: Damage? Pounding: Damage?	Metal plaster, fixed none partial none none none 0-25mm none none 0 0 0 0 0 0 0 0 0 0 0% <	leave blank if not relevant describe original designer name/date notes (if applicable): notes (if app	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Celings: Available documentation Architectural Structural Becrical Geotech report Structural Damage Site: Site: Steperformance: (refer DEE Table 4-2) Settlement: Differential settlement: Liguefaction: Lateral Spread: Differential lateria spread: Differential lateria spread: Differential lateria spread: Differential laterial spread: Differential laterial spread: Differential laterial spread: Differential laterial spread: Differential settiagers Damage toin: Current Placard Status: Along Damage toin: Across Damage (summary): Describe (summary): Diaphragms Damage? City:	Metal plaster, fixed none partial none none none 0-25mm none more han 10 m/100m² none apparent none apparent none apparent sight green 0% no no no	leave blank if not relevant describe original designer name/date notes (if applicable): notes (if app	Enterprise Homes Ltd/1976			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Celings: Available documentation Architectural Mechanical Electrical Geotech report Site performance: Urifer DEE Table 4-2) Setement: Differential settlement: Liguagato: Differential settlement: Lig	Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0%	leave blank if not relevant describe original designer name/date original designer name/date origi	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor s			
Separations: north (nm): east (nm): south (nm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Roof Clading: Roof Clading: Celings: Available documentation Architectural Structural Bectrical Geotech report Structural Damage Site performance: Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liguefaction: Lateral Spread: Differential lateral spread: Differential settiageread: Differential lateral spread: Differential lateral spread: Differential lateral spread: Differential lateral spread: Differential lateral spread: Differential setingeread: Damage tabo: <	Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0% <	leave blank if not relevant describe original designer name/date original designer name/date notes (f applicable): notes (f applicable):	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m Cracks in concrete floor s			
Separations: north (mm): east (mm): south (mm): west (mm): and claiding: Roof Claiding: Roof Claiding: Roof Claiding: Roof Claiding: Cellings: Services(ist): Available documentation Available documentation Architectural Structural Mechanical Electrical Geotech report Damage Site: (refer DEE Table 4-2) Site performance: Utiferential settlement: Liquefaction: Lateral Spread: Differential lateral	Metal plaster, fixed none partial none none 0-25mm none 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0% <t< td=""><td>leave blank if not relevant describe original designer name/date notes (if applicable): notes (if applicable):</td><td>Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor s</td></t<>	leave blank if not relevant describe original designer name/date notes (if applicable):	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in m Cracks in concrete floor s			
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall cladding: Roof Cladding: Roof Cladding: Roof Cladding: Available documentation Architectural Mechanical Electrical Geotech report Structural Damage Site: Site: Site performance: (refer DEE Table 4-2) Settlement: Differential settlement: Liguefaction: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential lateria spread: Differential lateria spread: Differential lateria spread: Differential settlement: Lateral Spread: Differential lateria spread: Differential lateria spread: Differential settlement: Lateral Spread: Differential lateria spread: Describe (summary): Across	Metal plaster, fixed none partial none none none 0-25mm none none 0 0 0 0 0 0 0 0 0 0 0 0 0 0%	teave blank if not relevant describe original designer name/date notes (if applicable): notes (if applicable): <t< td=""><td>Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m Cracks in concrete floor s</td></t<>	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor stab, step cracks in m Cracks in concrete floor s			
Separations: north (mm): east (mm): south (mm): Non-structural elements Stairs: Wall clading: Roof Clading: Roof Clading: Roof Clading: Roof Clading: Structural Available documentation Architectural Structural Structural Becification: Structural Structural Structural Celores: Structural Becification: Structural Celores: Structural Mechanication: Cateral Spread: Differential settlement: Liguefaction: Liguefaction: Lateral Spread: Differential settlement: Liguefaction: Lateral Spread: Differential settlement: Differential settlement: Liguefaction: Catross Damage to: Describe (summary): Damage to: Describe (summary): Describe (summary): Across Damage? Non-structural: Damage? Pounding: Damage? Non-structural: Damage? Recommendations <td>Metal plaster, fixed none partial none none 0-25mm none 0</td> <td>leave blank if not relevant describe original designer name/date original designer name/date notes (f applicable): notes (f applicable): not</td> <td>Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me</td>	Metal plaster, fixed none partial none none 0-25mm none 0	leave blank if not relevant describe original designer name/date original designer name/date notes (f applicable): notes (f applicable): not	Enterprise Homes Ltd/1976 Enterprise Homes Ltd/1976 Cracks in concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me Comparison of the concrete floor slab, step cracks in me			

EP	Use of this met	hod is not mandatory - more detailed analysis m	ay give a different answer, which wo	uld take precedence. Do not fi	II in fields if not usir	ıg IEP.
Per	riod of design of building (from above):	965-1976		hn from ab	ove: m	
Seismic Zone	e, if designed between 1965 and 1992:			not required for this age of built	ding	
				along		301055
			Period (from above): (%NBS)nom from Fig 3.3:	0.4		0.4
	Note:1 for specifically d	esign public buildings, to the code of the day: pre-19	165 = 1.25; 1965-1976, Zone A =1.33; 1	1965-1976, Zone B = 1.2; all else	1.0	
		N	Note 2: for RC buildings de ote 3: for buildings designed prior to 193	esigned between 1976-1984, use 35 use 0.8, except in Wellington (*	1.2 1.0)	
			Final (%NBS)mm	along		across
				078		078
2	2.2 Near Fault Scaling Factor		Near Fault sca	ling factor, from NZS1170.5, cl 3. along	1.6:	across
		Near Fault	scaling factor (1/N(T,D), Factor A:	#DIV/0!		#DIV/0!
2	2.3 Hazard Scaling Factor		Hazard facto	r Z for site from AS1170.5, Table Z1992, from NZS4203:1	3.3: 992	
				Hazard scaling factor, Facto	r B:	#DIV/0!
2	2.4 Return Period Scaling Factor		B	uilding Importance level (from abo	ve):	1
			Return Period Sc	aling factor from Table 3.1, Facto	rc:	007000
2	2.5 Ductility Scaling Factor	Assessed de	uctility (less than max in Table 3.2)	along		acioss
			Ductiity Scaling Factor, Factor D:	0.00		0.00
2	2.6 Structural Performance Scaling F	actor:	Sp:			
		Structural Perfe	ormance Scaling Factor Factor E:	#DIV/0!		#DIV/0!
2	2.7 Baseline %NBS. (NBS%)ь = (%NBS	S)nom x A x B x C x D x E	%NBS6:	#DIV/0!		#DIV/0!
(Global Critical Structural Weaknesses: (refer to NZSEE IEP Table 3.4)				
3	3.1. Plan Irregularity, factor A:	1				
3	3.2. Vertical irregularity, Factor B:	1				
3	3.3. Short columns, Factor C:	1	Table for selection of D1 Sep	Severe oaration 0 <sep<.005h< th=""><th>Significant .005<sep<.01h< th=""><th>Insignificant/none Sep>.01H</th></sep<.01h<></th></sep<.005h<>	Significant .005 <sep<.01h< th=""><th>Insignificant/none Sep>.01H</th></sep<.01h<>	Insignificant/none Sep>.01H
3	3.4. Pounding potential Heigh	Pounding effect D1, from Table to right	Alignment of floors within 20	0% of H 0.7	0.8	1
		Therefore, Factor D: 0	Table for Selection of D2	Severe	Significant	Insignificant/none
3	3.5. Site Characteristics	1	Sep	oaration 0 <sep<.005h< td=""><td>.005<sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<></td></sep<.005h<>	.005 <sep<.01h< td=""><td>Sep>.01H</td></sep<.01h<>	Sep>.01H
			Height difference 2 to 4	storeys 0.4 storeys 0.7	0.9	1
			Height difference < 2	storeys 1	1	1
3	3.6. Other factors, Factor F	For ≤ 3 storeys, max value =2.5, other	wise max valule =1.5, no minimum	Along		ACIOSS
		TVCH.				
	Detail Critical Structural Weaknesses: (List any:	refer to DEE Procedure section 6) Refer also	section 6.3.1 of DEE for discussion of	F factor modification for other crit	ical structural weakne	sses
	3.7. Overall Performance Achievemen	t ratio (PAR)		0.00		0.00
				#DIN//01		
				#DIV/0!		#DIV/0!
4	4.3 PAR x (%NBS)b:		PAR X Dasemine /mbb3.			#DIV/01

aurecon

Aurecon New Zealand Limited Level 2, 518 Colombo Street Christchurch 8011

PO Box 1061 Christchurch 8140 New Zealand

T +64 3 375 0761
 F +64 3 379 6955
 E christchurch@aurecongroup.com
 W aurecongroup.com

Aurecon offices are located in: Angola, Australia, Botswana, China, Ethiopia, Hong Kong, Indonesia, Lesotho, Libya, Malawi, Mozambique, Namibia, New Zealand, Nigeria, Philippines, Singapore, South Africa, Swaziland, Tanzania, Thailand, Uganda, United Arab Emirates, Vietnam.