DETAILED SEISMIC ASSESSMENT
QUANTITATIVE

364 CASHEL STREET
LINWOOD, CHRISTCHURCH 8011

GOLD COAST PROPERTIES LTD

16th April 2026 – REV A 12th May 2026
JN 260022A

Woods Mill, Level 1, 14 Wise Street, Wigram, Christchurch 8024
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1.0 EXECUTIVE SUMMARY

In response to a request by our client, Gold Coast Properties LTD as owner's representative of the building, Centraus Limited is pleased to present this report of our Detailed Seismic Assessment (DSA - Quantitative) of the commercial building located at 364 Cashel Street, Linwood, Christchurch 8011. The Assessment was performed in order to evaluate the building and determine if any seismic vulnerabilities (critical structural weaknesses) in the seismic load resisting system exist and provide recommendations for further action.

The subject site consists of a one-storey commercial warehouse building originally constructed around 1984. The building is timber framed roof supported on steel beams and concrete tilt-slab walls with a concrete slab on grade and perimeter foundation (Type C).

A Detailed Seismic Assessment (DSA) – Quantitative Method for these building was completed which concluded that the building is noted below and providing a classification of risk to the structure as outlined in the New Zealand Society of Earthquake Engineering's "Assessment and Improvement of the Structural Performances of Building in Earthquakes".

Our assessment confirms the rating of >80%NBS both Transverse and Longitudinal directions resulting in a Non-Earthquake Prone, *Low Risk* assessment, Grade A for the building. The building is currently in a sound condition and should provide full functionality of the building systems. Our review of the building has not identified any critical structural issues which could affect the seismic performance of the building.

Michael King
CMEngNZ (CPEng), IntPE (NZ), SE (Ca USA)
Senior Structural Engineer, Director

2.0 SCOPE OF ENGAGEMENT

Centraus Limited has been engaged to undertake a Detailed Seismic Assessment (DSA) of the building located at 364 Cashel Street, Linwood, Christchurch 8011. The building is a light commercial structure and is currently occupied in a business area.

This evaluation has been carried out in accordance with the "Guidance on Detailed Engineering Evaluation of Earthquake Affected Building in Canterbury" prepared by the Engineering Advisory Group; dated 1 July 2017. The assessment is made with regard to Clause B1 – Structure of the New Zealand Building Code. Specifically, section C5 and C8 has been used in this evaluation. No other building code clauses have been assessed by this report. This structural assessment is based upon review of noted materials and visual evidence and indications present at the time of inspection. The findings of this report may be subject to revision pending deterioration of elements from subsequent aftershocks or ground settlement.

As part of our assessment, we have reviewed the council records. The following item was reviewed as part of this assessment:

- Council files – 169 Files including original documents for the building at 364 Cashel Street and 364 Cashel Street.
    - Including original documents 1984

The report is provided solely for use by the owners and shall not be relied on by any other parties without written approval from Centraus Limited.

3.0 BACKGROUND INFORMATION

The building at 364 Cashel Street, Linwood, Christchurch 8011 is a one-storey concrete tilt-slab and steel framed building as a commercial structure. The roof is a lightweight steel roof supported on timber purlins supported on concrete tilt-slab walls and steel beams reportedly built in around 1984.

The subject building is positioned in a high seismic zone of the western part of Christchurch on New Zealand's South Island. We inspected the property on 15th April 2026. The building was reportedly repaired from the 2010-2011 Canterbury Earthquakes.

For purposes of this report, the property outlook onto Cashel Street is considered to be oriented North.

FIGURE 1 – BUILDING SITE LOCATION Google Earth - Copyright Reserved ©

3.1 BUILDING DESCRIPTION

The original council records were available for our review (as noted in 2.0). The site consisted of 2 conjoined buildings with 320 square metre floor plate. The building in question was reportedly designed in and built in 1984 as a mainly one-storey commercial building with warehouse and office building. The roof has steel cladding supported on timber purlins and concrete tilt-slab walls and steel beams. The ground floors are concrete slab on grade. All are supported on assumed to be supported on interior and perimeter foundations.

Our report is based upon discussions with owner's representative, and information as gathered at the site, and an independent analysis has been performed. The inspection was limited to readily accessible areas of the property only. No intrusive investigations were completed.

3.2 GRAVITY LOAD RESISTING SYSTEM

Table 1 below outlines the gravity load resisting system for the subject building.

Building Portion	Description
364 Cashel Street	The gravity load resisting system for timber purlins supported on steel beams and concrete tilt-slab walls. The steel beams and concrete tilt-slab walls are supported on assumed foundations internally and externally.

TABLE 1 – GRAVITY LOAD RESISTING SYSTEM

3.3 LATERAL LOAD RESISTING SYSTEM

A building's lateral load resisting system (LLRS) helps brace the structure against earthquake and wind loading. The longitudinal direction of the building is generally concrete tilt-slab walls inside the unit. The transverse direction is generally concrete tilt-slab walls on the building perimeter and steel beams across the interior. Seismic lateral loads are typically supported by the roof purlins and distributed to the lateral system through direct fixings of the roof framing to the supporting steel beams and concrete tilt-slab walls. The seismic loads are supported by in plane shear action through the wall panels and portal action through the steel frames to the foundations and ground below.

3.4 GEOTECHNICAL CONDITIONS AND FOUNDATION SYSTEM

The land in this area is not included in the Landcheck information as it is commercially zoned. We do not have any other geotechnical notation on the site.

Technical Category not applicable means that non-residential properties in urban areas, properties in rural areas or beyond the extent of land damage mapping, and properties in the Port Hills and Banks Peninsula have not been given a Technical Category. Normal consenting procedures will apply in these areas.

In 2019 Christchurch City Council completed a liquefaction hazard study , encompassing the Christchurch urban area, which uses the extensive information about ground conditions gathered since the 2010/11 Canterbury earthquakes and follows the most recent national liquefaction guidance. This includes an updated liquefaction vulnerability map, and an online tool which helps to visualise an area's vulnerability to liquefaction under different conditions. For details visit the CCC liquefaction information website.

A review of the site did not note any observable settlement in the area of the building, parking lots or adjacent streets. There was no evidence noted of cracking or spreading of the existing joints in the exterior paving.

The above zoning information is correct to the best of our knowledge at the time of publishing.

3.5 EARTHQUAKE DAMAGE DESCRIPTION

We reviewed the site visually in order to determine the nature and scope of the current building condition. It is our understanding that there was substantially little earthquake damage. There was reported minor cracking in the tilt slab and interior walls. During the course of our inspection, we did not observe any cracking or damages which could be considered earthquake damage that would affect the building structural capacity. It is our observation and understanding that these damages have been repaired.

4.0 QUANTITATIVE ASSESSMENT

Our evaluation of the existing structure includes an assessment of specific building characteristics as gathered at the site. We have provided a Quantitative Assessment in accordance with the New Zealand Society of Earthquake Engineers Assessment and Improvement of the Structural Performance of Buildings in Earthquakes, See Appendix B. We have reviewed the building as an individual structure built in 1984. It should be noted that this unit is adjacent to other buildings as noted in Figure 1.

In order to identify potential seismic deficiencies associated with the existing building, an analysis of key elements of the seismic force resisting system has been reviewed based on earthquake actions in accordance with the New Zealand Standard (NZS) 1170.5. Seismic vulnerabilities and Critical Structural Weaknesses (CSW's) associated with site and building characteristics have been taken into account in accordance with NZSEE's "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes".

The review concluded that the building is currently at least 80% of New Building Standard (%NBS), thus classifying structure as *Low Risk*, Grade A. The building is reviewed with a ductility of 2.0 for Concrete tilt-slab walls and steel beams. The use of this ductility value is based upon previous reviews and studies of similar building performance in previous earthquakes. It should be noted that the recommendations for new construction are to use a ductility factor of 1.25 for new design.

Using engineering judgement and acknowledging that the building is regular with redundancies of differing capacities and performance characteristics we would estimate a combined building rating to be estimated as a central risk estimate. This results in an overall rating of 80%NBS resulting in Grade A as outlined in the New Zealand Society of Earthquake Engineering's "Assessment and Improvement of the Structural Performances of Building in Earthquakes".

Table 2.1: Grading system for earthquake risk

Percentage of New Building Standard (%NBS)	Letter grade	Relative risk (approx)	NZS 4203: 1976 or better	1965–76 No CSWs	1935–65 No CSWs	2/3 Chapter 8	Buildings with CSWs
>100	A+	< 1 time					
80–100	A	1–2 times					
67–80	B	2–5 times					
33–67	C	5–10 times					
20–33	D	10–25 times					
<20	E	> 25 times					

Note changes to the relative risk values have been made to line up with the values in Table C4.4.

Notes:

1) *%NBS* is the percentage new building standard score for a particular building
2) Values shown for *%NBS* for building groups are indicative only and will vary with location, assessed ductility, features. Many buildings may have been designed for more than the minimum requriements of the Standards of the day.
3) Letter grade is an indicator of likely performance in earthquake.
4) Relative risk (RR) is the ratio of probabilities that the ultimate strength will be exceeded in any given period of time, i.e. RR = (probability for existing building with *%NBS* value shown) ÷ (probability for building with 100*%NBS*).
5) CSW stands for critical structural weaknesses.

Table 2.2 NZSEE Risk Classifications and Improvement Recommendations

Description	Grade	Risk	%NBS	Existing Building Structural Performance	Improvement of Structural 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 (unless change in use) This is for each TA to decide. Improvement is not limited to 34%NBS.	100%NBS desirable. Improvement should achieve at least 67%NBS
Moderate Risk Building	B or C	Moderate	34 to 66	Acceptable legally. Improvement recommended		Not recommended. Acceptable only in exceptional circumstances
High Risk Building	D or E	High	33 or lower	Unacceptable (Improvement required under Act)	Unacceptable	Unacceptable

** Reprint from NZSEE, Assessment and Improvement of the Structural Performance of Building in Earthquakes*

4.1 CRITICAL STRUCTURAL WEAKNESS AND MITIGATION

The structural system, in our opinion, appears to be well built. At this point, we have inspected these building and original construction documents and have not identified any likely CSW areas of concern.

As the original building provide a *Low Risk* assessment the rating does not appear to need to be modified due to these items of concern as they are not earthquake prone.

5.0 CONCLUSIONS, OCCUPANCY AND RECOMMENDATIONS

The building has been designed to resist the seismic loading provided in 1984. The lateral systems provided in the building is considered to be specific engineered design. The Z factor has been modified in 2011 in the Canterbury region from 0.22 to 0.3 indicating a 27% increase in design loading. The building contains most items which have a moderate to high ductility rating and can perform satisfactorily in future seismic events.

In our estimation the concrete tilt-slab walls and steel beams provide the main seismic path which provides a relatively high ductility performance. In our opinion, the building has a rating of at least 80%NBS (New Building Standard) and therefore is not considered earthquake prone (<34%NBS) and is greater than 67%NBS. The building is noted to be very regular resulting in building which should behave in a satisfactory manner.

As the building is of *Low Risk*, the anticipated performance will behave comparable to newly constructed buildings. As the building is very regular with solid walls in the longitudinal direction and perforated walls in the transverse direction.

At this point we propose that no limitations be placed upon occupation of the building.

Appendix A: Photographs – 15th April 2026

Photo 1 – Front Elevation.


Photo 2 – External Rear Elevation on Essex.

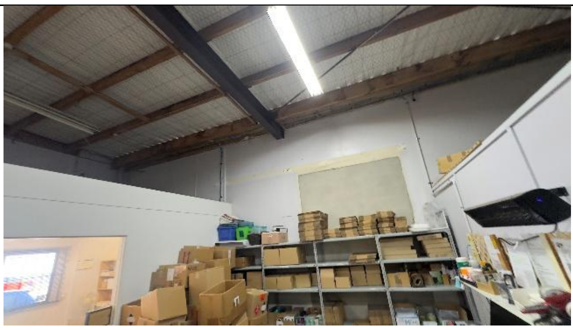
Photo 3 – Internal Warehouse.

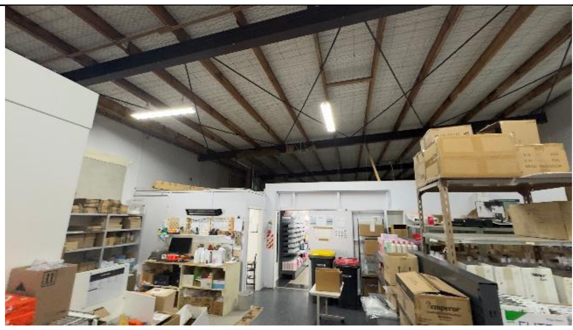
Photo 4 – Internal Warehouse.


Photo 5 – Internal Warehouse.


Photo 6 – Internal Warehouse.

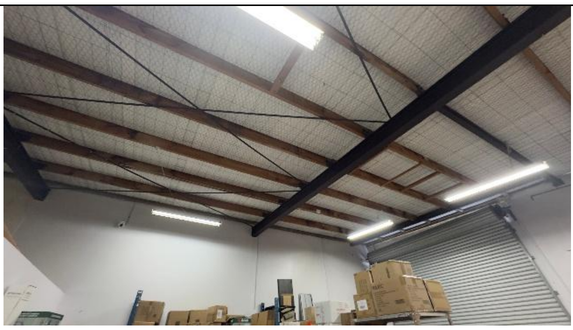
Photo 7 – Internal Warehouse.


Photo 8 – Internal Warehouse.

APPENDIX B: ASSESSMENT SUMMARY FORM

364 Cashel Street DSA Final

1. Building Information	
Building Name/ Description	364 Cashel Street
Street Address	364 Cashel Street, Hornby, Christchurch 8042
Territorial Authority	Christchurch City Council
No. of Storeys	One Storey Warehouse
Area of Typical Floor (approx.)	Approx. 320m2 of Building
Year of Design (approx.)	1984
NZ Standards designed to	See attached Centraus report dated 16th April 2026 Background
Structural System including Foundations	See attached Centraus report dated 16th April 2026 Timber Framed roof supported on Steel Beams and Concrete Tilt-slab walls
Does the building comprise a shared structural form or shares structural elements with any other adjacent titles?	No
Key features of ground profile and identified geohazards	See attached Centraus report dated 16th April 2026
Previous strengthening and/ or significant alteration	See attached Centraus report dated 16th April 2026 None noted
Heritage Issues/ Status	None Noted
Other Relevant Information	Not Applicable

Assessment Summary Report
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2. Assessment Information	
Consulting Practice	Centraus Structural Engineers
CPEng Responsible, including: • Name • CPEng number • A statement of suitable skills and experience in the seismic assessment of existing buildings[1]	Michael King CPEng 1022085 30 years experience working with timber, concrete and reinforced and unreinforced Tilt-slab buildings in high seismic areas – California, Haiti and New Zealand.
Documentation reviewed, including: • date/ version of drawings/ calculations[2] • previous seismic assessments	See attached Centraus report dated 16th April 2026, Background
Geotechnical Report(s)	None Noted
Date(s) Building Inspected and extent of inspection	Physical inspection was undertaken on-site on 15th April 2026 and discussions with owner and review of Council Files.
Description of any structural testing undertaken and results summary	None Noted
Previous Assessment Reports	None Noted
Other Relevant Information	None Noted

[1] This should include reference to the engineer's Practice Field being in Structural Engineering, and commentary on experience in seismic assessment and recent relevant training
[2] Or justification of assumptions if no drawings were able to be obtained

3. Summary of Engineering Assessment Methodology and Key Parameters Used	
Occupancy Type(s) and Importance Level	Importance Level 2
Site Subsoil Class	Type D
For an ISA:	N/A
Summary of how Part B was applied, including: • Key parameters such as μ, S_p and F factors • Any supplementary specific calculations	N/A
For a DSA:	Yes
Summary of how Part C was applied, including: • the analysis methodology(s) used from C2 • other sections of Part C applied	$\mu = 2.0$ – For Concrete tilt-slab walls and steel beams
Other Relevant Information	None

4. Assessment Outcomes		
Assessment Status (Draft or Final)	Final	
Assessed *%NBS* Rating	>80%NBS	
Seismic Grade and Relative Risk (from Table A3.1)	Grade A	
For an ISA:		
Describe the Potential Critical Structural Weaknesses	None Noted	
Does the result reflect the building's expected behaviour, or is more information/ analysis required?	Yes	
If the results of this ISA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified:	**Engineering Statement of Structural Weaknesses and Location** N/A	***Mode of Failure and Physical Consequence* Statement(s)** N/A
For a DSA:	Yes	
Comment on the nature of Secondary Structural and Non-structural elements/ parts identified and assessed	No issues were found regarding structural and non-structural elements.	
Describe the Governing Critical Structural Weakness	No critical structural weaknesses noted.	
If the results of this DSA are being used for earthquake prone decision purposes, and elements rating <34%NBS have been identified (including Parts)[3]:	**Engineering Statement of Structural Weaknesses and Location** N/A	***Mode of Failure and Physical Consequence* Statement(s)** N/A
Recommendations (*optional for EPB purposes*)	None noted	

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

APPENDIX C: ASSESSMENT TEMPLATE

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Initial Evaluation Procedure (IEP) Assessment - Gold Coast Properties LTD **Page 1**

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

Street Number & Name:	364 Cashel Street	Job No.:	260022A
AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-1 Initial Evaluation Procedure Step 1

Step 1 - General Information

1.1 Photos (attach sufficient to describe building)

NOTE: THERE ARE MORE PHOTOS ON PAGE 1a ATTACHED

1.2 Sketches (plans etc, show items of interest)

NOTE: THERE ARE MORE SKETCHES ON PAGE 1a ATTACHED

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

1.4 Note information sources Tick as appropriate

Visual Inspection of Exterior	☑	Specifications	☐
Visual Inspection of Interior	☑	Geotechnical Reports	☐
Drawings (note type)	☑	Other (list)	☐

Various drawings from 1984 - 10 Pages

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Street Number & Name:	364 Cashel Street	Job No.:	260022A
AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2

Step 2 - Determination of *(%NBS)* $_b$
(Baseline *(%NBS)* for particular building - refer Section B5)
2.1 Determine nominal *(%NBS)* = *(%NBS)* $_{nom}$

	Longitudinal	Transverse
a) Building Strengthening Data		
Tick if building is known to have been strengthened in this direction	☐	☐
If strengthened, enter percentage of code the building has been strengthened to	N/A	N/A

b) Year of Design/Strengthening, Building Type and Seismic Zone

	Longitudinal	Transverse
Pre 1935	○	○
1935-1965	○	○
1965-1976	○	○
1976-1984	○	○
1984-1992	◉	◉
1992-2004	○	○
2004-2011	○	○
Post Aug 2011	○	○
Building Type:	**Not applicable**	**Not applicable**
Seismic Zone:	Zone B	Zone B

c) Soil Type

	Longitudinal	Transverse
From NZS1170.5:2004, Cl 3.1.3 :	D Soft Soil	D Soft Soil
From NZS4203:1992, Cl 4.6.2.2 : **(for 1992 to 2004 and only if known)**	**Not applicable**	**Not applicable**

d) Estimate Period, *T*
Comment:

		Longitudinal	Transverse
h_n =		3	3 m
A_c =		1.00	1.00 m^2
Moment Resisting Concrete Frames:	$T = \max\{0.09h_n^{0.75}, 0.4\}$	○	○
Moment Resisting Steel Frames:	$T = \max\{0.14h_n^{0.75}, 0.4\}$	○	○
Eccentrically Braced Steel Frames:	$T = \max\{0.08h_n^{0.75}, 0.4\}$	○	○
All Other Frame Structures:	$T = \max\{0.06h_n^{0.75}, 0.4\}$	○	○
Concrete Shear Walls	$T = \max\{0.09h_n^{0.75}/A_c^{0.5}, 0.4\}$	◉	◉
Masonry Shear Walls:	$T \leq 0.4$sec	○	○
User Defined (input Period):		○	○
T:		0.40	0.40

Where h_n = height in metres from the base of the structure to the uppermost seismic weight or mass.

			Longitudinal	Transverse
e) Factor A:	Strengthening factor determined using result from (a) above (set to 1.0 if not strengthened)	**Factor A:**	1.00	1.00
f) Factor B:	Determined from NZSEE Guidelines Figure 3A.1 using results (a) to (e) above	**Factor B:**	0.17	0.17
g) Factor C:	For reinforced concrete buildings designed between 1976-84 Factor C = 1.2, otherwise take as 1.0.	**Factor C:**	1.00	1.00
h) Factor D:	For buildings designed prior to 1935 Factor D = 0.8 except for Wellington and Napier (1931-1935) where Factor D may be taken as 1.0, otherwise take as 1.0.	**Factor D:**	1.00	1.00
***(%NBS)* $_{nom}$ = AxBxCxD**		***(%NBS)* $_{nom}$**	17%	17%

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AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-2 Initial Evaluation Procedure Step 2 continued

2.2 Near Fault Scaling Factor, Factor E
If $T \leq 1.5$sec, Factor E = 1

		Longitudinal	Transverse
a) Near Fault Factor, $N(T,D)$ (from NZS1170.5:2004, Cl 3.1.6)	N(T,D):	1	1
b) Factor E = 1/N(T,D)	Factor E:	1.00	1.00

2.3 Hazard Scaling Factor, Factor F
a) Hazard Factor, Z, for site
Location: Christchurch — **Refer right for user-defined locations**

Z = 0.3 (from NZS1170.5:2004, Table 3.3)
Z_{1992} = 0.8 (NZS4203:1992 Zone Factor from accompanying Figure 3.5(b))
Z_{2004} = 0.22 (from NZS1170.5:2004, Table 3.3)

b) Factor F
For pre 1992 = $1/Z$
For 1992-2011 = Z_{1992}/Z
For post 2011 = Z_{2004}/Z

		Longitudinal	Transverse
	Factor F:	3.33	3.33

2.4 Return Period Scaling Factor, Factor G

		Longitudinal	Transverse
a) Design Importance Level, I (Set to 1 if not known. For buildings designed prior to 1965 and known to be designed as a public building set to 1.25. For buildings designed 1965-1976 and known to be designed as a public building set to 1.33 for Zone A or 1.2 for Zone B. For 1976-1984 set I value.)	I =	1	1
b) Design Risk Factor, R_o (set to 1.0 if other than 1976-2004, or not known)		Not known	Not known
	R_o =	1	1
c) Return Period Factor, R (from NZS1170.0:2004 Building Importance Level)	Choose Importance Level	○1 ◉2 ○3 ○4	○1 ◉2 ○3 ○4
	R =	1.0	1.0
d) Factor G = IR_o/R	Factor G:	1.00	1.00

2.5 Ductility Scaling Factor, Factor H

		Longitudinal	Transverse
a) Available Displacement Ductility Within Existing Structure. Comment:	μ =	2.00	2.00
b) Factor H		k_μ	k_μ
For pre 1976 (maximum of 2)	=	1.57	1.57
For 1976 onwards	=	1	1
	Factor H:	1.00	1.00

(where kμ is NZS1170.5:2004 Inelastic Spectrum Scaling Factor, from accompanying Table 3.3)

2.6 Structural Performance Scaling Factor, Factor I

		Longitudinal	Transverse
a) Structural Performance Factor, S_p (from accompanying Figure 3.4). Tick if light timber-framed construction in this direction		☐	☐
	S_p =	0.70	0.70
b) Structural Performance Scaling Factor = $1/S_p$	Factor I:	1.43	1.43

Note Factor B values for 1992 to 2004 have been multiplied by 0.67 to account for Sp in this period

	Longitudinal	Transverse
2.7 Baseline %NBS for Building, $(\%NBS)_b$ (equals $(\%NBS)_{nom}$ x E x F x G x H x I)	79%	79%

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Street Number & Name:	364 Cashel Street	Job No.:	260022A
AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

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

a) Longitudinal Direction

potential CSWs — **Effect on Structural Performance** (Choose a value - Do not interpolate) — **Factors**

3.1 Plan Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor A: 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor B: 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor C: 1.0
Comment

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

a) Factor D1: - Pounding Effect

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

Factor D1 For Longitudinal Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Longitudinal Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	◉ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	○ 1

Comment

Factor D: 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor E: 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characteristics of the building*
For ≤ 3 storeys - Maximum value 2.5 otherwise - Maximum value 1.5. No minimum. — Factor F: 1.0
Record rationale for choice of Factor F:
Building is very regular. Concrete Tilt-slab walls

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

PAR — **Longitudinal**: **1.00**

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Initial Evaluation Procedure (IEP) Assessment - Gold Coast Properties LTD Page 5

Street Number & Name:	364 Cashel Street	Job No.:	260022A
AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-3 Initial Evaluation Procedure Step 3

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

b) Transverse Direction

Factors

potential CSWs — **Effect on Structural Performance** (Choose a value - Do not interpolate)

3.1 Plan Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor A 1.0
Comment

3.2 Vertical Irregularity
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor B 1.0
Comment

3.3 Short Columns
Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor C 1.0
Comment

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

a) Factor D1: - Pounding Effect

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

Factor D1 For Transverse Direction: 1.0

Table for Selection of Factor D1	Severe	Significant	Insignificant
Separation	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Alignment of Floors within 20% of Storey Height	○ 1	○ 1	◉ 1
Alignment of Floors not within 20% of Storey Height	○ 0.4	○ 0.7	○ 0.8

Comment

b) Factor D2: - Height Difference Effect

Factor D2 For Transverse Direction: 1.0

Table for Selection of Factor D2	Severe	Significant	Insignificant
	0<Sep<.005H	.005<Sep<.01H	Sep>.01H
Height Difference > 4 Storeys	○ 0.4	○ 0.7	◉ 1
Height Difference 2 to 4 Storeys	○ 0.7	○ 0.9	○ 1
Height Difference < 2 Storeys	○ 1	○ 1	○ 1

Comment

Factor D 1.0

3.5 Site Characteristics - *Stability, landslide threat, liquefaction etc as it affects the structural performance from a life-safety perspective*

Effect on Structural Performance ○ Severe ○ Significant ◉ Insignificant — Factor E 1.0
Comment

3.6 Other Factors - *for allowance of all other relevant characterstics of the building*

For ≤ 3 storeys - Maximum value 2.5
otherwise - Maximum value 1.5.
No minimum.

Factor F 1.00

Record rationale for choice of Factor F:
Building is very regular. Concrete Tilt-slab walls

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

PAR
Transverse 1.00

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Initial Evaluation Procedure (IEP) Assessment - Gold Coast Properties LTD **Page 6**

Street Number & Name:	364 Cashel Street	Job No.:	260022A
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City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-4 Initial Evaluation Procedure Steps 4, 5, 6 and 7

Step 4 - Percentage of New Building Standard *(%NBS)*

		Longitudinal	Transverse
4.1	**Assessed Baseline *%NBS (%NBS)*$_b$** (from Table IEP - 1)	79%	79%
4.2	**Performance Achievement Ratio (PAR)** (from Table IEP - 2)	1.00	1.00
4.3	**PAR x Baseline *(%NBS)*$_b$**	80%	80%
4.4	**Percentage New Building Standard *(%NBS)* - Seismic Rating** (Use lower of two values from Step 4.3)		80%

Step 5 - Is *%NBS* < 34? NO

Step 6 - Potentially Earthquake Risk (is *%NBS* < 67)? NO

Step 7 - Provisional Grading for Seismic Risk based on IEP

Seismic Grade A

Additional Comments (items of note affecting IEP based seismic rating)

Relationship between Grade and *%NBS* :

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Initial Evaluation Procedure (IEP) Assessment - Gold Coast Properties LTD **Page 7**

Street Number & Name:	364 Cashel Street	Job No.:	260022A
AKA:		By:	MJK
Name of building:	1984	Date:	16 04 2026
City:	Linwood, Christchurch 8013	Revision No.:	A

Table IEP-5 Initial Evaluation Procedure Step 8

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

8.1	**Number of storeys above ground level**	1
8.2	**Presence of heavy concrete floors and/or concrete roof? (Y/N)**	N

Potential Severe Structural Weaknesses (SSWs):

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

Occupancy not considered to be significant - no further consideration required

Risk not considered to be significant - no further consideration required

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

1. None identified

2. Weak or soft storey (except top storey)

3. Brittle columns and/or beam-column joints the deformations of which are not constrained by other structural elements

4. Flat slab buildings with lateral capacity reliant on low ductility slab-to-column connections

5. No identifiable connection between primary structure and diaphragms

6. Ledge and gap stairs

IEP Assessment Confirmed by __________ **Signature**

Michael King **Name**

1022085 **CPEng. No**

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IEP Spreadsheet Version 3.0 - 28/06/2017

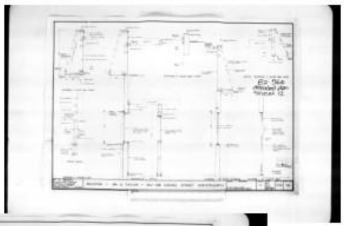
Initial Evaluation Procedure (IEP) Assessment - Gold Coast Properties LTD **Page 1a**

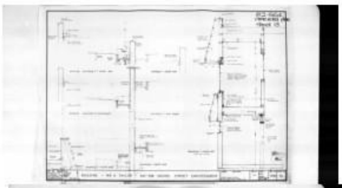
Street Number & Name:	**364 Cashel Street**	**Job No.:**	**260022A**
AKA:		**By:**	**MJK**
Name of building:	**1984**	**Date:**	**16 04 2026**
City:	**Linwood, Christchurch 8013**	**Revision No.:**	**A**

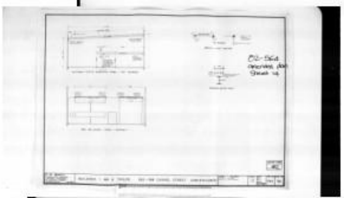
Table IEP-1a Additional Photos and Sketches

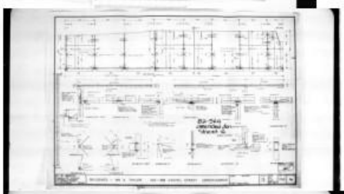
Add any additional photographs, notes or sketches required below:

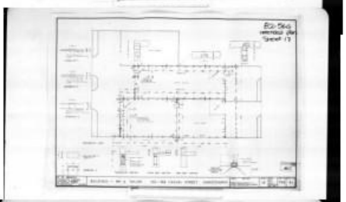
Note: print this page separately

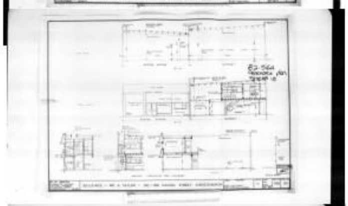


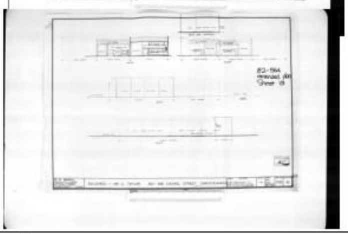


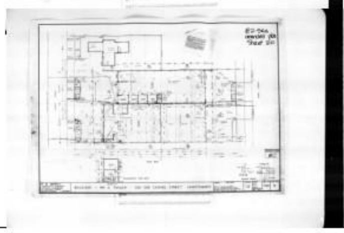












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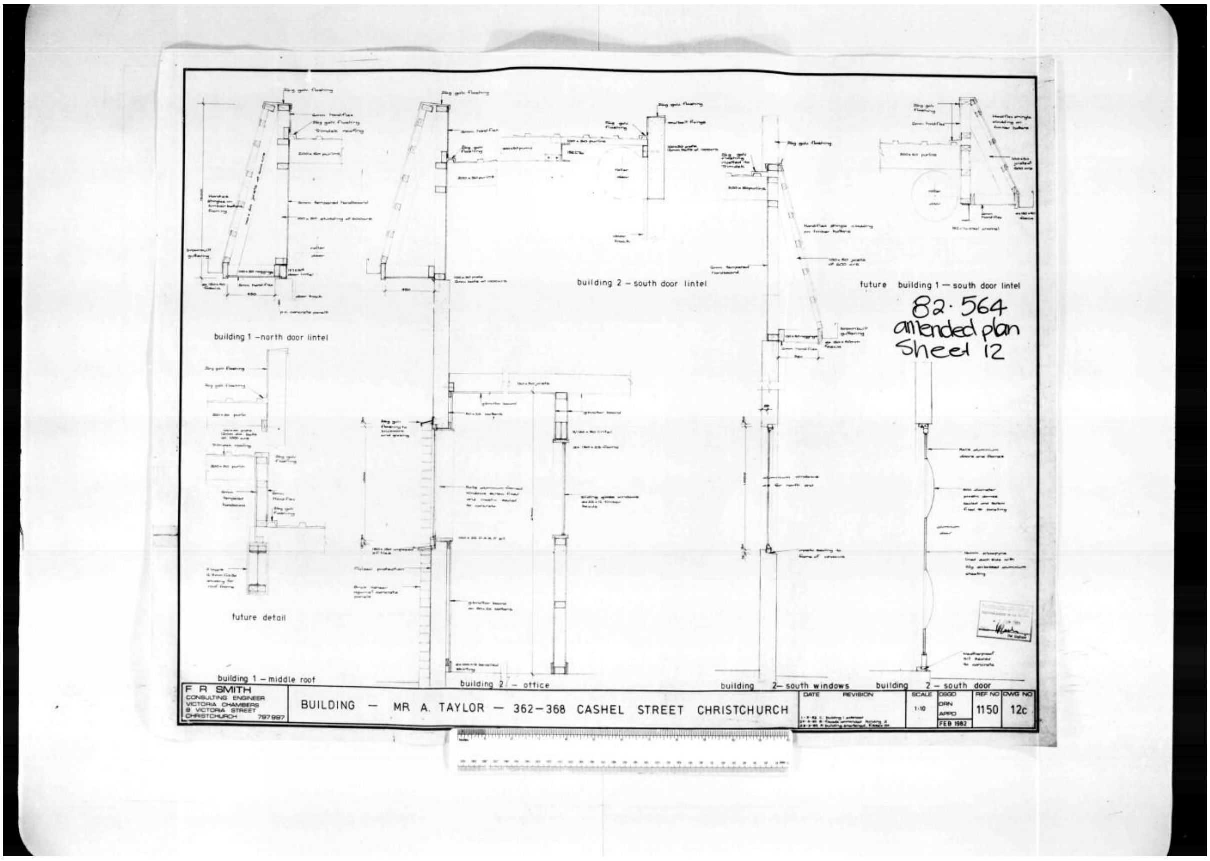
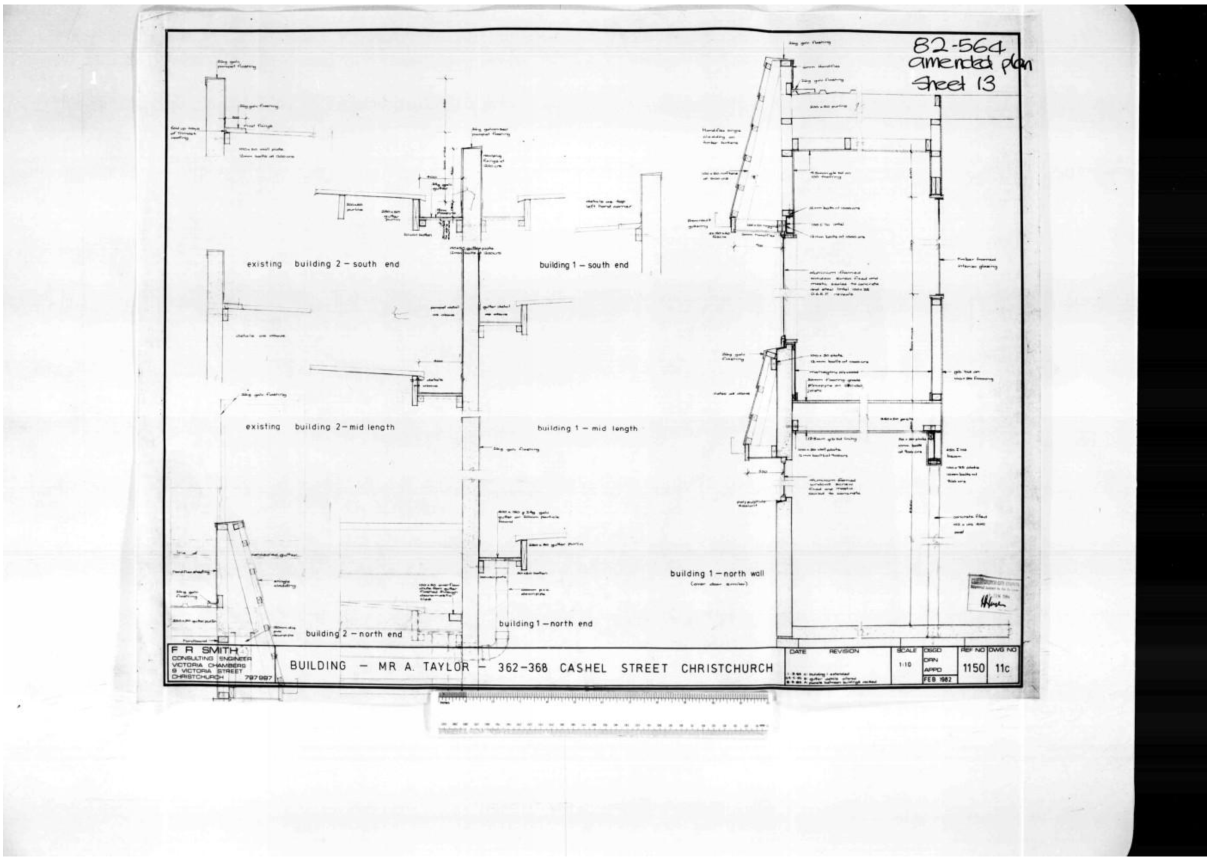
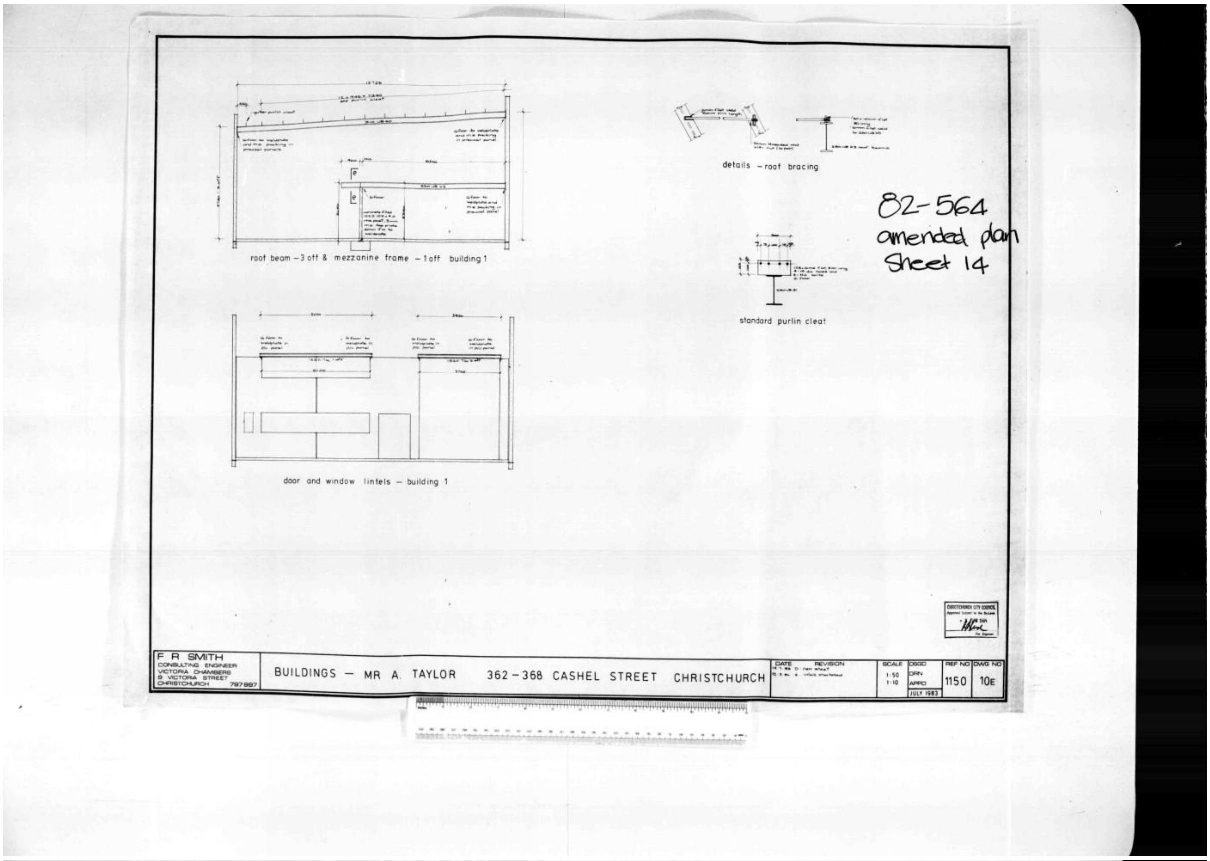
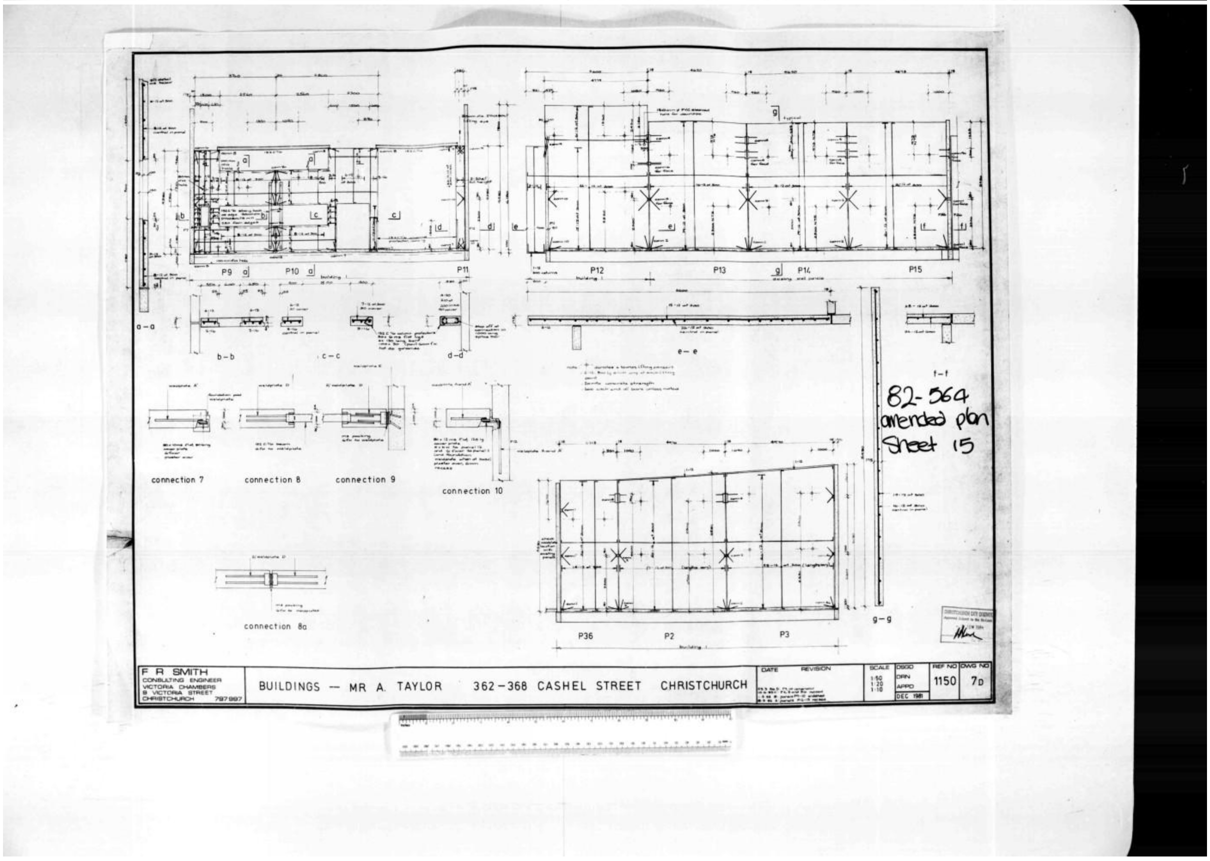
Appendix D: Original Plans






roof beam – 3 off & mezzanine frame – 1 off building 1
details – roof bracing
82-564
amended plan
Sheet 14
standard purlin cleat
door and window lintels – building 1
F R SMITH
CONSULTING ENGINEER
VICTORIA CHAMBERS
8 VICTORIA STREET
CHRISTCHURCH 797 887
BUILDINGS – MR A. TAYLOR 362–368 CASHEL STREET CHRISTCHURCH
1150
10E
JULY 1983


82-564
amended plan
Sheet 15
connection 7
connection 8
connection 9
connection 10
connection 8a
a – a
b – b
c – c
d – d
e – e
f – f
g – g
P9
P10
P11
P12
P13
P14
P15
P36
P2
P3
F R SMITH
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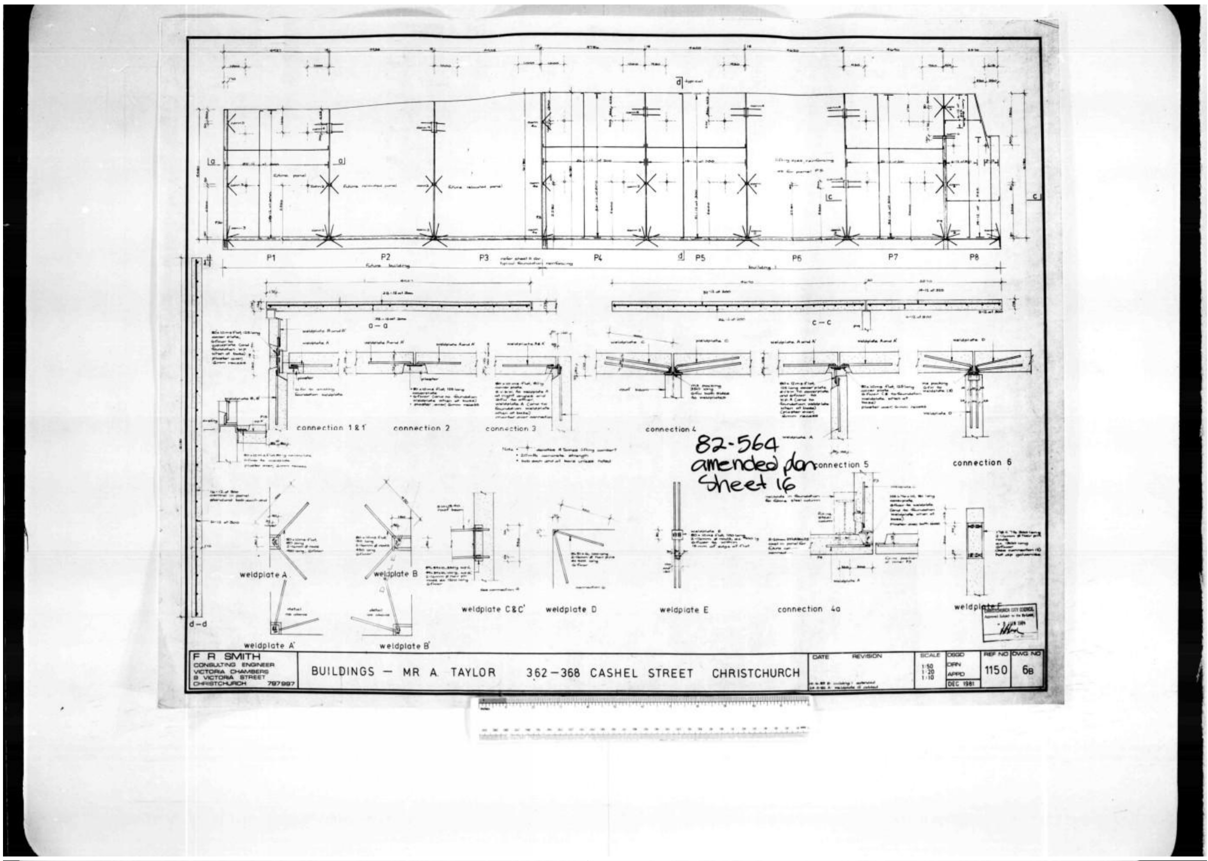
CHRISTCHURCH 797 887
BUILDINGS – MR A. TAYLOR 362–368 CASHEL STREET CHRISTCHURCH
1150
7D
DEC 1981


P1
P2
P3
P4
P5
P6
P7
P8
a – a
c – c
d – d
connection 1 & 1'
connection 2
connection 3
connection 4
connection 5
connection 6
connection 4a
82-564
amended plan
Sheet 16
weldplate A
weldplate B
weldplate A'
weldplate B'
weldplate C&C'
weldplate D
weldplate E
weldplate F
F R SMITH
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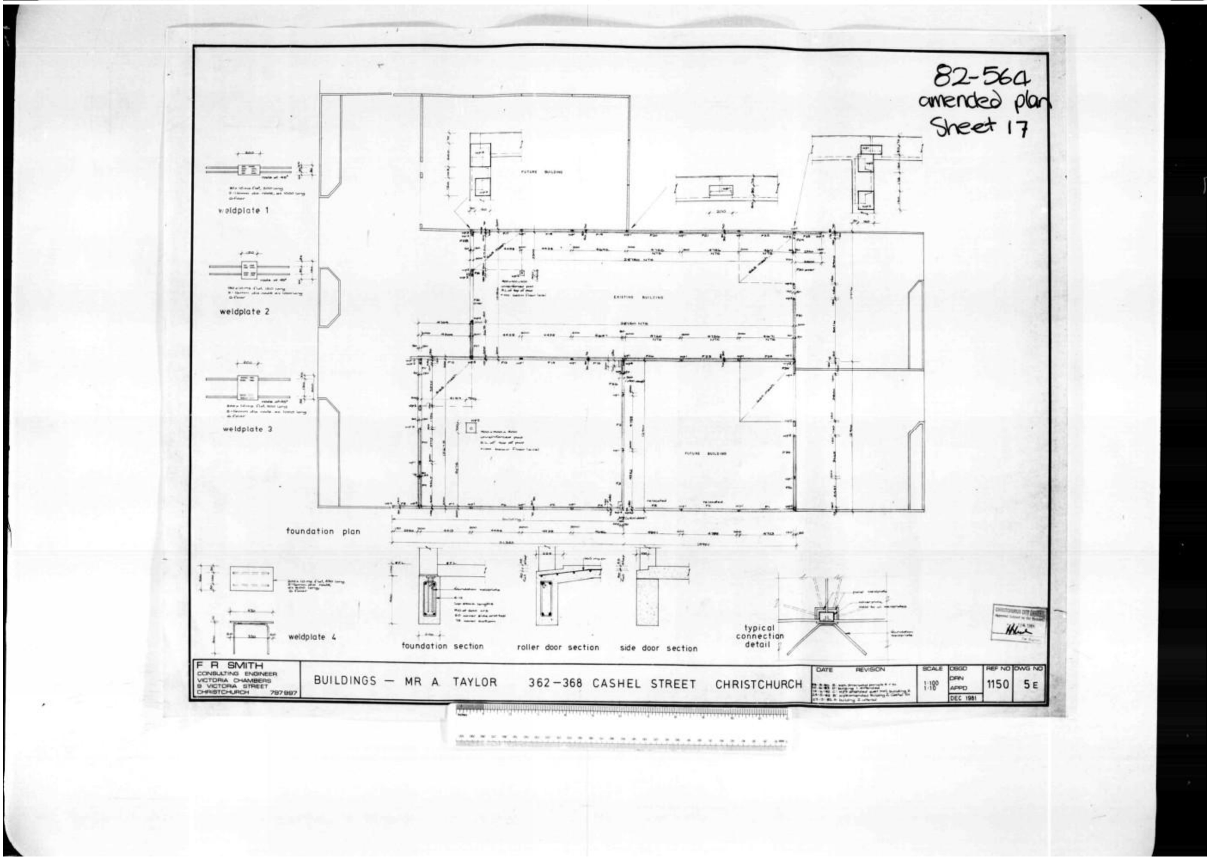
VICTORIA CHAMBERS
8 VICTORIA STREET
CHRISTCHURCH 797997
BUILDINGS — MR A. TAYLOR 362 – 368 CASHEL STREET CHRISTCHURCH
DATE
REVISION
SCALE
1:50
1:20
1:10
CKGD
DRN
APPD
DEC 1981
REF NO
1150
DWG NO
6B


82-564
amended plan
Sheet 17
weldplate 1
weldplate 2
weldplate 3
weldplate 4
FUTURE BUILDING
EXISTING BUILDING
foundation plan
foundation section
roller door section
side door section
typical connection detail
F R SMITH
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VICTORIA CHAMBERS
8 VICTORIA STREET
CHRISTCHURCH 797997
BUILDINGS — MR A. TAYLOR 362 – 368 CASHEL STREET CHRISTCHURCH
DATE
REVISION
SCALE
1:100
1:10
CKGD
DRN
APPD
DEC 1981
REF NO
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DWG NO
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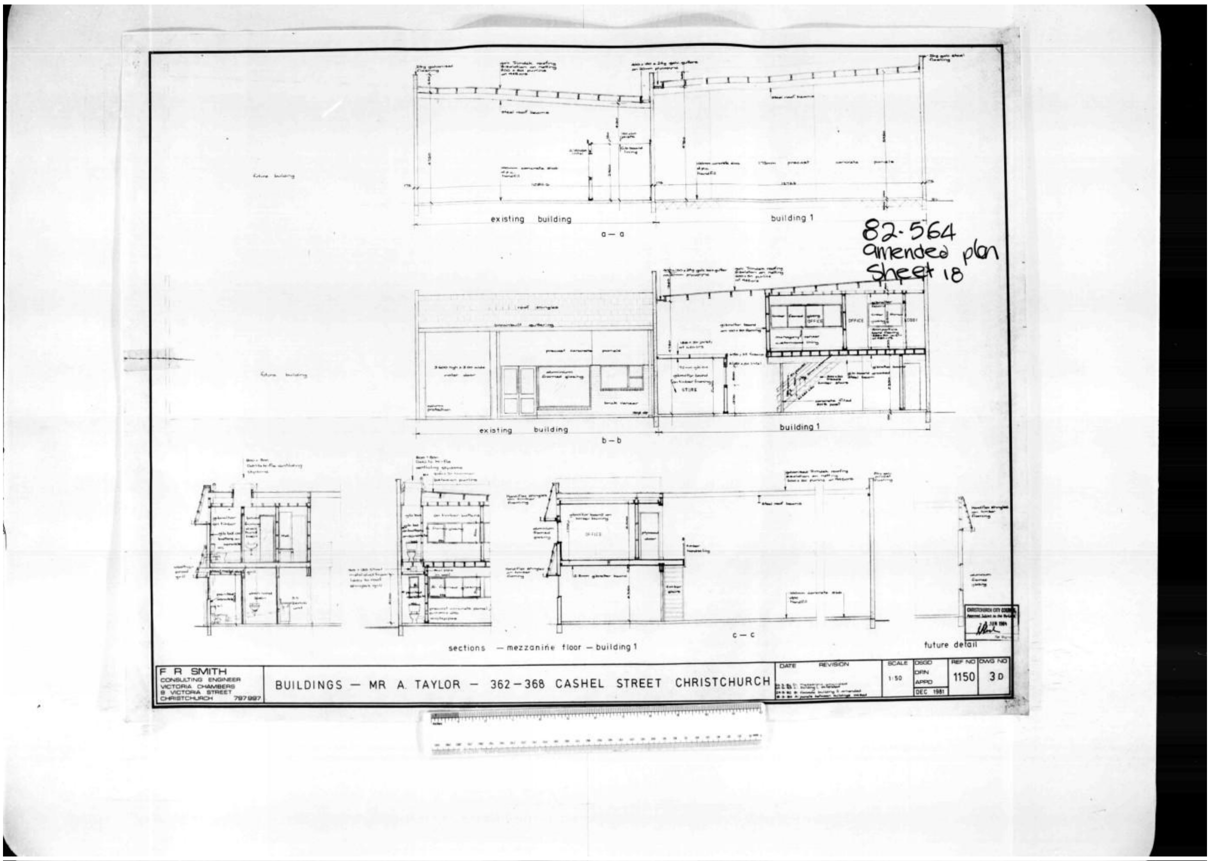
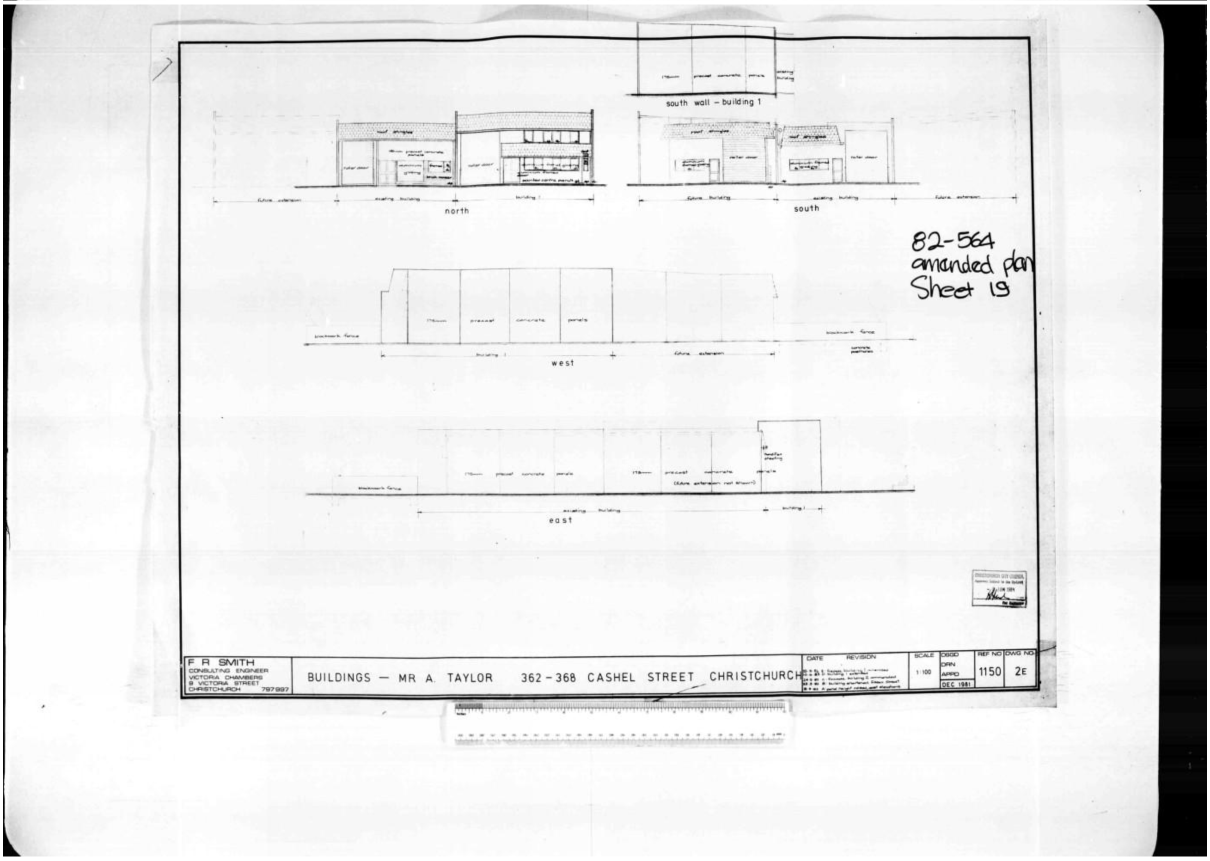
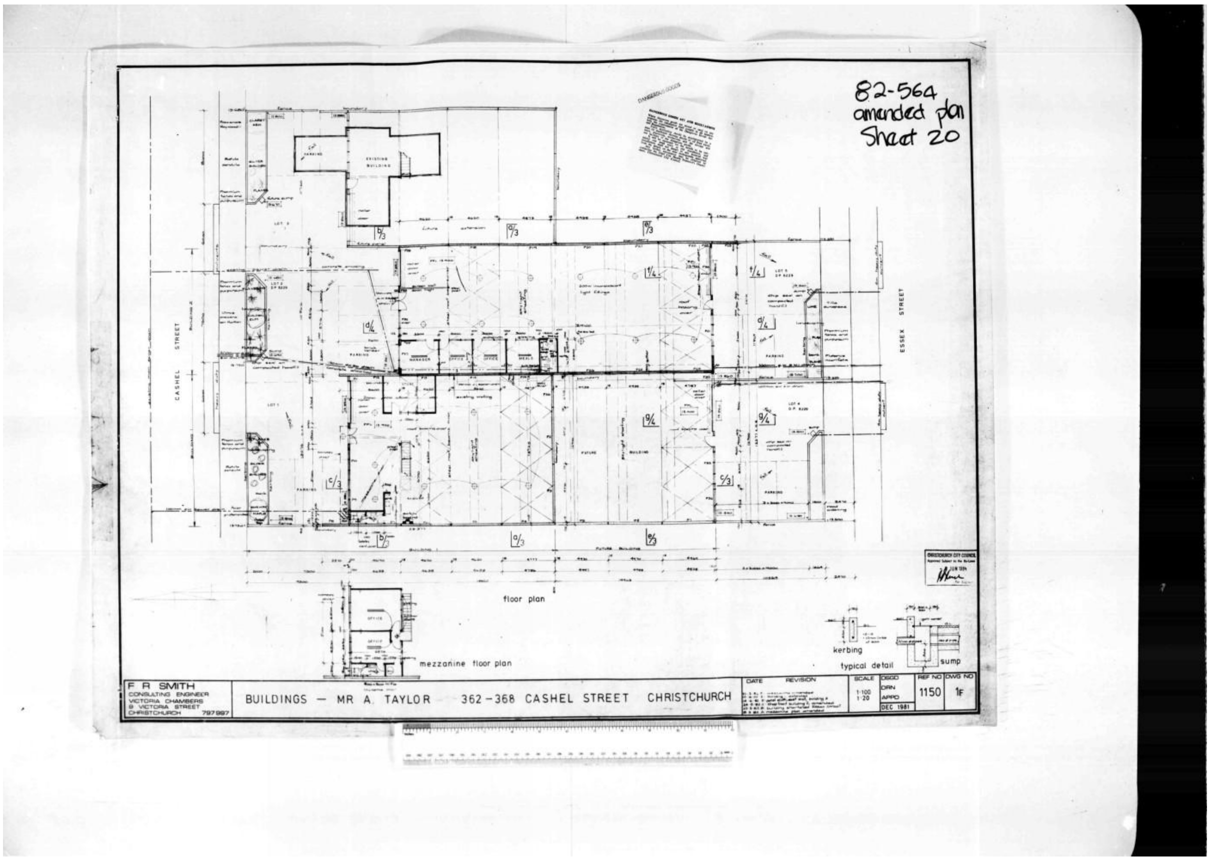

existing building
building 1
a — a
82-564
amended plan
Sheet 18
existing building
building 1
b — b
sections — mezzanine floor — building 1
c — c
future detail
F R SMITH
CONSULTING ENGINEER
VICTORIA CHAMBERS
8 VICTORIA STREET
CHRISTCHURCH 797997
BUILDINGS — MR A TAYLOR — 362—368 CASHEL STREET CHRISTCHURCH
1:50
DEC 1981
1150
3D


south wall — building 1
north
south
82-564
amended plan
Sheet 19
west
east
F R SMITH
CONSULTING ENGINEER
VICTORIA CHAMBERS
8 VICTORIA STREET
CHRISTCHURCH 797997
BUILDINGS — MR A TAYLOR 362 — 368 CASHEL STREET CHRISTCHURCH
1:100
DEC 1981
1150
2E


82-564
amended plan
Sheet 20
CASHEL STREET
ESSEX STREET
floor plan
mezzanine floor plan
kerbing
typical detail
sump
F R SMITH
CONSULTING ENGINEER
VICTORIA CHAMBERS
9 VICTORIA STREET
CHRISTCHURCH
BUILDINGS — MR A. TAYLOR 362-368 CASHEL STREET CHRISTCHURCH
DEC 1981
1150
1F