

SEISMIC RISK BUILDINGS - SURVEY

GENERAL

Date Inspected: 25/11/91 File No: B0/40/79/255-271  
 Address of Building: 255-271 Monckton St Carr March 2 (Barnegat)  
 Legal Description of Site: Pt 608  
 Name of Owner: \_\_\_\_\_  
 Address of Owner: \_\_\_\_\_  
 Principal Tenants: MA Travel Centre / Hays & Ball / Cafe delight / McComer Pasture  
 Occupancy: (please tick) 8 hours  24 hours  5 days  7 days   
 Use (eg. Office, Workroom, Factory) Commercial, Storage, Other):  Commercial

STRUCTURE

Date of Construction: 1907  
 Building Dimensions: Width: \_\_\_\_\_ Length: \_\_\_\_\_ Height: \_\_\_\_\_

Number of Storeys: 2  
 Foundation Type: Strip Footing  Raft  Piles   
 Structural System: Frame  Shear Wall  LBM B&C   
 Building: Original Form  Minor Alterations  Substantial Alterations   
 Floor: FC  Wood  Eff Diaph  Non Eff   
 Roof Coverings: Concrete  Asphalt  Galv Iron  Corr Asbestos  Tiles (new)   
 Number of Stairs: 2  
 Type: landing  Wood  Steel  FC   
 Ground Conditions: Rock  Gravel  Sand / silt  Clay  Fill   
 Roof: Pitched  Flat   
 Chimneys: \_\_\_\_\_  
 Roof Diaphragm: Effective  Non Effective   
 Number of Lifts: \_\_\_\_\_  
 Open  Enclosed

Bearing Walls: Brick Wall Bands: Yes/No  
 Street Walls: Brick Column Continuity: Yes/No  
 Parapets: removed 1976  
 Verandahs: No  
 Appendages: numerous signs - some o/s brickwork  
 Wheelchair Access: Yes

NON STRUCTURAL

Partitions: Timber  
 Ceilings: various

DAMAGE

Cracked Walls  Lateral Displacement  Settlement   
 Remarks: O.K.

STRUCTURAL

Poor  Fair  Good   
 Hazards: \_\_\_\_\_

GENERAL Secured 1976, (interim)  
 strengthening done in 1997.  
 parapet removed B.P # 74/503.

NUMERICAL RATING

Maintenance	1
Storeys	1
Appendages	1
Public Access	2
Wall Continuity	1
Time Occupied	1
Internal Walls	2
Persons Occupied	1
Foundations	1
Date Built	2
Total	13 B.



TABLE 1 BUILDING ASSESSMENT

	Numerical Rating		
	2	1	0
General Standard of Maintenance	Poor	Fair	Good
Appendages on Street Frontage	Significant amounts of masonry	Minor	Nil
Continuity of External Walls	No continuity	Reasonable continuity	Full Structural Continuity
Effectiveness of Internal Frames	Non-existent	Some Moment Resistance	Fully Effective
Foundation Conditions	Bearing Capacity less than $\frac{1}{2}$ T/ft <sup>2</sup>	Gravels etc. Bearing $>\frac{1}{2}$ T/ft <sup>2</sup>	Rock
Number of Storeys	More than 4	2 to 4	1
Public Assessibility	Central City	Suburban Commercial /Industrial	Residential
Time Building Occupied	More than 50 hours/week	More than 8 less than 50 hours/week	Less than 8 hours/week
Persons in Building When Occupied	More than 4 persons per 1,000 sq. ft.	More than 2 less than 4 persons per 1,000 sq. ft.	Less than 2 persons per 1,000 sq. ft.
Date of Construction	Before 1920	Between 1920 and 1935	After 1935

TABLE 2 BUILDING CLASSIFICATION &amp; REQUIRED ACTION

Total Numerical Rating	Building Classification	Recommended Action
15 and over	A	Immediate Action under Section 301A of Municipal Corporations Act.
12, 13, 14, 15	B	Remedial action within two years
9, 10, 11, 12	C	Remedial action within ten years.
9 and under	D	Probably adequate if building is well maintained.



HAZARDOUS APPENDAGE SURVEY.

Address: 255-271 Manchester St (also 173 Gloucester St).  
Legal Desc.:  
Owner:  
Date: 14/4/92 Date Building Built: 1907.....  
BU/40/

Parapet: No  
Chimney: Y  
Cornice: small (2 bords ~ 250 mm o/h)

Loose Masonry: Significant / Noticeable / Minor.  
Mortar Deterioration: Significant / Noticeable / Minor.  
Cracking: Significant / Noticeable / Minor.

Photo Reference: -----

Comments: Car Building, O.K. for H.A.S.  
New roof.



# Christchurch Eq. RAPID Assessment Form - LEVEL 1

Inspector Initials: JM Date of Inspection: 05-09-10 Exterior Only:   
 Territorial Authority: Christchurch City Time: 12:25 Exterior and Interior:

**Building Name:** Map World, City, F&C **Type of Construction:** M/C Common, Denary, Rebars  
**Short Name:** \_\_\_\_\_  
**Address:** 265 267-269 Manchester  Timber frame  Concrete shear wall  
 Steel frame  Unreinforced masonry  
**GPS Co-ordinates:** S° \_\_\_\_\_ E° \_\_\_\_\_  Tilt-up concrete  Reinforced masonry  
**Contact Name:** \_\_\_\_\_  Concrete frame  Confined masonry  
**Contact Phone:** \_\_\_\_\_  RC frame with masonry infill  Other:  
**Stores at and above ground level:** 2 Below ground level \_\_\_\_\_ **Primary Occupancy:**  Commercial/ Offices  
**Total gross floor area (m<sup>2</sup>):** 42 x 20 Year built: 1920's  Dwelling  Shops  
 Other residential  Industrial  
**No of residential Units:** N/A  Public assembly  Government  
 School  Heritage Listed  
 Religious  Other  
**Photo Taken:**  Yes  No

Investigate the building for the conditions listed below:

Overall Hazards / Damage	Minor/None	Moderate	Severe	Comments
Collapse, partial collapse, off foundation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building or storey leaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wall or other structural damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Overhead falling hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, settlement, slips	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Neighbouring building hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>No noticeable damage to an urm bldg.</u>

Choose a posting based on the evaluation and team judgement. Severe conditions affecting the whole building are grounds for an UNSAFE posting. Localised Severe and overall Moderate conditions may require a RESTRICTED USE. Place INSPECTED placard at main entrance. Post all other placards at every significant entrance.

INSPECTED GREEN  RESTRICTED USE YELLOW  UNSAFE RED

Record any restriction on use or entry:

Further Action Recommended:

Tick the boxes below only if further actions are recommended

- Barricades are needed (state location):
- Level 2 or detailed engineering evaluation recommended
  - Structural
  - Geotechnical
  - Other:
- Other recommendations:

Estimated Overall Building Damage (Exclude Contents)

- None  ?
  - 0-1 %
  - 2-10 %
  - 11-30 %
  - 31-60 %
  - 61-99 %
  - 100 %
- PT Sec. 608

Sign here on completion \_\_\_\_\_  
 Date & Time \_\_\_\_\_  
 ID \_\_\_\_\_

Inspection ID JM544 (Office Use Only)

810731





R243

# Christchurch Eq RAPID Assessment Form - LEVEL 2

Inspector Initials Territorial Authority	<div style="border: 1px solid black; padding: 2px;">FM</div> <div style="border: 1px solid black; padding: 2px;">Christchurch City</div>	Date Time	<div style="border: 1px solid black; padding: 2px;">14.09.2010</div> <div style="border: 1px solid black; padding: 2px;">11:30AM</div>	Final Posting (e.g. UNSAFE)	
---	--	--------------	--	--------------------------------	--

Building Name	Mapworld / Fish & Chip Shop / Shoe Repair Shop				
Short Name			Type of Construction		
Address	Cur. Gloucester & Manchester St.		<input type="checkbox"/> Timber frame	<input type="checkbox"/> Concrete shear wall	
GPS Co-ordinates	S°	E°	<input type="checkbox"/> Steel frame	<input type="checkbox"/> Unreinforced masonry	
Contact Name			<input type="checkbox"/> Tilt-up concrete	<input type="checkbox"/> Reinforced masonry	
Contact Phone			<input type="checkbox"/> Concrete frame	<input type="checkbox"/> Confined masonry	
Stores at and above ground level	02	Below ground level	<input type="checkbox"/> RC frame with masonry infill	<input type="checkbox"/> Other:	
Total gross floor area (m <sup>2</sup> )			Primary Occupancy		
No of residential Units			<input type="checkbox"/> Dwelling	<input type="checkbox"/> Commercial/ Offices	
Photo Taken	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Other residential	<input type="checkbox"/> Industrial	
			<input type="checkbox"/> Public assembly	<input type="checkbox"/> Government	
			<input type="checkbox"/> School	<input type="checkbox"/> Heritage Listed	
			<input type="checkbox"/> Religious	<input type="checkbox"/> Other	

Investigate the building for the conditions listed on page 1 and 2, and check the appropriate column. A sketch may be added on page 3

Overall Hazards / Damage	Minor/None	Moderate	Severe	Comments
Collapse, partial collapse, off foundation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building or storey leaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Wall or other structural damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor cracks in brickwall (south side), crack in arch window lintel (south side)
Overhead falling hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, settlement, slips	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Neighbouring building hazard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Electrical, gas, sewerage, water, hazmats	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Record any existing placard on this building:

Existing Placard Type (e.g. UNSAFE)

INSPECTED.

Choose a new posting based on the new evaluation and team judgement. Severe conditions affecting the whole building are grounds for an UNSAFE posting. Localised Severe and overall Moderate conditions may require a RESTRICTED USE. Place INSPECTED placard at main entrance. Post all other placards at every significant entrance. Transfer the chosen posting to the top of this page.

INSPECTED

GREEN G1 G2

RESTRICTED USE

YELLOW Y1 Y2

UNSAFE

RED R1 R2 R3

Record any restriction on use or entry:

Further Action Recommended:

*Tick the boxes below only if further actions are recommended*

- Barricades are needed (state location):
- Detailed engineering evaluation recommended
  - Structural
  - Geotechnical
- Other recommendations: *Get a structural Engineer's assistance to check & provide appropriate crack repair details*

Estimated Overall Building Damage (Exclude Contents)

None	<input type="checkbox"/>		
0-1 %	<input type="checkbox"/>	31-60 %	<input type="checkbox"/>
2-10 %	<input type="checkbox"/>	61-99 %	<input type="checkbox"/>
11-30 %	<input type="checkbox"/>	100 %	<input type="checkbox"/>

Inspection ID: \_\_\_\_\_ (Office Use Only)

Sign here on completion

*P. Stokan*

Date & Time 14.09.2010

ID OPUS

PRUP1:

Structural Hazards/ Damage	Minor/None	Moderate	Severe	Comments
Foundations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Roofs, floors (vertical load)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Columns, pilasters, corbels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Diaphragms, horizontal bracing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pre-cast connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beam	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Non-structural Hazards / Damage</b>				
Parapets, ornamentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	minor cracks in joint
Cladding, glazing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	between the brickwall &
Ceilings, light fixtures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Large windows on east side
Interior walls, partitions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	minor cosmetic cracks
Elevators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	in gib wall lining and
Stairs/ Exits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ceiling in stairs area.
Utilities (eg. gas, electricity, water)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	minor vertical crack in joint
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	between brick & block walls
<b>Geotechnical Hazards / Damage</b>				
Slope failure, debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	in rubbishroom.
Ground movement, fissures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fish & chip shop - minor
Soil bulging, liquefaction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	cracks in Gib ceiling.

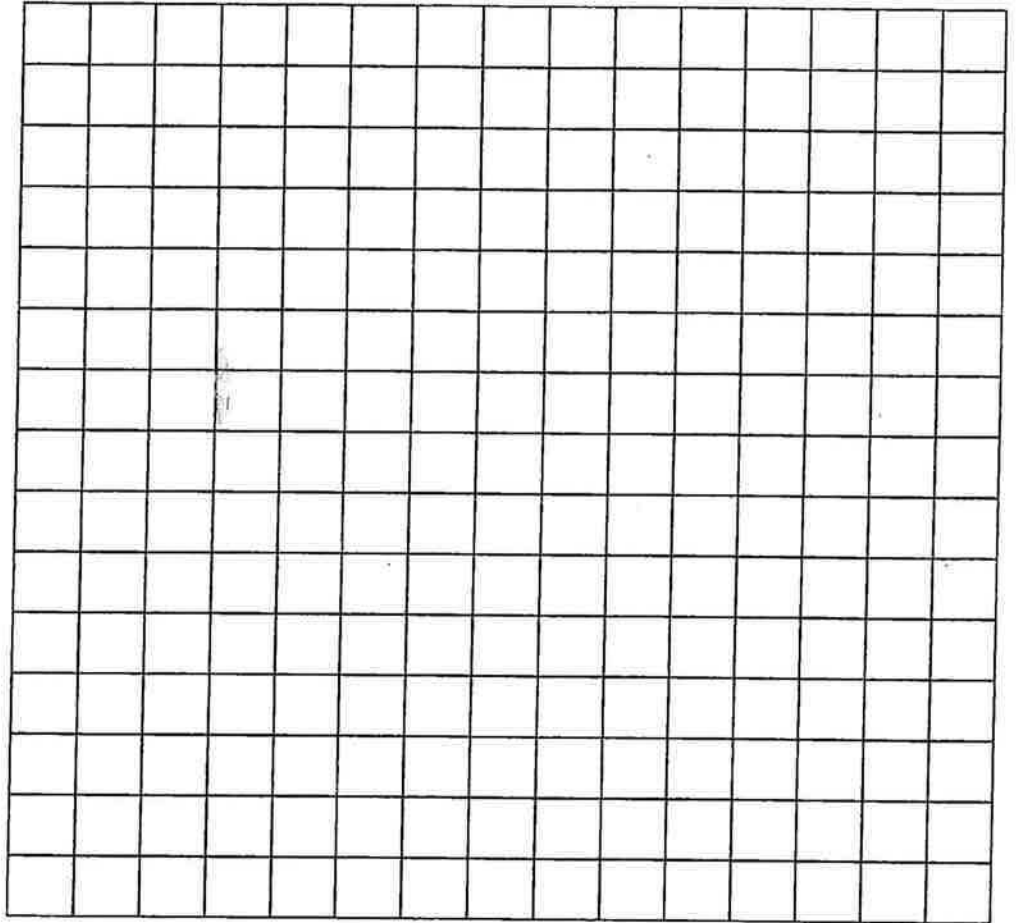
**General Comment** there are minor cracks in brickwall, mainly on the southside and also <sup>minor</sup> internal cracks in <sup>timber</sup> wall & ceiling. No damage in shoe Repair shop and in Dairy. No access to the takeaway shop.

**Usability Category**

Damage Intensity	Posting	Usability Category	Remarks
Light damage Low risk	Inspected (Green)	G1. Occupiable, no immediate further investigation required	
		G2. Occupiable, repairs required	
Medium damage Medium risk	Restricted Use (Yellow)	Y1. Short term entry	
		Y2. No entry to parts until repaired or demolished	
Heavy damage High risk	Unsafe (Red)	R1. Significant damage: repairs, strengthening possible	
		R2. Severe damage: demolition likely	
		R3. At risk from adjacent premises or from ground failure	

**Sketch (optional)**

Provide a sketch of the entire building or damage points. Indicate damage points.

**Recommendations for Repair and Reconstruction or Demolition (Optional)**

- \* Repair the crack in the arch window lintel on the southside ASAP. Also repair all other cracks in the walls & ceiling.
- \* Check the arch lintel above Dairy ~~entrance~~ for any loose bricks. Remove/secure if found to be loose.
- \* Support arrangement (eg. steel bands) to external arch lintels shall be provided to prevent sudden failure of lintel blocks (consult a structural engineer)



M7-1086



**Rapid Assessment Form - Level 2**

Inspector ID <i>RH/LT</i>	Date of Inspection <i>20/9/2010</i>	Inspected <input checked="" type="checkbox"/>	Restricted Use <input type="checkbox"/>
Authority <i>CCC</i>	Time AM/PM <i>10 am</i>	Unsafe <input type="checkbox"/>	

FINAL POSTING from Pg. 2

<b>Building Name</b> <i>MAP World</i>	<b>Address</b> <i>Manchester Street E6-100CESTER</i>
Also known as	<b>Type of Construction</b>
Description Lot DP	<input type="checkbox"/> Timber frame
Other ID	<input type="checkbox"/> Steel frame
Contact Name <i>Monty Claxton Trust</i>	<input type="checkbox"/> Tilt-up concrete
Contact Phone	<input type="checkbox"/> Concrete frame
Stores above ground <input type="checkbox"/> <i>3</i> Below ground <input type="checkbox"/>	<input type="checkbox"/> Concrete shear wall
Avg. area (m <sup>2</sup> )	<input checked="" type="checkbox"/> Unreinforced masonry
No of residential units	<input type="checkbox"/> Reinforced masonry
Photo Taken <input checked="" type="checkbox"/> Yes No No.	<input type="checkbox"/> Other:
	<b>Primary Occupancy</b>
	<input type="checkbox"/> Dwelling
	<input checked="" type="checkbox"/> Commercial/ Offices
	<input type="checkbox"/> Other residential
	<input type="checkbox"/> Industrial
	<input type="checkbox"/> Public assembly
	<input type="checkbox"/> Government
	<input type="checkbox"/> School
	<input type="checkbox"/> Heritage Listed
	<input type="checkbox"/> Other:

Investigate the building for the conditions listed and check the appropriate column. A sketch may be added on pg. 2

Overall Hazards	Minor/None	Moderate	Severe	Comments
Collapse or partial collapse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Building or storey leaning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Structural Hazards</b>				
Foundations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Some cracking to foundations</i>
Roofs, floors (vertical load)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Columns, pilasters, corbels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>South wall brick parapet cracking + cracks to facade</i>
Diaphragms, horizontal bracing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pre-cast connections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Non-structural Hazards</b>				
Parapets, ornamentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Slight movement to internal linings of 10mm to back wall</i>
Cladding, glazing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Ceiling to NE. Popped + cracks to glass</i>
Ceilings, light fixtures	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Interior walls, partitions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Elevators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stairs/ Exits	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Utilities (e.g. gas, electricity)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Significant fire safety concerns	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Geotechnical Hazards</b>				
Slope failure, debris	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, fissures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>General Comments</b>				

Adapted from ATC-20



### Photographs of the Site and Buildings

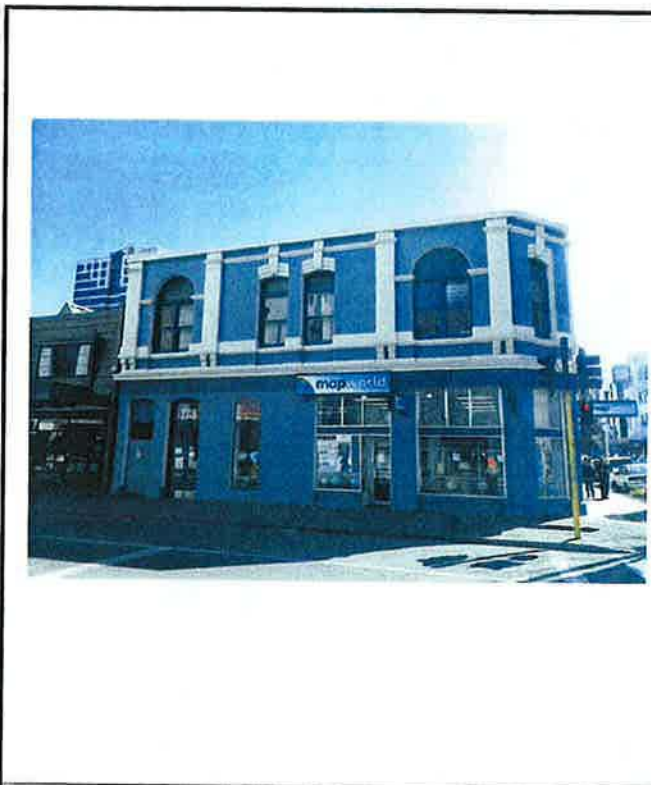


Photo 1. General view of the building

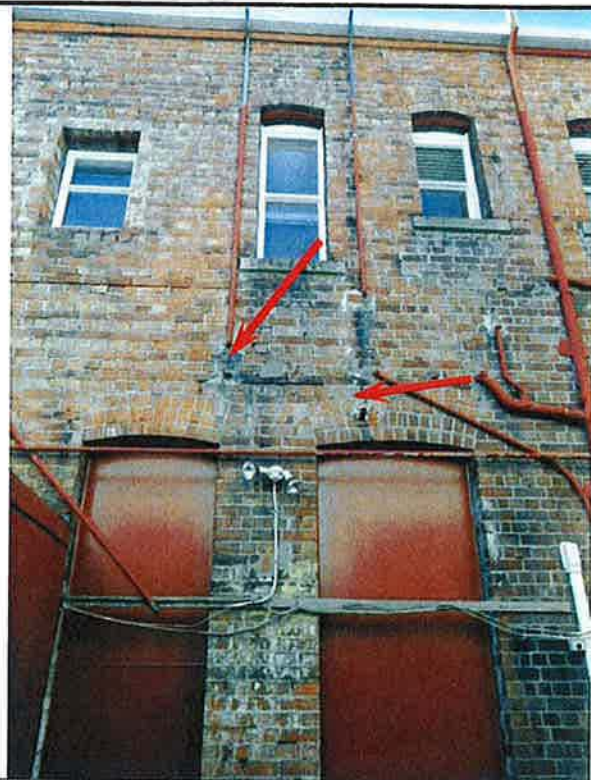


Photo 2. South wall brick parapet cracking

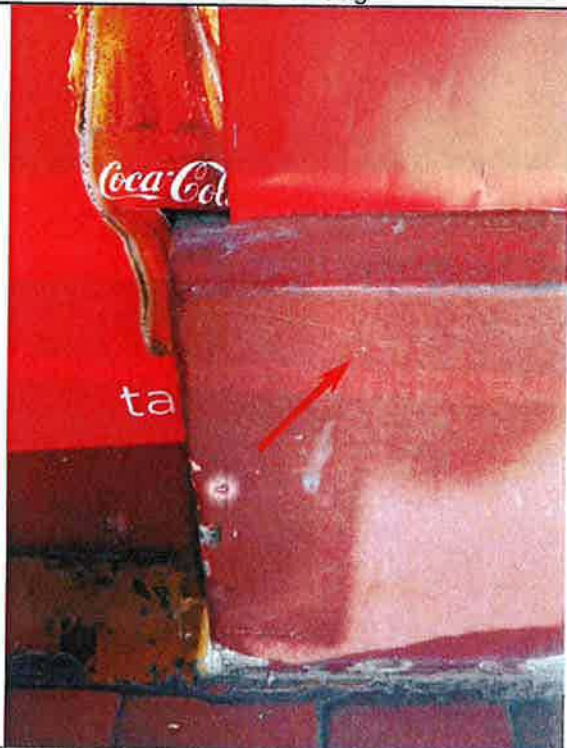


Photo 3. Cracking to foundation



Photo 4. Cracking to foundation



Photo 5. Plaster cracking



Photo 6. Plaster cracking

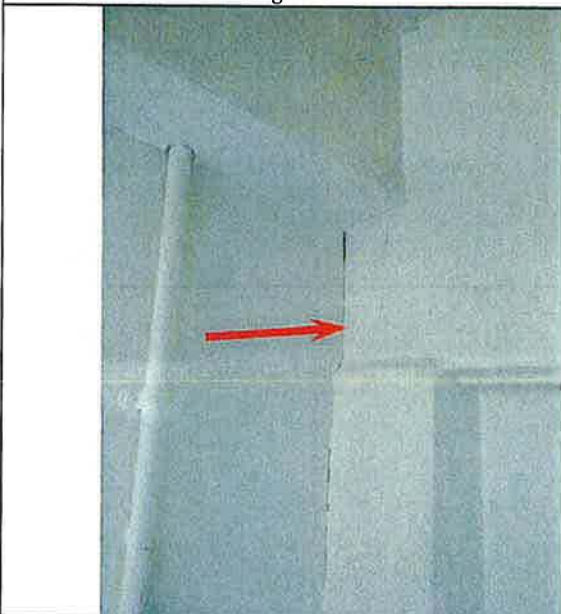


Photo 7. Plaster cracking

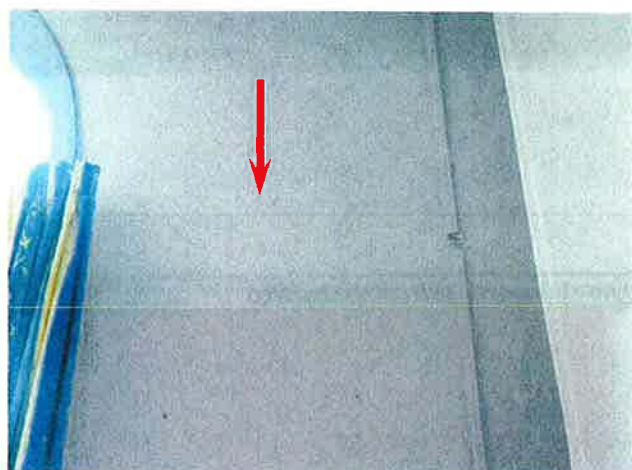


Photo 8. Plaster cracking



Photo 9. Cracks to Facade

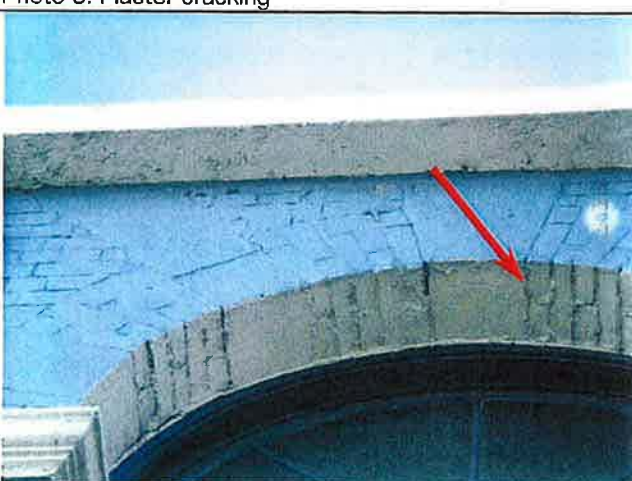


Photo 10. Detail of cracks to Facade





Photo 11. Cracks to Facade

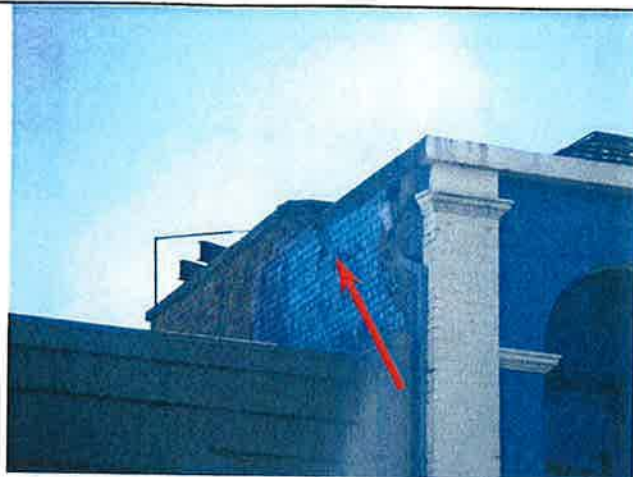


Photo 12. Cracks to wall side of the building



Photo 13. Slight movement to internal linings of 10mm to back wall

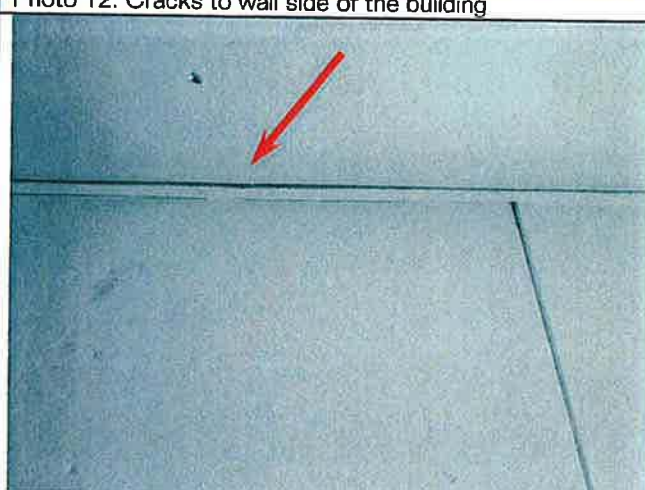


Photo 14. Detail of slight movement to internal linings of 10mm to back wall



Photo 15. Plaster cracking



Photo 16. Ceiling NE popped



Photo 17. Cracks in internal lining



Photo 18. Cracks to glass



Photo 19. Plaster cracking

1 April 2011

Wendy Blackwell  
 Claims Officer  
 Anthony Runacres and Associates Limited  
 PO Box 4020  
 Christchurch 8015



6QUPVT.00

Dear Wendy

**173 Gloucester Street (corner of Gloucester and Manchester Street) Building  
 Inspection and Recommendations  
 Prepared for Anthony Runacres and Associates Limited**

**Introduction**

Opus International Consultants Ltd has been engaged by Anthony Runacres and Associates Limited to carry out a structural inspection of the building at Corner of Gloucester and Manchester Street (173 Gloucester Street), due to damage resulting from the 22 February 2011 M6.3 Christchurch earthquake and ensuing aftershocks.

The purpose of our inspection is to carry out an independent structural assessment of the building, and report our findings and recommendations.

We understand the building is currently for commercial purposes and that is insured with Anthony Runacres and Associates Limited.

**Scope of Work**

The scope of work includes:

- An external visual inspection of the building to determine damage resulting from the earthquake;
- Reporting on our findings and recommendations.

**Limitations**

Our inspection was limited to an external visual inspection of the building. No linings or finishes were removed to expose structural elements, however many were visible due to damage. We assessed the building to be in a highly unstable condition from our external inspection and consequently did not carry out an internal inspection.

No structural analysis was undertaken for this report and no structural drawings were available or reviewed.

This report is based on an inspection of the structure of the building and focuses on the structural damage resulting from the 22 February 2011 earthquake and aftershocks only.

This report is prepared for Anthony Runacres and Associates Limited to assist them with insurance claim purposes associated with the building. It is not intended for any other party or purpose.

## Building Description

The building is a two storey structure of "L" shape in plan, with the longer wing along the Manchester Street (North – South direction). The year of construction is unknown but we assume it would be in the early 1900's. The first and second storey external walls and columns and some of the internal partition walls are constructed of Un-Reinforced Masonry (URM) (i.e., brick). We observed during our site visits that the upper level walls are internally clad with timber sarking. There is a reinforced concrete bond beam/parapet wall at the roof level. The roof framing is constructed of timber and roof cladding of heavy tiles. We do not know what kind of foundation is provided for the walls and the ground floor of the building. We assume that the upper level floor is a timber construction.

We understand that the building is not classified as a heritage item in the City Plan, and appears to have no classification with the Historic Places Trust.

From our site visit we consider that the building is likely to be defined as Earthquake Prone, in accordance with the Building Act 2004.

## Building Condition

The building has sustained significant damage from the earthquake and aftershocks as follows: (Refer to photographs in Appendix 1).

1. The unreinforced masonry on the upper floor along the Manchester Street (East) façade has almost completely collapsed from out of plane failure, (refer to photograph 1). The walls along the South façade (along Gloucester Street) have much less damage (photographs 3 and 4). This can probably be explained by the larger component of seismic shaking during the 22 February event being in the East - West direction.
2. There is a large section of the reinforced concrete bond beam/parapet on the upper level of the east facade that is hanging precariously in place, held only by a few reinforcing bars to the remaining parapet (which could also easily collapse pulling with it other parts of the wall). This presents a falling hazard (refer to photograph 2).
3. A large portion of the south-west corner of the upper floor walls has collapsed (south façade). This is probably result of pounding with the neighbouring building to the west (refer to photograph 5).
4. Significant damage to the walls and columns occurred on the ground floor of the building. One of the columns on the Manchester Street façade was damaged to the extent that this caused misalignment of the upper level floor (refer to photograph 1).

We agree with the current red placard that has been previously assigned, outlining that the building is unsafe to approach or enter.

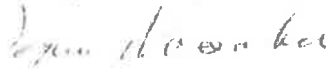
## Conclusions

The building has suffered significant structural damage from the 22 February earthquake, and its gravity and lateral load resisting capacity is reduced significantly. We consider that due to the unstable condition of the building and damage sustained from the earthquake, repairs are not practically or economically feasible to undertake. Any work on the building could not stop only at repairing the damage i.e., reinstating its condition prior to the earthquakes, but would also have to include seismic improvements to bring the building above the Earthquake Prone threshold limit. It would be also very difficult to construct any retrofit work safely. We therefore recommend that this building be demolished.

With respect to the recovery of any property from the building in its current state, we consider that the risk and potential consequences of collapse is too high to recommend short term access.

Please don't hesitate to call me to discuss any aspect of this letter or the report (03 363 5520).

Yours sincerely



**Dejan Novakov**  
Senior Structural Engineer, CPEng 165725  
([dejan.novakov@opus.co.nz](mailto:dejan.novakov@opus.co.nz)) 04 4717 820

*Reviewed and approved for release by*



**Alistair Boyce**  
Senior Structural Engineer, CPEng 209860



Photograph 1: Manchester Street elevation, showing damage to unreinforced masonry wall and columns and misalignment of the floor.



Photograph 2: Corner of the building, showing collapse of the reinforced concrete parapet.



Photograph 3: Corner of the building – detail: Observe less severe damage to unreinforced masonry along the Gloucester Street facade



Photograph 4: Gloucester Street Elevation



Photograph 5: Gloucester Street Elevation – west end: Damage to the first floor corner – likely due to the pounding with the West neighbour's building.



M7 1086

**maxim**

**Rapid Assessment Form - Level 1**

Page 1 of 5

Inspector ID	RH.	Date of Inspection	15/4/11	Areas Inspected	Exterior Only <input checked="" type="checkbox"/>
Authority	CCC	Time AM/PM	3.30		Exterior and Interior <input type="checkbox"/>

<b>Building Name</b>	Mapworld.		<b>Address</b>	Cnr Gloucester and Manchester		
Also known as			<b>Type of Construction</b>			
Description	Lot	DP	<input type="checkbox"/>	Timber frame	<input type="checkbox"/>	Concrete shear wall
Other ID			<input type="checkbox"/>	Steel frame	<input checked="" type="checkbox"/>	Un-reinforced masonry
Contact Name			<input type="checkbox"/>	Tilt-up concrete	<input type="checkbox"/>	Reinforced masonry
Contact Phone			<input type="checkbox"/>	Concrete frame	<input type="checkbox"/>	Other:
Stores above ground	<input checked="" type="checkbox"/>	Below ground	<input type="checkbox"/>	<b>Primary Occupancy</b>		
Avg. area (m <sup>2</sup> )	<input type="text"/>		<input type="checkbox"/>	Dwelling	<input checked="" type="checkbox"/>	Commercial/ Offices
No of residential units	<input type="text"/>		<input type="checkbox"/>	Other residential	<input type="checkbox"/>	Industrial
Photo Taken	Yes	No <input checked="" type="checkbox"/>	No. <input type="text"/>	Public assembly	<input type="checkbox"/>	Government
				School	<input type="checkbox"/>	Heritage Listed
				Other:	<input type="checkbox"/>	

Investigate the building for the conditions listed and check the appropriate column	Estimated building damage (exclude contents)			
Observed Conditions	Minor/None	Moderate	Severe	Estimated building damage (exclude contents)
Collapse, partial collapse, off foundation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> None
Building or storey leaning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 0-1%
Racking damage to walls, other structural damage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 2-10%
Chimney, parapet or other falling hazard	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 11-30%
Ground slope movement or cracking	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> 31-60%
Other* (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 61-99%
Comments:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 100%

\* investigate site hazards such as gas, electricity, sanitary sewer, stormwater or hazardous materials/processes

Choose a posting based on the evaluation and team judgement.  
**Severe** conditions affecting the whole building are grounds for an UNSAFE posting.  
 Localised **Severe** and overall **Moderate** conditions may require a RESTRICTED USE posting.  
 Place INSPECTED placard at main entrance. Post all other placards at every significant entrance.


INSPECTED  GREEN      RESTRICTED USE  YELLOW      UNSAFE  RED

Record any restriction on use or entry

Tick the boxes below only if further actions are recommended:

Barricades are needed (state location):  
 Level 2 or Detailed Engineering Evaluation recommended:  structural  geotechnical  other:  
 Other recommendations, comments

Recommend demolition

Sign here on completion  
  
 CRNG # 127491

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Rapid Assessment Form - Level 2

Page 2 of 5

Inspector ID	RH	Date of Inspection	15/4/11	Inspected		Restricted Use	
Authority	CCC	Time AM/PM	3:30	Unsafe	X		

FINAL POSTING from Pg. 2

<b>Building Name</b>	Mapworld		<b>Address</b>	Chr Claverdon and Marchmont		
<b>Also known as</b>			<b>Type of Construction</b>			
<b>Description</b>	Lot	DP	<input type="checkbox"/>	Timber frame	<input type="checkbox"/>	Concrete shear wall
<b>Other ID</b>			<input type="checkbox"/>	Steel frame	<input checked="" type="checkbox"/>	Unreinforced masonry
<b>Contact Name</b>			<input type="checkbox"/>	Tilt-up concrete	<input type="checkbox"/>	Reinforced masonry
<b>Contact Phone</b>			<input type="checkbox"/>	Concrete frame	<input type="checkbox"/>	Other:
<b>Stores above ground</b>	<input type="text" value="2"/>	<b>Below ground</b>	<input type="checkbox"/>			
<b>Avg. area (m<sup>2</sup>)</b>	<input type="text"/>		<b>Primary Occupancy</b>			
<b>No of residential units</b>	<input type="text" value="1"/>		<input type="checkbox"/>	Dwelling	<input checked="" type="checkbox"/>	Commercial/ Offices
<b>Photo Taken</b>	Yes	<input checked="" type="radio"/> No	No.	<input type="checkbox"/>	<input type="checkbox"/>	Industrial
				<input type="checkbox"/>	<input type="checkbox"/>	Government
				<input type="checkbox"/>	<input type="checkbox"/>	Heritage Listed
				<input type="checkbox"/>	<input type="checkbox"/>	Other:

Investigate the building for the conditions listed and check the appropriate column. A sketch may be added on pg. 2

Overall Hazards	Minor/None	Moderate	Severe	Comments
Collapse or partial collapse	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Top floor exterior walls and facade have suffered
Building or storey leaning	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other:	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Structural Hazards</b>				significant damage (collapse) Parapets have collapsed
Foundations	<input type="checkbox" value="-"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Roofs, floors (vertical load)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Columns, pilasters, corbels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Diaphragms, horizontal bracing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pre-cast connections	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Non-structural Hazards</b>				Interior walls are unstable
Parapets, ornamentation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cladding, glazing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Ceilings, light fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Interior walls, partitions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Elevators	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stairs/ Exits	<input type="checkbox" value="-"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Utilities (e.g. gas, electricity)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Significant fire safety concerns	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other:	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Geotechnical Hazards</b>				widespread evidence of liquefaction
Slope failure, debris	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ground movement, fissures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other:	<input type="checkbox" value="-"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>General Comments</b>				

Adapted from ATC-20



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Rapid Assessment Form – Level 2

Replace			
Levels			
Width	m	0	0
Length	m	0	0
Knee	m		
Apex	m		
<i>Building and Fitout</i>		Area	930 m2
		Cost per m2	\$ 3000 /m2 approx
Estimated Replacement Cost		\$	-
Demolition Cost		\$	-
Services	5%	\$	-
		\$	-
Fees	5%	\$	-
Contingency	5%	\$	-
		<b>Rebuild</b>	<b>\$2,490,000.00 Plus GST</b>

Reinstate		From Rawlinsons Residential (12.1.1)		Estimated Reinstatement	
	Rectify	Expected %	Expected \$	Min	Max
Structure	Site Preparation	0.50%	\$ -	-	-
	Foundations	14.50%	\$ -	\$ -	\$ -
	Frame	0.00%	\$ -	\$ -	\$ -
	Structural Walls	0.00%	\$ -	\$ -	\$ -
	Upper Floors	0.00%	\$ -	\$ -	\$ -
Ext Fabric	Roof	12.50%	\$ -	\$ -	\$ -
	External Walls	10.00%	\$ -	\$ -	\$ -
	Windows and Doors	10.00%	\$ -	\$ -	\$ -
Int Finishing	Stairs	0.00%	\$ -	\$ -	\$ -
	Internal Walls	3.00%	\$ -	\$ -	\$ -
	Internal Doors	3.00%	\$ -	\$ -	\$ -
	Floor finishes	4.00%	\$ -	\$ -	\$ -
	Wall Finishes	11.80%	\$ -	\$ -	\$ -
	Ceiling Finishes	3.10%	\$ -	\$ -	\$ -
	Fittings and Fixtures	11.70%	\$ -	\$ -	\$ -
Services	Sanitary Plumbing	5.00%	\$ -	\$ -	\$ -
	Mechanical Services	0.00%	\$ -	\$ -	\$ -
	Fire Services	0.00%	\$ -	\$ -	\$ -
	Electrical Services	3.50%	\$ -	\$ -	\$ -
	Lifts and Escalators	0.00%	\$ -	\$ -	\$ -
	Special Services	2.30%	\$ -	\$ -	\$ -
	Drainage	0.60%	\$ -	\$ -	\$ -
	External Works	0.00%	\$ -	\$ -	\$ -
	Sundries	0.00%	\$ -	\$ -	\$ -
	P&G	4.50%	\$ -	\$ -	\$ -
		100.00%	\$ -	\$ -	\$ -
	Demolition	2.00%	\$ -	\$ -	\$ -
	Services	1.00%	\$ -	\$ -	\$ -
Fees	4.55%	\$ -	\$ -	\$ -	
Contingency	4.55%	\$ -	\$ -	\$ -	
		\$ -	\$ -	\$ -	
				0%	0%
<b>Reinstate</b>		<b>\$</b>	<b>-</b>	<b>to</b>	<b>\$</b>

If reinstate cost is greater than 80% of total rebuild please indicate here

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## Rapid Assessment Form – Limitations

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**Limitations**

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- (iii). Our inspection was limited to sensory examinations of what we assessed to be typical parts of the building only where safe ready access existed at the time. Our inspection of the relevant aspects of the building as outlined above cannot guarantee that all possible facilities, defects, conditions and qualities are identified in this report.
- (iv). Our review for the inspection has not extended to design calculations. No subsurface investigations were undertaken. No survey of property boundaries or building location has been undertaken by us.
- (v). Conditions may exist which were undetectable given the limited nature of the enquiry M7 was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.
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PH 377 4483  
CITY FISH & CHIPS - PH 377-4483

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