Buchanan & Fletcher Ltd
CONSULTING STRUCTURAL ENGINEERS

DIRECTORS/PRINCIPALS:
Michael R. Fletcher BE (Hons), DBA, MIPENZ
David J. Eaton BE, MIPENZ

St.Elmo Courts 47 Hereford St.
Christchurch NZ. P.O.Box 4571
Phone (03) 660-304 Fax (03) 795-011

1007/DJE

Mr Sutherland

17 July 1991

(F) Bu/40/139/734/rec

Christchurch City Council
P.O. Box 237
CHRISTCHURCH

ATTENTION: Mr G.Tapper

Dear Sir,

EARTHQUAKE RESISTANCE OF BUILDINGS AT 734-744 COLOMBO STREET

1.0) Introduction

This brief report investigates the likely performance of the two buildings at 734-744 Colombo Street in the event of a moderate earthquake. The bulk of the informnation for this investigation has been gleaned from permit application drawings as held by the Christchurch City Council, and supplemented with on-site inspections of the two structures. There have been subsequent structural alterations carried out to the northern (2 storey) building for which no drawings appear to exist. The southern building (4 storey) appears to be basically unaltered from the drawings.

The buildings are on separate titles, but have no physical separation over the common 2 storey section of boundary.

Drawings 1007 E1,E2,E3 are attached, giving a basic outline of the current structural elements.

2.0) SOUTHERN BUILDING (4 STOREY)

2.1) Construction

The structure for this building is reinforced concrete beams and columns, with 4 suspended concrete slabs (including roof). The cladding to the exterior is plastered cavity brick as infill panels between the concrete beams and columns.

CONSULTANT: Andrew H. Buchanan BE (Hons), MS, PhD, MIPENZ

2.1) Construction Continued

The first two storeys were constructed prior to 1925, with a third storey added in 1925 and a fourth in 1926. Strengthening work to the original columns and foundations was undertaken at the time of these additions. A fire in 1938 resulted in reconstruction of the fourth floor slab and beams, most brick panels between the third and fourth floors, and also a portion of the third floor.

The reconstruction appears to be a direct duplication of the original structure. There is a concrete and brick lift machine room above the fourth floor. This has a concrete roof, which is supported on concrete beams and brickwalls.

The strengthening work undertaken in conjunction with the building extension consists of steel R.S.J's wedged between existing beams to improve the axial load capacity of the columns. Load from these steel members was transferred to new foundation pads. Load calculations accompanying the strengthening details indicate the design live load to be 4.7 kPa (100 lb/sq foot).

During the construction of the adjacent northern building the original columns and the steel R.S.J's were concrete encased.

2.2) Earthquake Resistance

With the exception of the lift machine room enclosure, all load bearing elements are reinforced concrete, or encased in reinforced concrete. The beam/column system would provide frame action for earthquake resistance in each direction.

Basic calculations indicate the concrete columns possess sufficient shear strength to withstand loads imposed by a 0.1g earthquake acceleration. However, the tie reinforcement is very light and would not provide any significant column ductility. The detailing of the negative moment steel in the beams would not comply with current standards and cracking in the top of beams is quite likely in earthquake loading.

In the north-south direction there are eight frames of reasonably similar stiffness available to resist earthquake forces. In the east-west direction there are two frames available. The southern frame is likely to be considerably stiffened by the brick infill panels. On the northern frame this stiffness is significantly reduced at the ground and first floors where only one or two panels of brickwork remain.

2.3) Remedial Work To Vunerable Elements

In our opinion there are four areas in the building where remedial work would be appropriate in order to minimize the risk of damage to life and property.
These are:

a) Brickwork supporting the lift machine room roof.
b) Ceramic chimney stack attached to the south wall.
c) Lack of stiffness of the north frame at ground and first floors.
d) Securing of wedged steel columns to concrete structure.

The brickwork to the lift machine room supports, in part at least, the concrete roof slab. The ideal solution would be to demolish the shell of machine room and provide a new, lightweight structure in its place. Alternatively securing of the brickwork with steel framing could be considered.

Removal of the ceramic chimney stack presents no problems and eliminates a particularly vunerable item.

To improve the stiffness of the northern frame, concrete block shear panels can be provided at ground and first floors. This would improve the symmetry of the resisting mechanism and thus improve its performance in an earthquake.

Details of the structural steel strengthening to the columns imply no positive fixing to the concrete structure. Although the concrete encasement will have improved this situation, a positive fixing in form of perhaps an epoxied steel collar at the head and base of each column is recommended.

The parapets in the roof area are brickwork panels between concrete column projections. The drawings indicate horizontal reinforcing within the brickwork. These parapets are in good condition, are approximately 900mm in height and thus have a low risk of collapse in a moderate earthquake. The brick infill panels are also in good condition; the exterior plaster having been well maintained with cracks sealed, etc. The panels are surrounded by concrete members, and it is likely that creep in the beams will have resulted in some additional compressions in the brickwork. This would add to the stability of the panels under face loads.

3.0) NORTHERN BUILDING (2 STOREY)

3.1) Construction

This building consists of a single storey portion on the east side and a two storey portion fronting to Colombo Street. Construction took place in 1937. The eastern portion consists of reinforced concrete beams and columns with brick infills and parapets. The roof is timber trussed. The main two storey portion has concrete beams and columns to the north wall, concrete panels at the upper level on the east and west walls and structural steel columns to the south. All these support steel beams which in turn support a timber framed floor. The roof consists of a series of timber trusses.

3.1) Construction Continued
Six steel columns supporting the first floor are indicated on the original drawings. These no longer exist and appear to have been replaced by plated steel beams approximately 310mm by 640mm spanning north to south. No drawings appear to exist for this work.

3.2) Earthquake Resistance:

In the single storey portion the roof is supported on concrete elements with the exception of the south east corner, where support appears to be by a brick panel. Earthquake resistance would be provided by the concrete frame of the north and east walls, as well as the 4 storey structure to the south.

The two storey structure has earthquake resistance in the east west direction via concrete frame to the north and concrete encased steel columns to the south. With the floor being timber, the bulk of the earthquake loads are generated by the front and rear concrete walls. In the north-south direction the only resisting elements are the columns bending about their minor axis. Stiffness considerations and the fact that the building is "tied" to the adjacent 4 storey structure at the column locations imply that the bulk of the earthquake resistance in this direction would be provided by that structure.

3.3) Remedial Work To Vunerable Elements
There are several areas in this building where the earthquake performance of the structure could be improved.

These are:

a) The brick parapets to the north and east should be lowered and capped with a concrete band, or, in the case of the east wall removed all together.

b) Provide independent steel column support to the roof at the south east corner.

c) The upper level concrete walls are 255mm thick, reinforced each face. These require securing at the ceiling and first floor levels using an epoxy bolting system. Loads would then be transferred to the north and south resisting systems via steel bracing at ceiling level and horizontal ply and steel beams at floor level.

d) The support details of "newer" main floor beams are unknown and their connections should be checked to ensure they are not vunerable during horizontal movement of the floor, etc. In conjunction with this the perimeter of the timber floor should be secured with epoxy dowels to the surrounding concrete work.

4.0) CONCLUSIONS

The two buildings in question are essentially supported by reinforced concrete elements. Their performance in a moderate earthquake will be superior to a building supported on brick masonry in that there is little chance of a sudden collapse of the whole structure . When the vunerable elements identified above have been secured, the risk to the occupants and the public will be significantly reduced.

The following timetable is recommended for implementation of the remedial work.

Southern Building:- items 2.3.b and c to be undertaken in the immediate future.
- items 2.3.a and d to be attended to within the next five years.

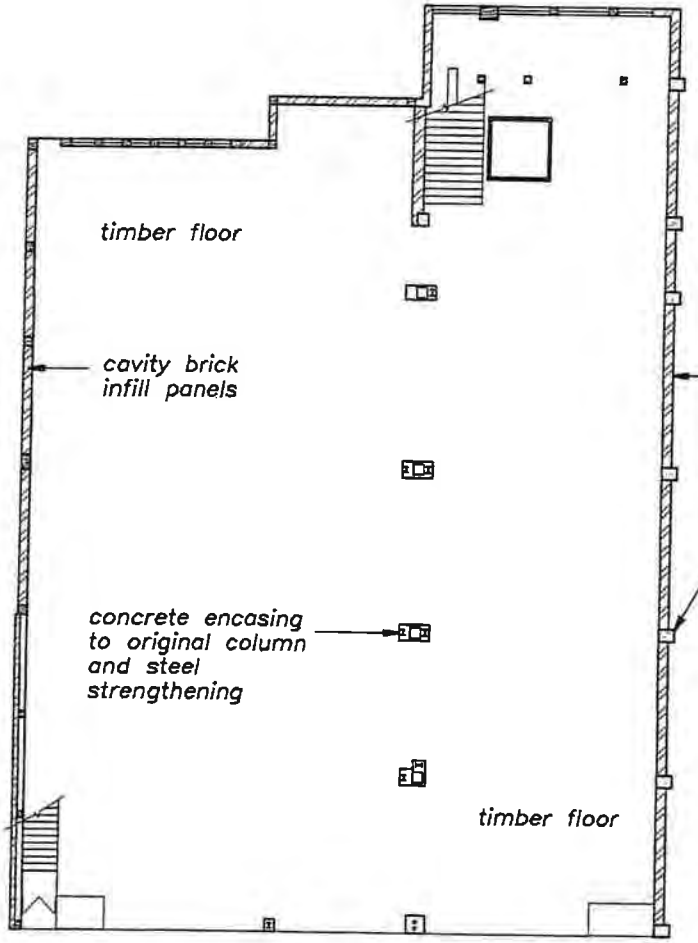
Sould the occupancy level of this building change significantly this period may need reviewing.

Northern Building:- items 3.3.c and d to be addressed immediately.
- items 3.3.a and b to be undertaken within the next 12 months.

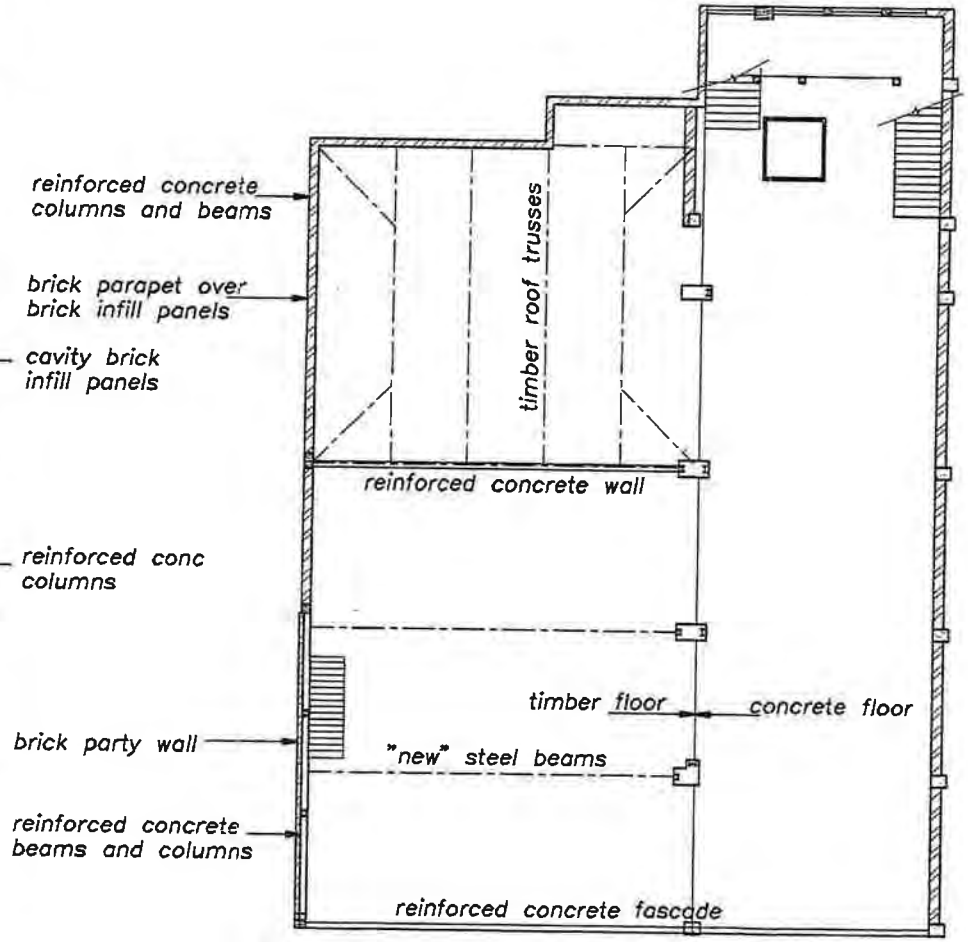
With the implementation of the above items we believe these buildings will not suffer excessive damage in a moderate earthquake.

Yours faithfully

D.J.Eaton
BUCHANAN AND FLETCHER LIMITED

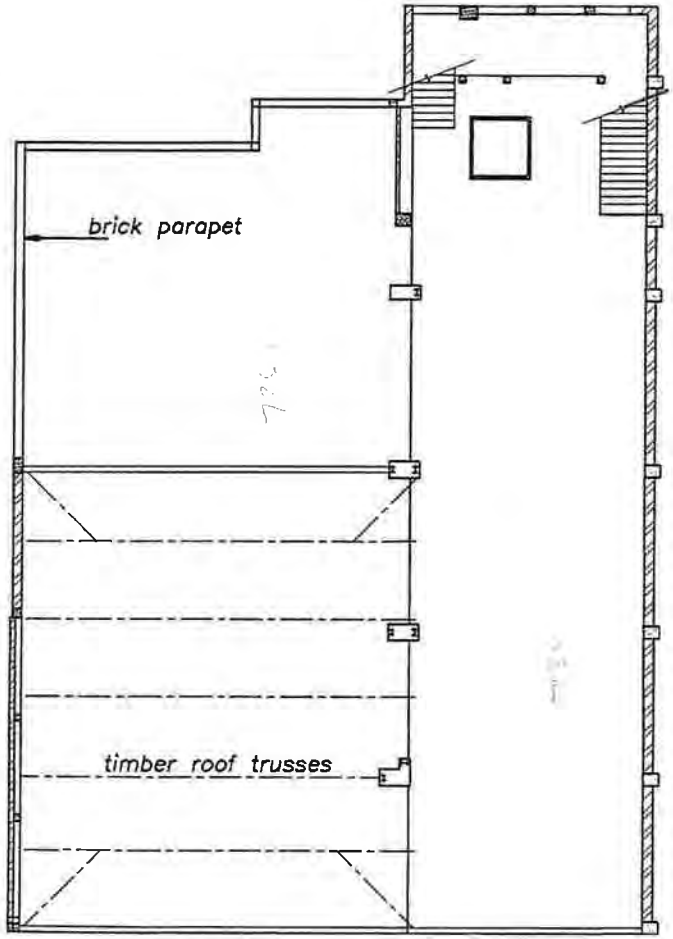


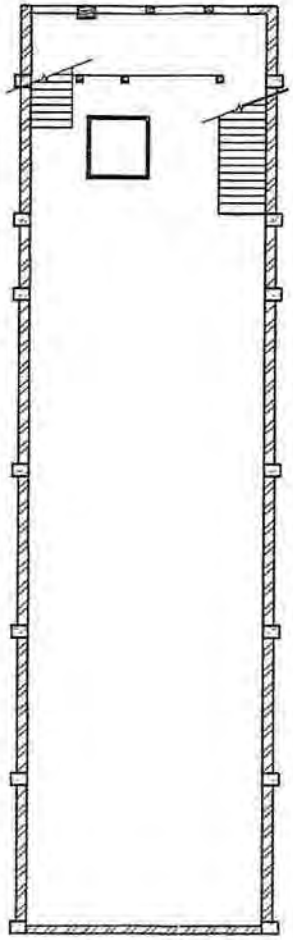
GROUND FLOOR PLAN

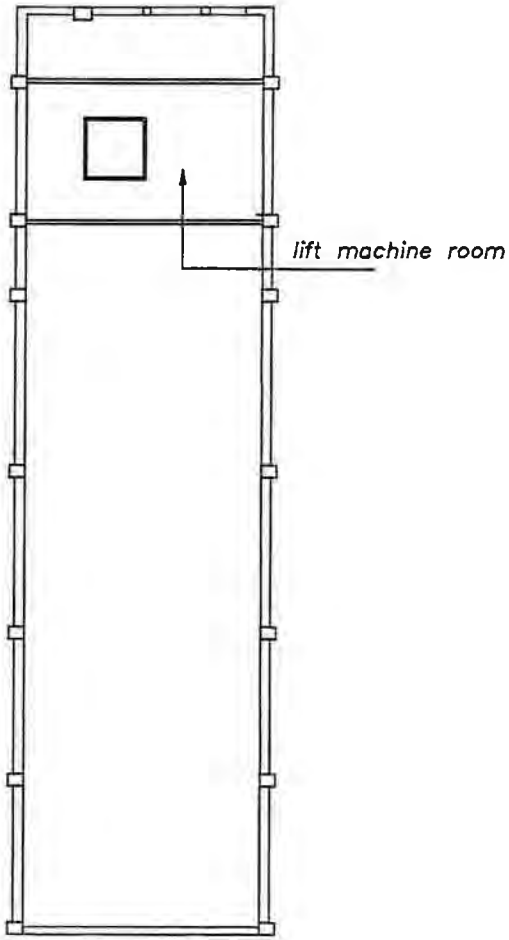


FIRST FLOOR PLAN

Buildings at
734-744 Colombo Street
1007 E1





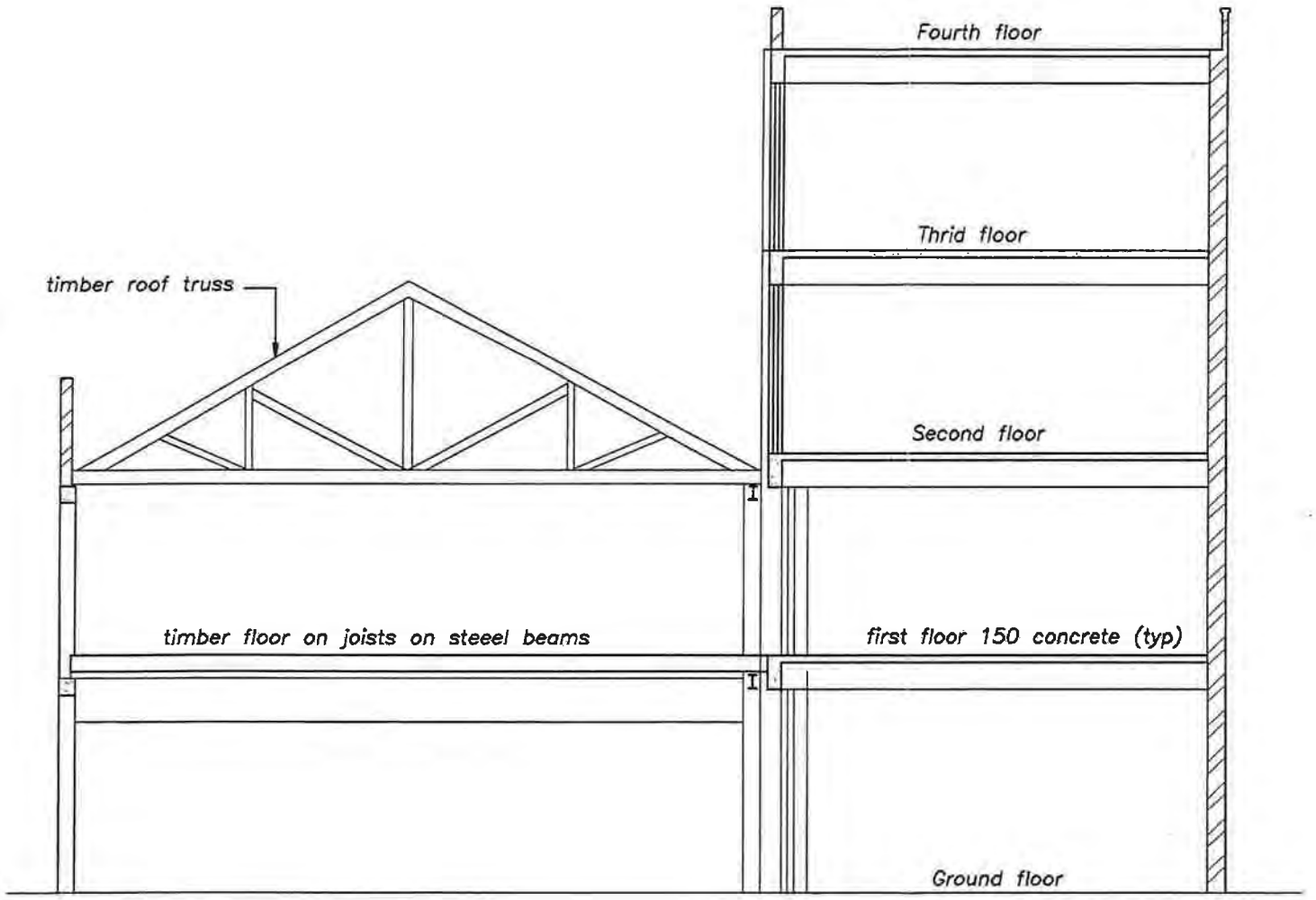


SECOND FLOOR PLAN

THIRD FLOOR PLAN

FOURTH FLOOR PLAN

Buildings at
734-744 Colombo Street
1007 E2



TYPICAL CROSS SECTION

Buildings at
734-744 Colombo Street
1007 E3

730 HAZARDOUS APPENDAGE SURVEY.

Address: ~~734~~ Colombo St
Legal Desc.: Lots 17-18 DP6738
Owner:
Date: 14/4/92 Date Building Built: 1938 !!
BU/40/

Parapet: ~1.0m (see photo)
Chimney:
Cornice: 3 large bands ~ 600-750 mm O/H

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

Photo Reference: .....

Comments: "Spikes" on top of parapet are hazardous
Cornices are hazardous

1993

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Phone (03) 660-304 Fax (03) 795-011

Consent 93011337.

30 June 1993

1270/MRF

Mr N D Rope,
Fax 09 638 6349
Box 27026
AUCKLAND

Dear Sir,

BUILDING AT 736 COLOMBO STREET
FIRE REQUIREMENTS FOR CHANGE OF TENANCY

This report has been prepared for Mr N D Rope on behalf of his client, who wishes to become the tenant of the above building.

1. Building

The building was originally constructed between 1925 and 1926. Following a fire in 1938 it was substantially rebuilt.

In 1991, our company undertook a seismic review on behalf of the present owner. As a result of that review, it was agreed with the Christchurch City Council that occupancy of the building should be limited as follows:

- public and permanent occupants confined to ground floor
- upper floors restricted to storage and occasional access

Any variation from this pattern of occupancy would be likely to be considered a "change of use" by the City Council, with potentially major consequences for fire requirements (see 2 and 3 below).

All building work shall comply with the New Zealand Building Code notwithstanding any inconsistencies which may occur in the drawing: and specifications.

2. Building Act

Under the Building Act 1991, the City Council can require a building's fire safety measures to be upgraded under the following circumstances:

2.1 In the event of a building alteration, they can require egress provisions to be upgraded so the building complies "as nearly as is reasonably practicable, to the same extent as if it were a new building."

CONSULTANT: Andrew H. Buchanan BE (Hons), MS, PhD, MIPENZ

We recommend that the following work be carried out during the shop fit out:

6.1 Door from ground floor shop to store at rear be marked with an EXIT or FIRE EXIT sign complying with NZ Building Code Clause F8.

6.2 Route from ground floor shop to door into alleyway be similarly marked.

6.3 Door into alleyway remains unlocked at all times when building is occupied. In the longer term, this door should be replaced with outward opening doors complying with NZ Building Code Clause C2.

6.4 In the event of fire, people using the first floor toilets have a very long way to go to escape from the building if they go down the stairs and out the door in 6.3 above. However there is an alternative means of egress by going up to the landing between first and second floors and onto a fire escape. We recommend:

6.4.1 The tenant should have a policy of denying the public access to the first floor (and above).

6.4.2 Signs be placed on the first floor indicating the alternative means of egress by going upstairs.

6.4.3 The fire escape door and fire escape itself be checked to ensure that they are servicable.

7. Summary

Provided no work is intended that would require a Building Consent, and provided the tenants do not intend to permanently occupy any level above the ground floor, we do not believe that the Christchurch City Council will require any upgrading of fire requirements.

Some relatively minor work would result in a significant improvment in egress provisions, and life safety in the event of a fire. Although this work is not compulsory, we do recommend it.

96005415

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Phone (03) 366-0304 Fax (03) 379-5011

17 June 1996

1007/DJE

Environmental Services Unit
Christchurch City Council
PO Box 237
CHRISTCHURCH

Dear Sir

RE: 734-744 COLOMBO STREET - STRENGTHENING WORK

Please find enclosed three sketches outlining proposed strengthening work for the structures at 734-744 Colombo Street. Also enclosed is a copy of our July 1991 report on the above structure.

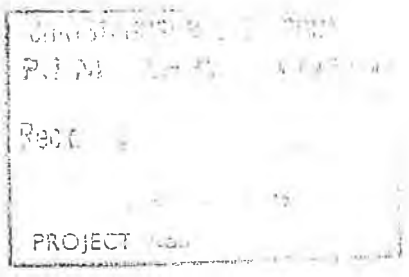
In our conclusions to the above report we recommended that remedial work be undertaken in two stages. Items 2.3 b and c were addressed in 1991 with a block wall being provided at ground floor level for C. Strengthening of brickwork to the lift machine room, item a, is addressed in Sketch 3. Existing tenancy layout and fitout make implementation of item d difficult at this point in time. It is proposed that the remedial work proposed be deferred until tenancy refurbishment is carried out. As noted in 2.2 of the report the structure possesses sufficient strength to resist 0.1g earthquake acceleration.

Items 3.3 c and d were completed in 1991. The brick parapets at the north and east, items 3.3 a and b, are to be strengthened in accordance with Sketches 1 and 2. The strengthening work will restrain the parapets and brick walls, as opposed to lowering or removal. With the east wall restrained the roof in the south east corner will have improved support.

The strengthening has been based on out-of-plane loading criteria as outlined in NZNSEE Draft Guidelines, Section 5.5.

Yours faithfully

D J Eaton
DIRECTOR
BUCHANAN & FLETCHER LIMITED



+64033774308

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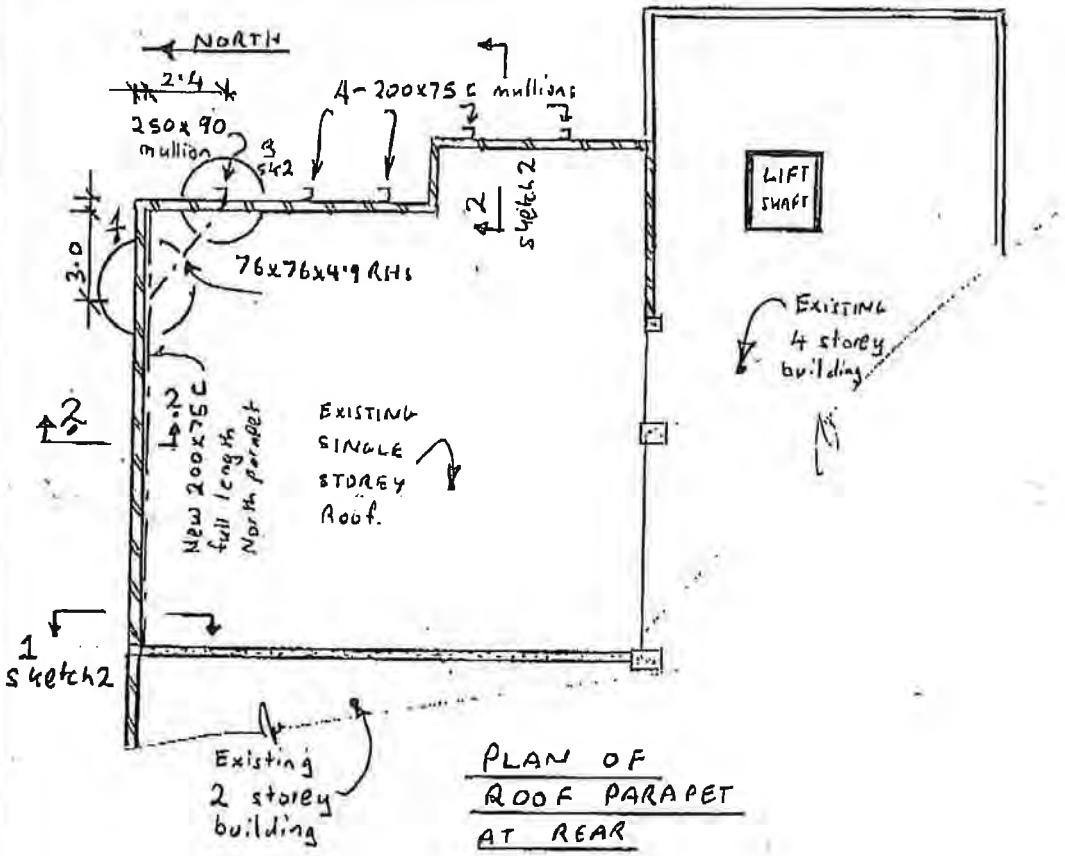
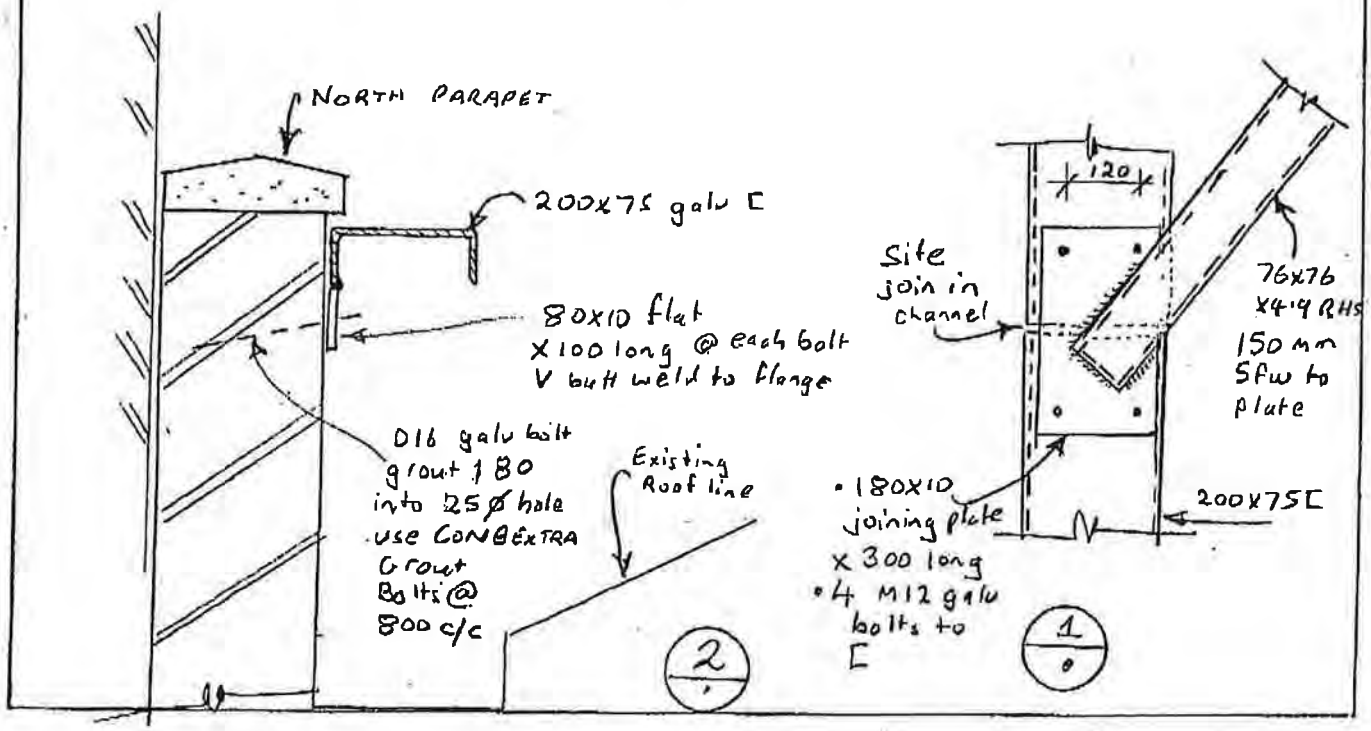
JOB NO 1007	JOB 734 – 744 COLOMBO ST – STRENGTHENING	DATE 14/6/96

SKETCH 1



PLAN OF ROOF PARAPET AT REAR



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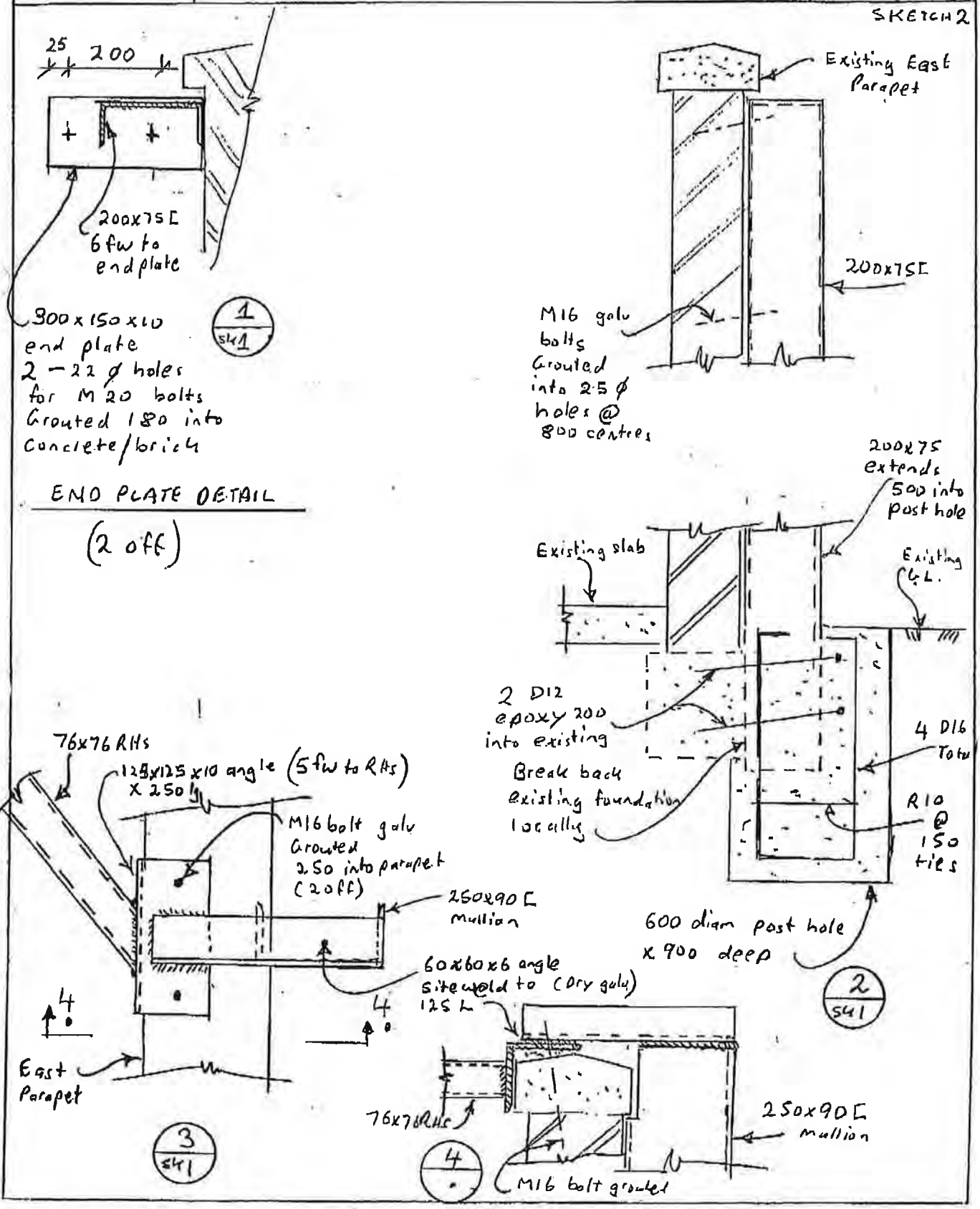
JOB NO 1007	JOB 734 – 744 COLOMBO ST – STRENGTHENING	DATE 14/6/96

SKETCH 2



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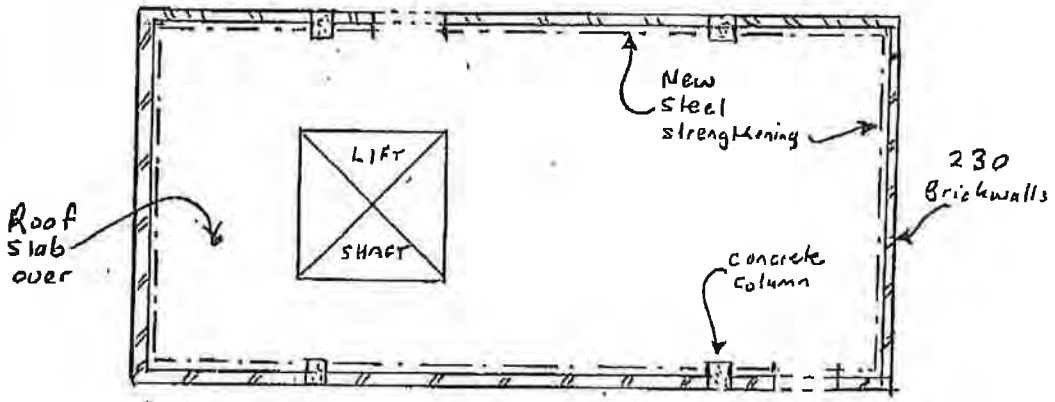
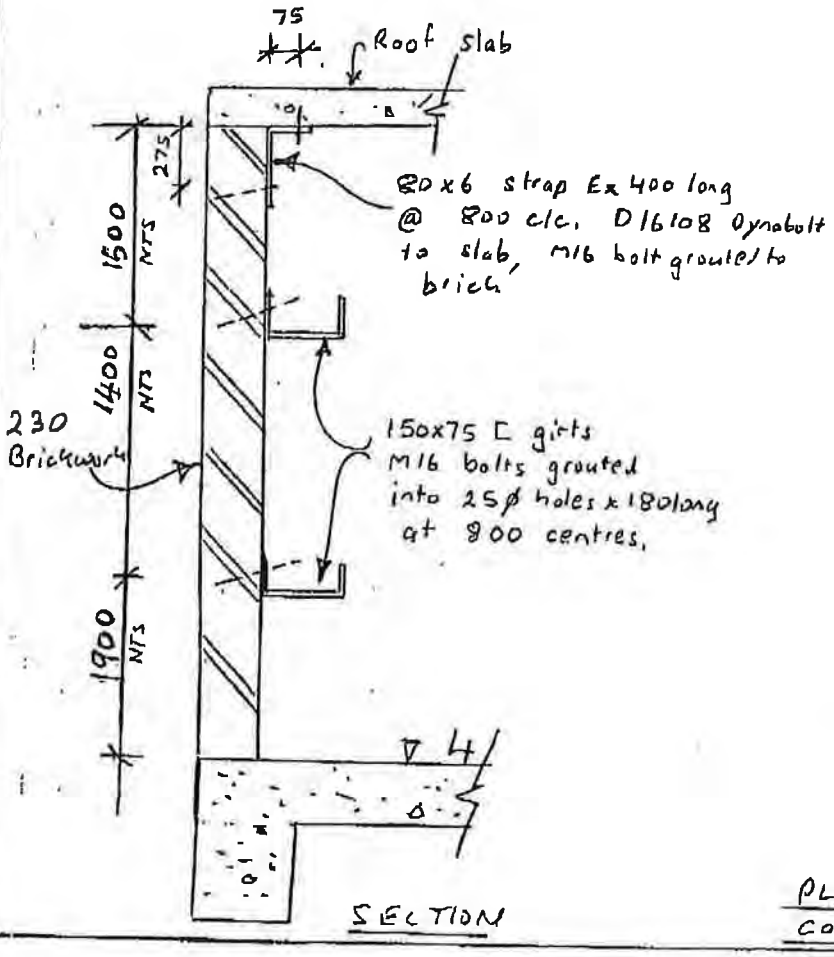
JOB NO. 1007	JOB 734 – 744 COLOMBO ST – STRENGTHENING	DATE 14/6/96

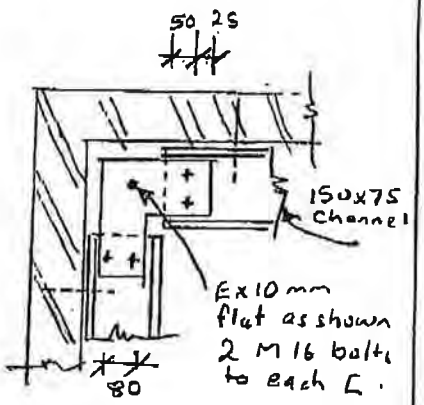
SKETCH 3



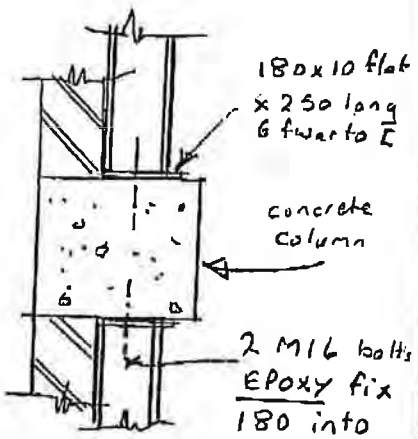
PLAN AT 4TH FLOOR
(LIFT MACHINE ROOM)



SECTION

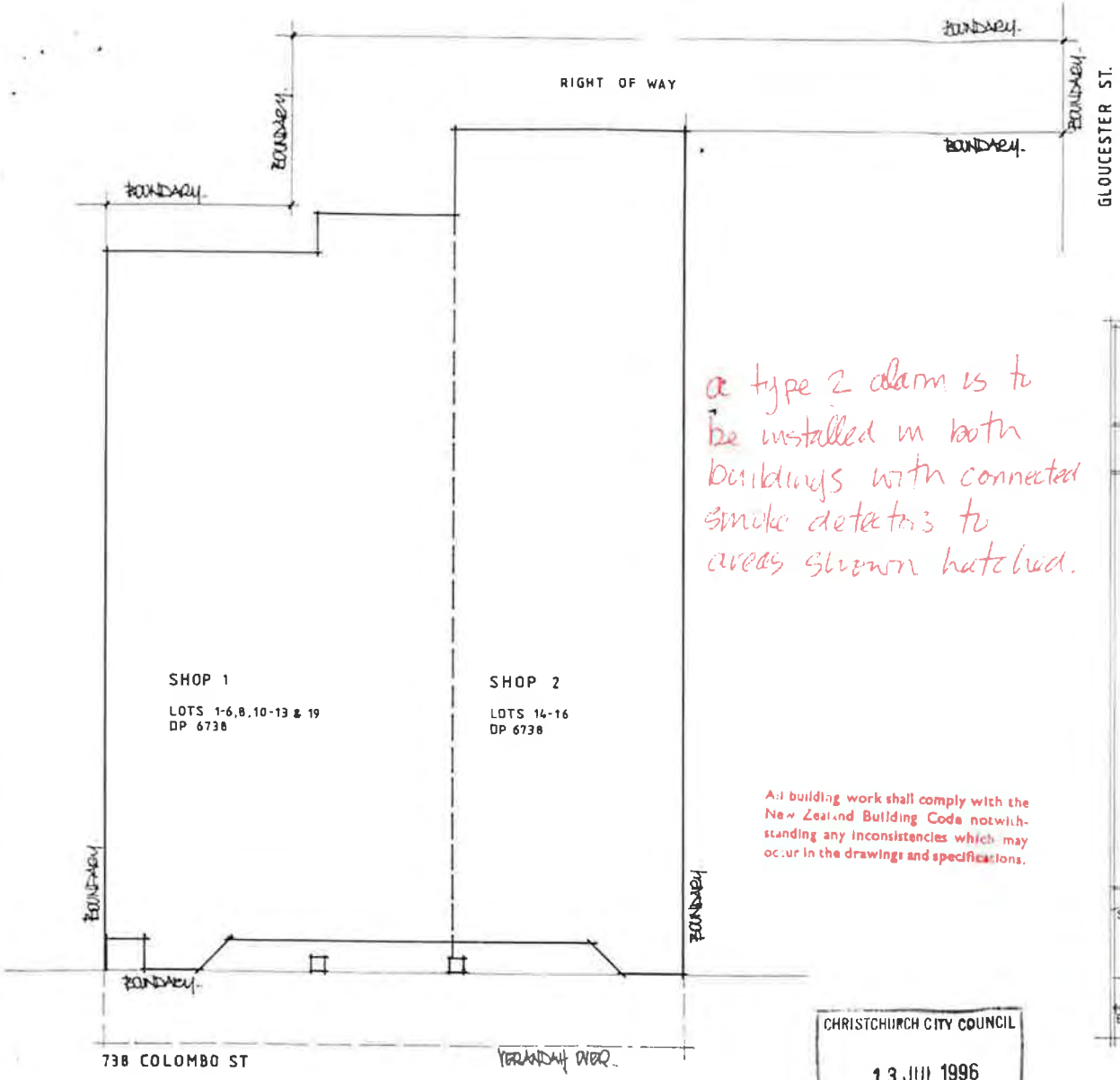


CORNER DETAIL



PLAN AT COLUMN

BUI.COL738.0010.16

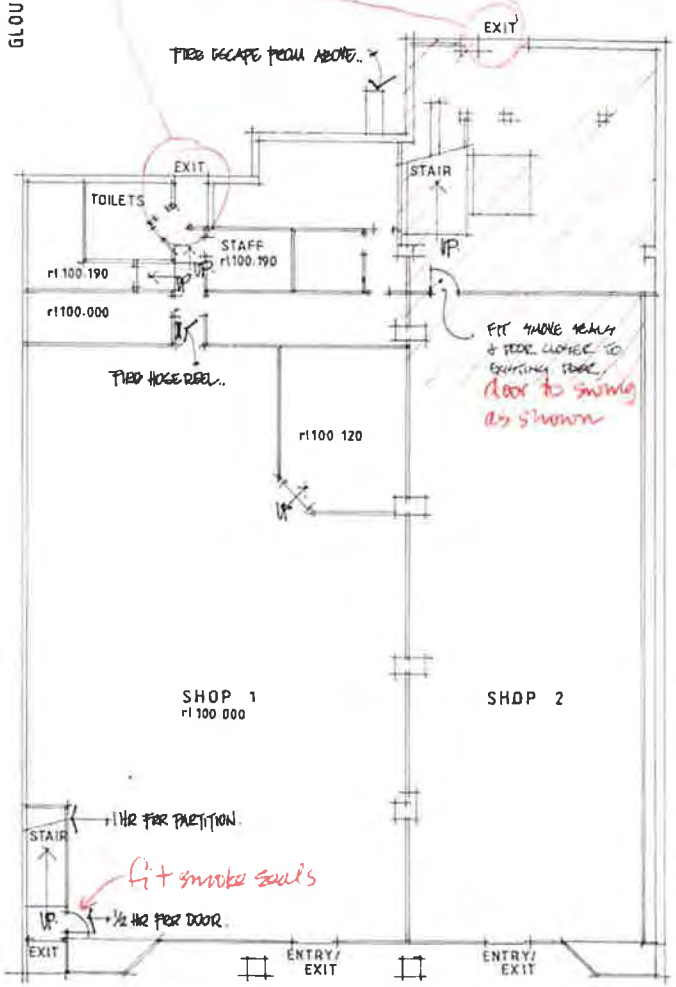


SITE PLAN

a type 2 alarm is to be installed in both buildings with connected smoke detectors to areas shown hatched.

All building work shall comply with the New Zealand Building Code notwithstanding any inconsistencies which may occur in the drawings and specifications.

doors & grille to open in direction of escape and have locking devices to comply with NZBC C2/AS1 7.2.2



smoke detectors to hatched areas

smoke detectors to rear of shop

GROUND FLOOR

CHRISTCHURCH CITY COUNCIL
13 JUL 1996
CONSENT DOCUMENT

AMENDED
C.C.C.

FILE COPY

1 - UPDATED EXISTING MODIFICATIONS TO REAR OF SHOP 2 10-7-96

SHEPPARD & ROUT
ARCHITECTS & PLANNERS
PO Box 2426 Christchurch

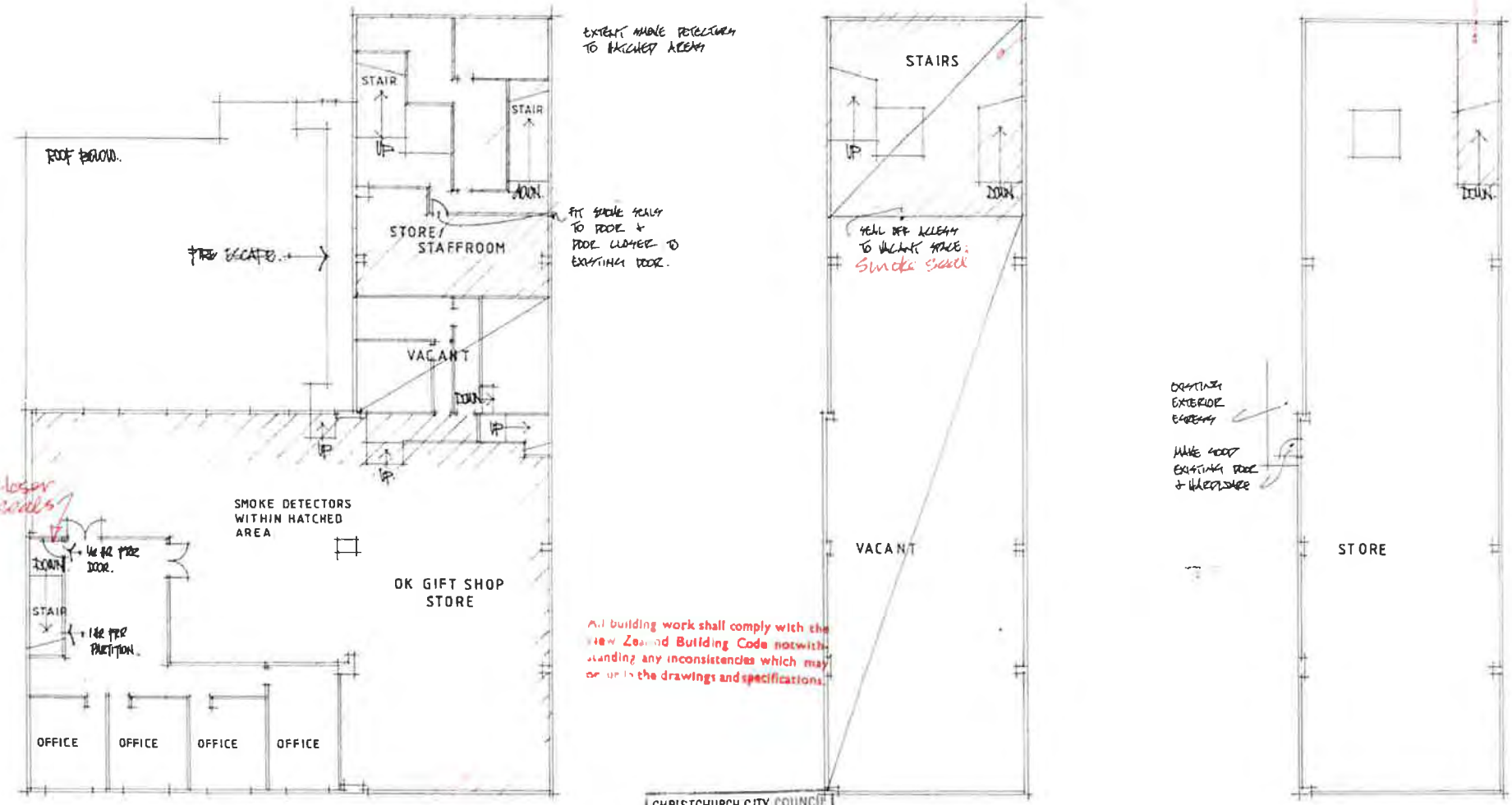
OK GIFT SHOP LTD

A2 1

SCALE 1:200. DATE JUNE 1996. DRAWN TW SHEET No

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK

BUI.COL738.0010.17



CHRISTCHURCH CITY COUNCIL
13 JUL 1996
CONSENT DOCUMENT

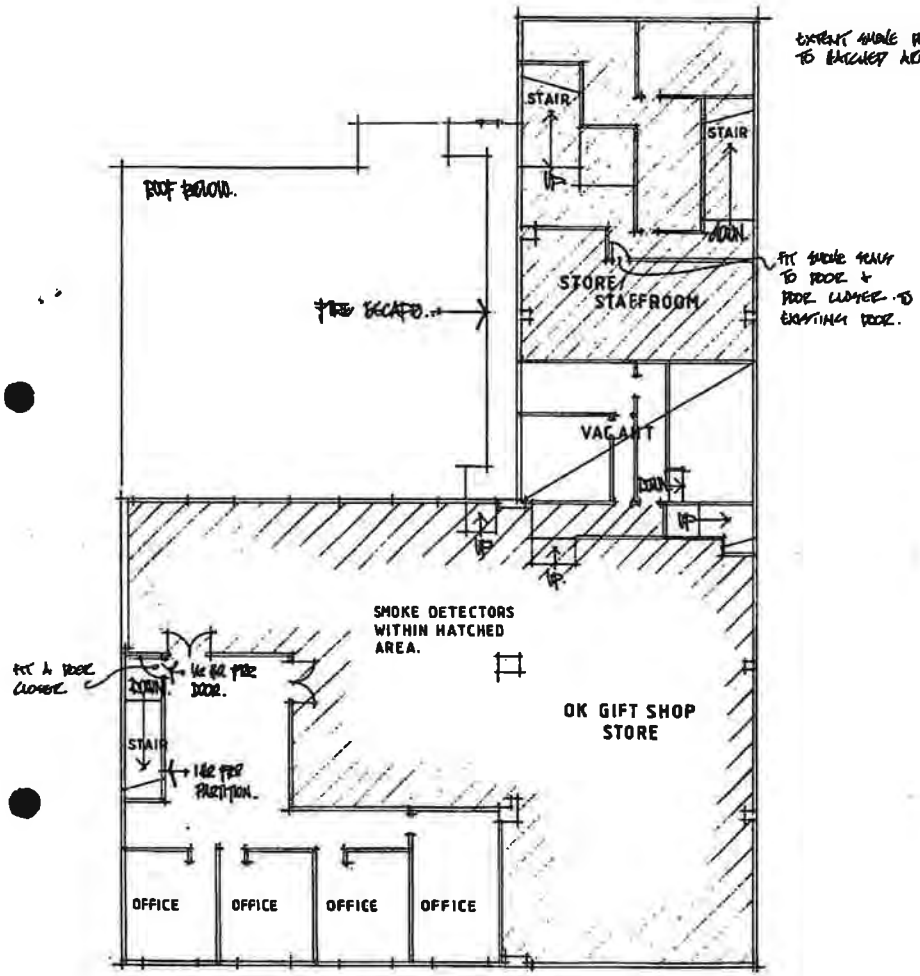
AMENDED
C.C.C. IR

FILE COPY

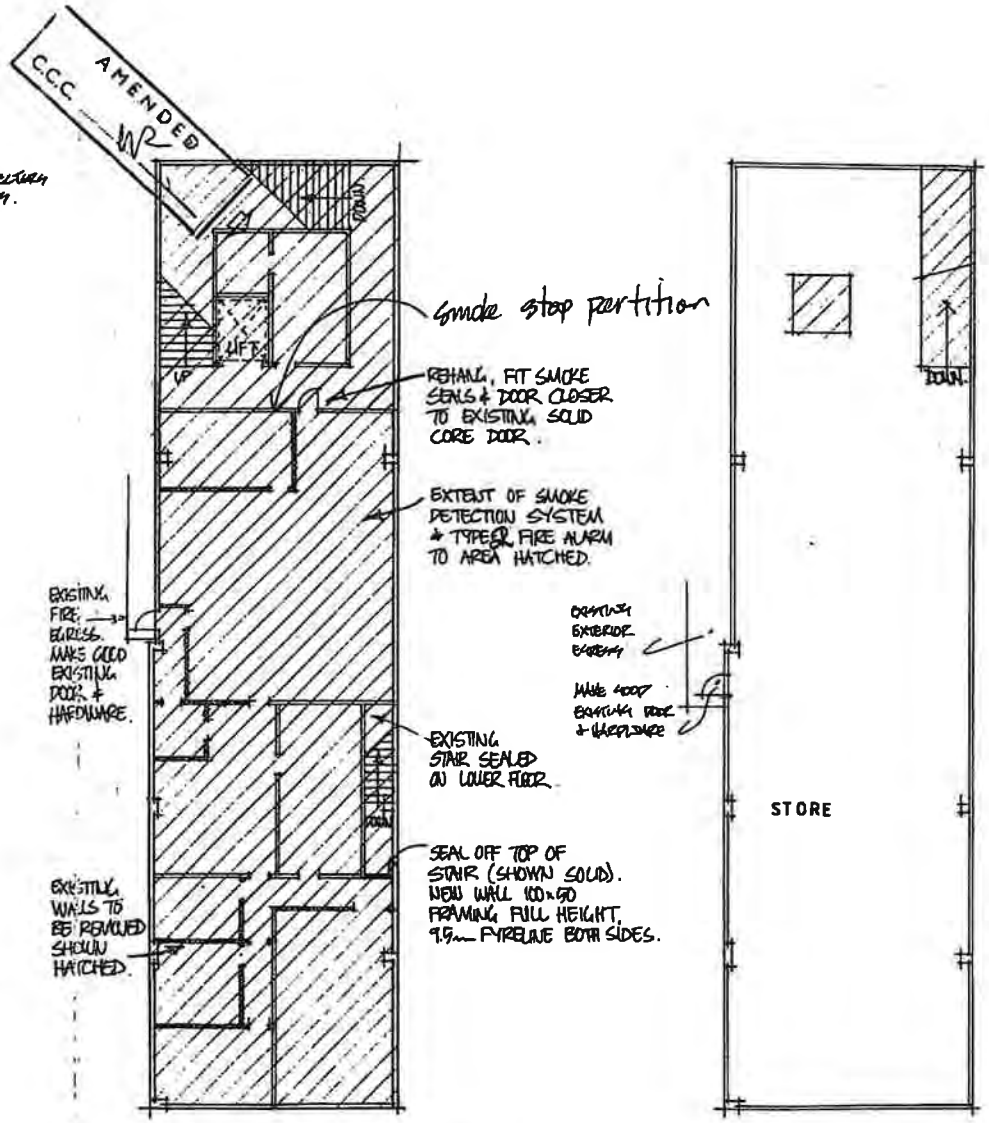
A- UPDATED EGRESS MODIFICATIONS TO REAR OF SHOP 2 10-7-96

SHEPPARD & ROUT ARCHITECTS & PLANNERS PO Box 2426 Christchurch	OK GIFT SHOP LTD	A3 A
	SCALE 1:200 DATE JULY 1996. DRAWN TW	SHEET No

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK



FIRST FLOOR



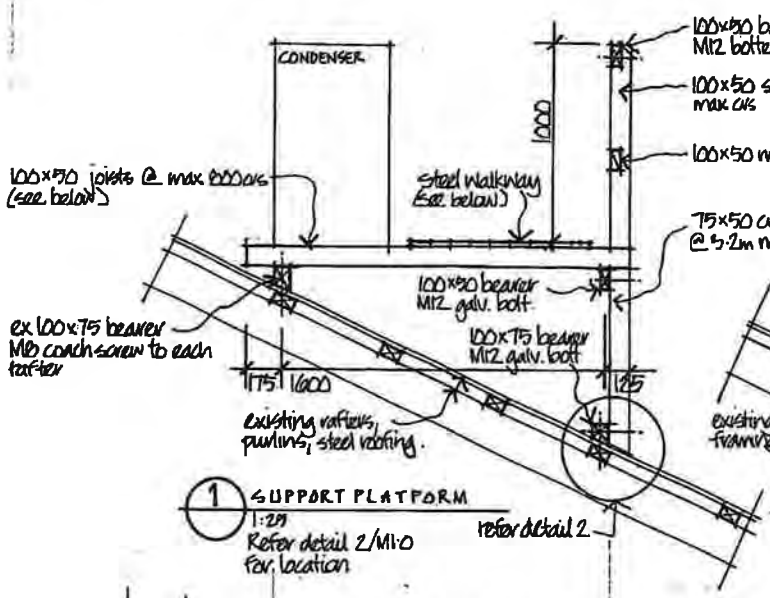
SECOND FLOOR

THIRD FLOOR

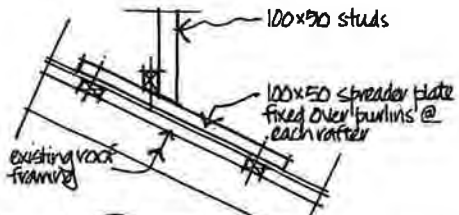
B - ADDITIONAL FIRE PROTECTION TO 2nd FLOOR 22-10-96
A - UPDATED EGRESS MODIFICATIONS TO REAR OF SHOP 2 10-7-96

SHEPPARD & ROUT ARCHITECTS & PLANNERS LTD PO Box 2426 Christchurch	OK GIFT SHOP LTD	A3 B.
	SCALE: 1:200 DATE: [illegible] 1996. DRAWN: TJ.	SHEET No:

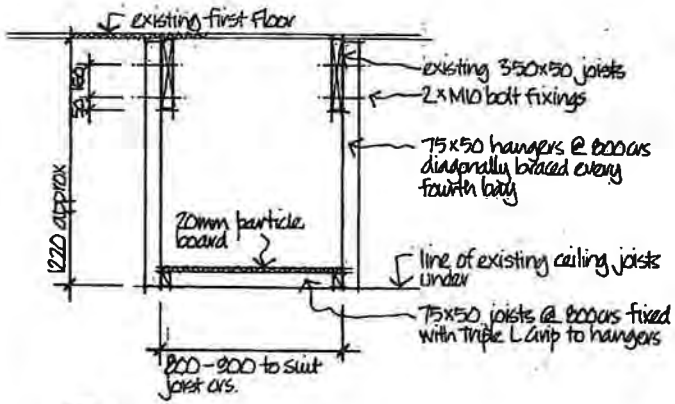
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK



1 SUPPORT PLATFORM
1:25
Refer detail 2/M1.0 for location

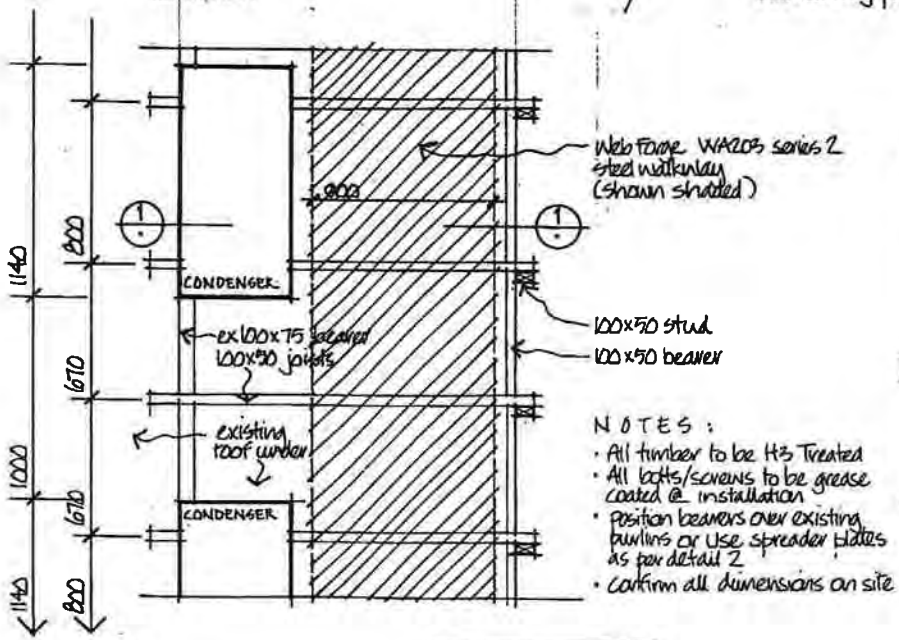


2 ALTERNATIVE FIXING DETAIL
1:25
Required if bearers do not align with existing purlin positions.



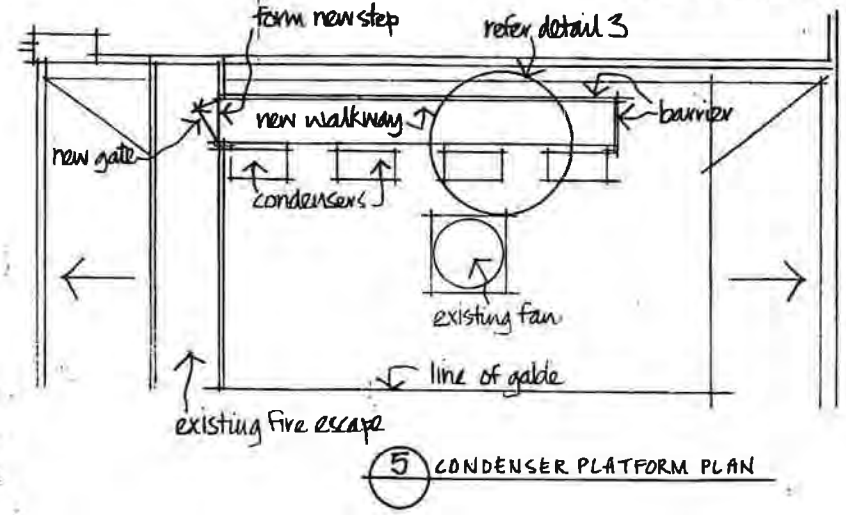
4 CEILING CRAWL SPACE
1:25
Refer plan of builders work sheet M1.0 for location

All building work shall comply with the New Zealand Building Code notwithstanding any inconsistencies which may occur in the drawings and specifications.



NOTES :
- All timber to be H3 Treated
- All bolts/screws to be grease coated @ installation
- Position bearers over existing purlins or use spreader plates as per detail 2
- Confirm all dimensions on site

3 PLATFORM PART PLAN
1:25



5 CONDENSER PLATFORM PLAN

CHRISTCHURCH CITY COUNCIL
13 JUL 1996
CONSENT DOCUMENT

FILE COPY

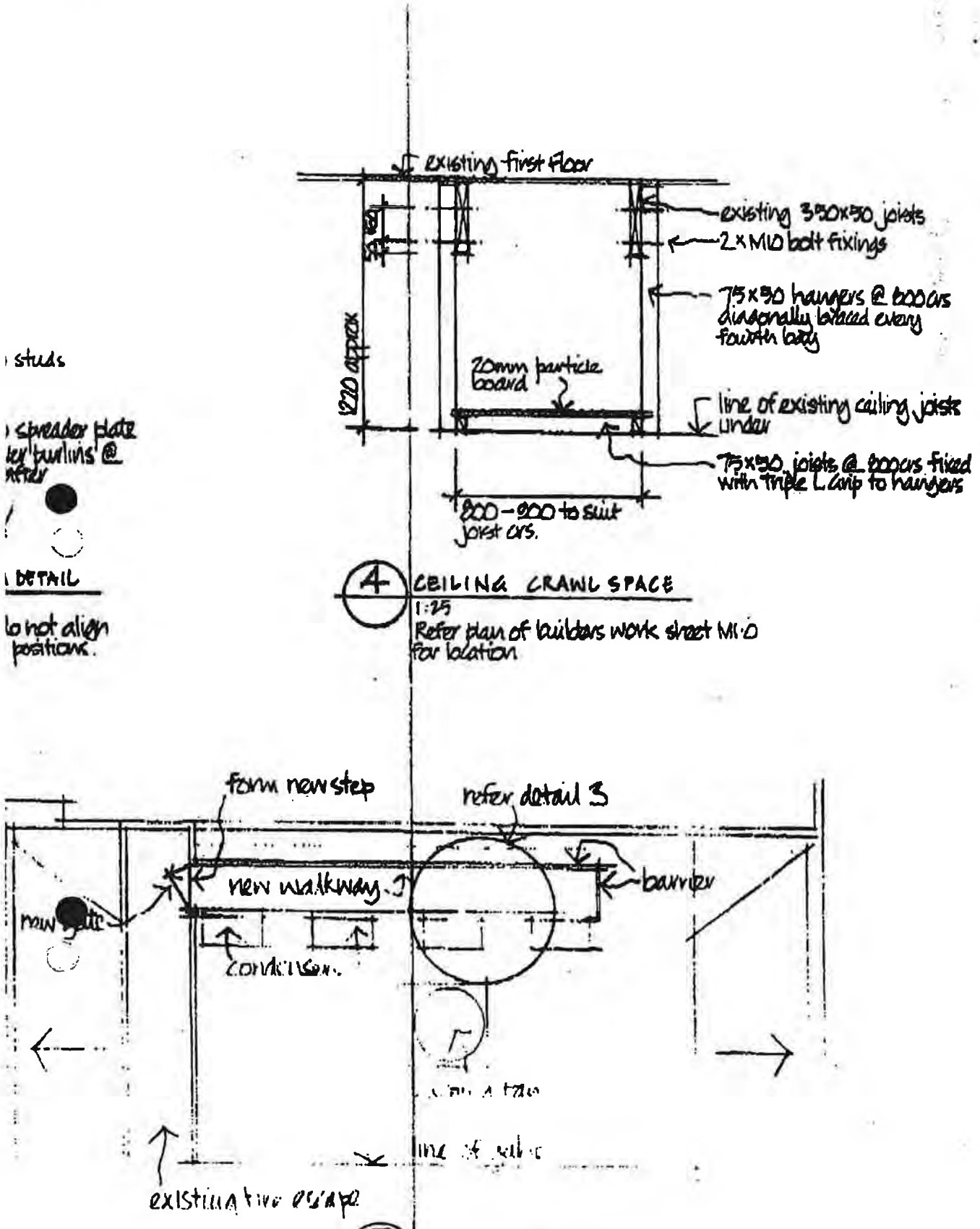
SHEPPARD & ROUT
ARCHITECTS & PLANNERS
PO Box 2426 Christchurch

OK GIFT SHOP
738 COLOMBO STREET CHRISTCHURCH

A1.

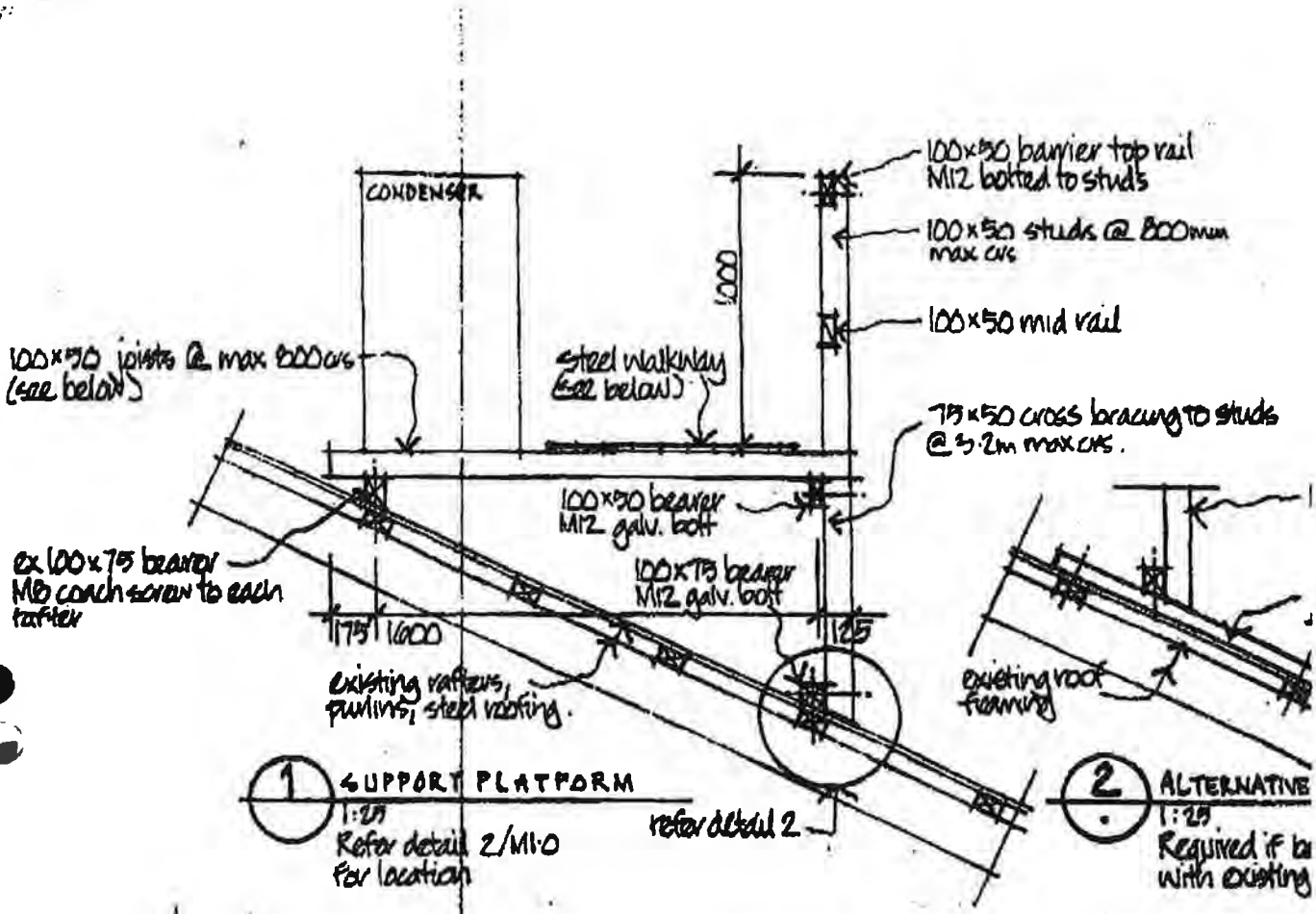
SCALE: 1:25 | DATE: 12.6.96 | DRAWN: RW | SHEET No:

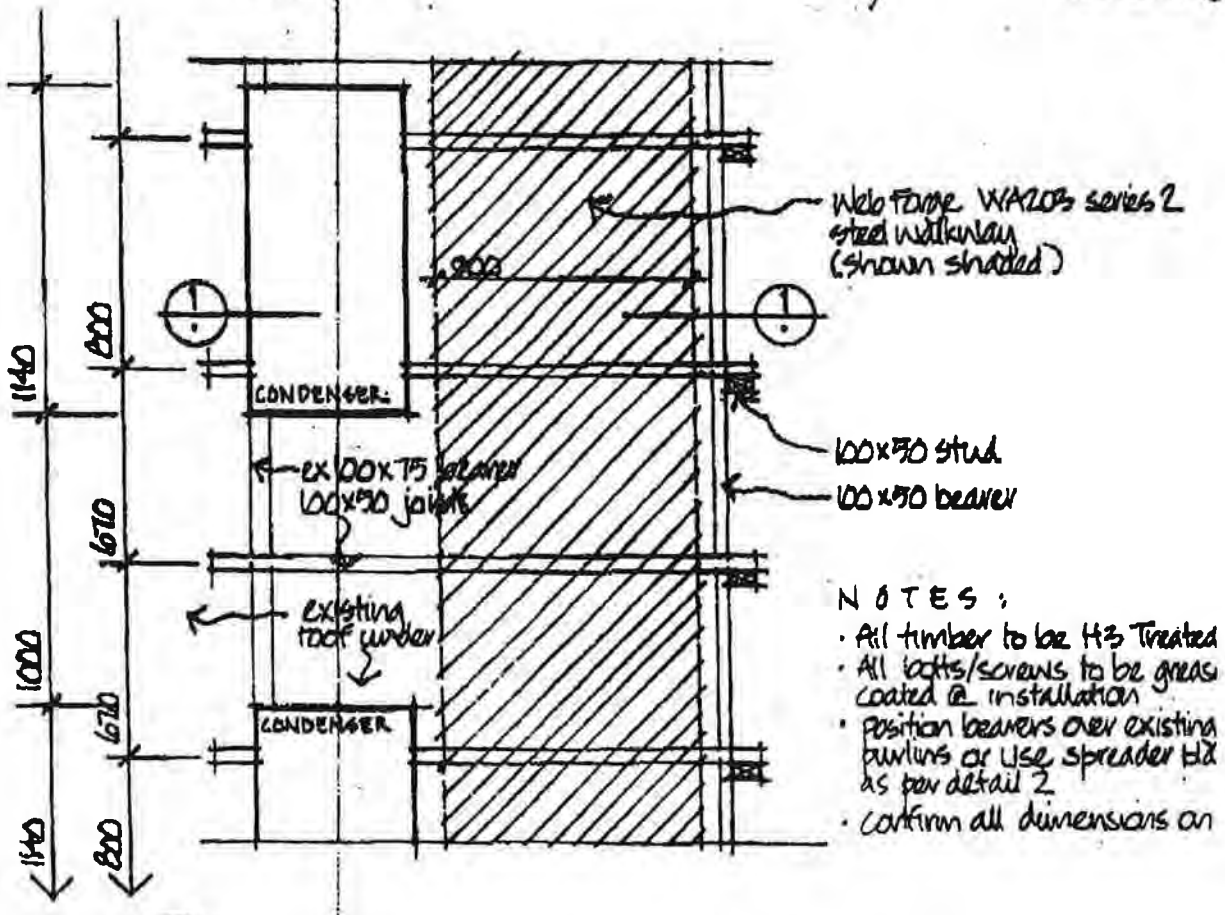
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK



D.J. Eaton 19/6/96

SHEPPARD & ROUT ARCHITECTS & PLANNERS	OK GIFT SHOP 738 COLOMBO STREET CHRISTCHURCH	A1.





D.J. Eaton
19/6/96

+64033774308

Association Consulting Engineers of New Zealand

New Zealand Institute of Architects

Institution Professional Engineers of New Zealand

Building Consent No. 96005415

Building Regulation Clause(s). B1

PRODUCER STATEMENT - PS4 - CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on the reverse side)

ISSUED BY: BUCHANAN & FLETCHER LTD
(Suitably qualified Design Professional)

TO: OK GIFT SHOP LTD
(Owner)

IN RESPECT OF: BUILDING ALTERATIONS & STRENGTHENING
(Description of Building Work)

AT: 734 - 744 COLOMBO ST, CHRISTCHURCH
(Address)

LOT ..... DP ..... SO .....

BUCHANAN & FLETCHER LTD (Design Firm) has been engaged by OK GIFT SHOP LTD (Owner/Developer/Contractor)

to provide CONSTRUCTION MONITORING TO CM2 (Extent of Engagement) services

in respect of clause(s) B1 of the Building Regulations 1992 for the building work described by the drawings and specifications prepared by SHEPPARD ABOUT / BUCHANAN & FLETCHER (Design Firm)

titled 734-744 COLOMBO ST STRENGTHENING and numbered A1, 1007 SKETCH 1 to 3

Authorised variation(s) No. ..... (copies attached) have been issued during the course of the works. I have NOT sighted Building Consent No 95005415 and the attached conditions of building consent.

As an independent design professional covered by a current policy of Professional Indemnity Insurance to a minimum value of $200,000, I or personnel under my control have carried out periodic reviews of the work appropriate to the engagement and based upon these reviews and information supplied by the contractor during the course of the works

I BELIEVE ON REASONABLE GROUNDS that provided all work described in Site Reports 1 to 5 has been completed,

☒ All ☐ Part only as specified in the attached particulars

of the building work under the above building consent with respect to Clause(s) B1 of the Building Regulations 1992 has been completed to the extent required by that building consent.

D.J. Eaton, DIRECTOR BUCHANAN & FLETCHER LTD
(Signature suitably qualified Design Professional)

Date 14/03/97

B.E. M. IPENZ
(Professional Qualifications)

ERB/~~AERB~~ Reg No. 9260

P.O. Box 4571, CHRISTCHURCH
(Address)

Member ACENZ ☒

IPENZ ☒ NZIA ☐

This form to accompany Form 9 of the Building Regulations 1992 for the issue of a Code Compliance Certificate.

18/12/92

10065746

+64033774308

Buchanan & Fletcher Ltd
CONSULTING STRUCTURAL ENGINEERS

fax transmission

To : Christchurch City Council	*Job Name :* Fit Out For NZ Post
	735 Colombo Street
Fax No.: * 11	10065746
Attention : Peter Harrow	*Date :* 24/05/06 *Job No.:* 2245

From : Dave Eaton

No of pages : (including this) 6

Fax No : (03) 377 4308
Phone No : (03) 366 0304
Address : Public Trust Building
152 Oxford Terrace
Christchurch NZ PO Box 4571

Message : Re your letter of 23/05/06 on the above project.

A building permit was granted in July 1991 for the first stage of the securing work at 734 – 744 Colombo Street.

In 1996 Building Consent Number 96005415 was issued for the next stage. A copy of B & F letter of 17 June 1996 and the three structural sketches (1007 sk1, sk2, sk3) are attached.
This work was duly completed, and our PS4 of 14/03/97 issued to Ian Mclean at CCC, (copy attached).

D. J. Eaton

D. J. Eaton
Director
Buchanan & Fletcher Ltd

c.c. Wilkie Bruce Architects
c.c. Virgin Architecture

96005416 Found on 738 Colombo St - (web map)

OK accept remedial work has been carried out.
- Still EQP in terms of new Act

POWELL FENWICK
CONSULTANTS LIMITED
Your quality engineering partner.

consulting engineers
heating + ventilation
mechanical
structural
hydraulic
electrical
acoustic
civil
fire

Unit 3, Amuri Park
Cnr Bealey Ave & Churchill St
P.O.Box 25-108, Victoria St
Christchurch 8144
New Zealand
(03) 366-1777: phone
(03) 379-1626: fax
engineering@pfc.co.nz: email
www.pfc.co.nz: website

BAN:KEF

6 September 2010

EMAILED

Jonothon Liu
PO Box 13206
CHRISTCHURCH 8141

ATTENTION: JONOTHAN LIU

Our Ref: 100703/S/1

Dear Jonothan,

RE: EARTHQUAKE DAMAGE TO BUILDING AT 738 COLOMBO STREET "OK GIFT SHOP"

Subsequent to the earthquake that occurred on the morning of Saturday 4th September 2010 a walk through inspection of the building at 738 Colombo Street was conducted by Ben Niven & Gavin Chinnery of Powell Fenwick Consultants Ltd.

Preliminary indications are that this building is not in immediate danger of structural collapse.

The following specific items have been noted as requiring urgent attention to ensure the ongoing stability of the building:

- None

Other damage that was noted in the building consists of:

- Minor cracking of linings.

It is important to note that information is based on a visual walk through inspection only. It is possible that there is unobserved damage that may require remedial work to ensure the ongoing integrity of the structure. We recommend that a more detailed structural inspection and evaluation is conducted in due course to confirm the ongoing structural suitability of the building.

Please call our office on 366 1777 if you require further information or assistance.

Yours faithfully,
POWELL FENWICK CONSULTANTS LIMITED

pp B T Freeman (DIRECTOR)

M T FREEMAN

100703/S/1

Inspection Summary

Date: 06/09/2010

Site address: 738 Colombo Street

Owner details: Jonothan Liu
021 177 6349
treasure@ihug.co.nz

Tracey – 027 253 4009

Description of building: Concrete frame 3 stories

Advice given on site: Ok for staff only at this stage.

Follow up action recommended: Full structural inspection required.

JW

Christchurch Eq. RAPID Assessment Form - LEVEL 1

Inspector Initials	SR1	Date of Inspection		Exterior Only	✓
Territorial Authority	Christchurch City	Time		Exterior and Interior	

Building Name OK GIFT SHOP

Short Name

Address 738 ~~784~~ COLUMBO ST

GPS Co-ordinates S° E°

Contact Name

Contact Phone

Storeys at and above ground level: 2 | Below ground level:

Total gross floor area (m^2): 16X15 | Year built:

No of residential Units: 0

Photo Taken: Yes / No

Type of Construction

- ☐ Timber frame
- ☐ Steel frame
- ☐ Tilt-up concrete
- ☐ Concrete frame
- ☐ RC frame with masonry infill
- ☐ Concrete shear wall
- ☑ Unreinforced masonry
- ☐ Reinforced masonry
- ☐ Confined masonry
- ☐ Other:

Primary Occupancy

- ☐ Dwelling
- ☐ Other residential
- ☐ Public assembly
- ☐ School
- ☐ Religious
- ☑ Commercial/ Offices
- ☐ Industrial
- ☐ Government
- ☐ Heritage Listed
- ☐ Other

Investigate the building for the conditions listed below:

Overall Hazards / Damage	Minor/None	Moderate	Severe	Comments
Collapse, partial collapse, off foundation	☑	☐	☐	
Building or storey leaning	☑	☐	☐	
Wall or other structural damage	☑	☐	☐	
Overhead falling hazard	☑	☐	☐	
Ground movement, settlement, slips	☑	☐	☐	
Neighbouring building hazard	☑	☐	☐	
Other	☐	☐	☐	

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	RESTRICTED USE	UNSAFE
GREEN ☑	*YELLOW* ☐	*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 %	☑	31-60 %	☐
2-10 %	☐	61-99 %	☐
11-30 %	☐	100 %	☐

Pwp 7/20/16

Lot 1 DP61354

Sign here on completion

Date & Time

ID

Inspection ID 321533 *(Office Use Only)*

CSIL # 9122456 28

Christchurch Eq. RAPID Assessment Form - LEVEL 1

Inspector Initials: DB
Territorial Authority: Christchurch City
Date of Inspection: 27/12/10
Time: 4.00p.m.
Exterior Only: ✓
Exterior and Interior:

Building Name: OK GIFT SHOP
Short Name:
Address: 738 COLOMBO ST.
GPS Co-ordinates: S° E°
Contact Name:
Contact Phone:
Storeys at and above ground level:
Below ground level:
Total gross floor area (m^2):
Year built:
No of residential Units:
Photo Taken: Yes No

Type of Construction

- ☐ Timber frame
- ☐ Steel frame
- ☐ Tilt-up concrete
- ☐ Concrete frame
- ☐ RC frame with masonry infill ?
- ☐ Concrete shear wall
- ☐ Unreinforced masonry
- ☐ Reinforced masonry
- ☐ Confined masonry
- ☐ Other:

Primary Occupancy

- ☐ Dwelling
- ☐ Other residential
- ☐ Public assembly
- ☐ School
- ☐ Religious
- ☑ Commercial/ Offices
- ☐ Industrial
- ☐ Government
- ☐ Heritage Listed
- ☐ Other

Investigate the building for the conditions listed below:

Overall Hazards / Damage	Minor/None	Moderate	Severe
Collapse, partial collapse, off foundation	☐	☐	☐
Building or storey leaning	☐	☐	☐
Wall or other structural damage	☐	☐	☐
Overhead falling hazard	☐	☐	☐
Ground movement, settlement, slips	☐	☐	☐
Neighbouring building hazard	☐	☐	☐
Other			

Comments

PAUL FENWICK
HOUSE INSPECTED & APPROVED; REPORT SIGHTED
10.30. 26/12/10.
RECORDED.

(WHERE IS ENGINEERS REPORT ??

Choose
UNSAF
main e

ilding are grounds for an
ace INSPECTED placard at

NSAFE
RED ☐

Recor

Furthe

Tick
☐
☑
☐

PAUL FENWICK

Estimated Overall Building Damage (Exclude Contents)

None	☐		
0-1 %	☐	31-60 %	☐
2-10 %	☐	61-99 %	☐
11-30 %	☐	100 %	☐

Sign here on completion
Date & Time: 27/12/10.
ID: NB

Inspection ID _____ *(Office Use Only)*

USAR Damaged Building Reconnaissance Report

Name E. Owsley Time 1100hrs Date 27/12/10

Building Description

Address 738 Colombo St

Building Name OK Gift Shop

GPS Coordinates (if available)

No. of stories at and above ground ____

No. of stories below ground 2

Approx year of construction ____

Construction
(tick more than 1 if required)

- ☐ Timber frame
- ☐ Steel frame
- ☐ Concrete frame
- ☐ RC frame / masonry infill
- ☐ Concrete shear wall
- ☐ Unreinforced masonry
- ☐ Confined masonry
- ☐ Other ____

Use
(tick more than 1 if required)

- ☐ Dwelling
- ☐ Multi Residential (No. ____)
- ☐ Public assembly
- ☐ School
- ☐ Religious
- ☑ Commercial retail
- ☐ Commercial offices
- ☐ Industrial
- ☐ Government
- ☐ Heritage
- ☐ Other ____

Damage / Hazards

	Minor	Moderate	Severe
Collapse, partial collapse	☐	☐	☐
Building or storey leaning	☐	☐	☐
Parapet damage	☐	☐	☐
Overhead falling hazard	☐	☐	☐
Ground movement, settlement	☐	☐	☐
Endangering neighbouring building	☐	☐	☐
Endangered by neighbouring building	☐	☐	☐
Glass Hazard	☐	☑	☐

Estimated Overall Building Damage

- 0-1% ☐
- 2-10% ☐
- 11-30% ☐
- 31-60% ☐
- 61-99% ☐
- 100% ☐

Photos Taken Y☐ N☐

Other / general damage description comments..

Side parapits & cracks in lower facade.

Actions

Cordon / Public Safety

Temporary hazard tape applied Y☐ N☐

Additional cordon / fencing required Y☐ *(Pink / Red) N☐ Urgent ☐

Non-urgent ☐

Imminent danger to public reported to USAR command for action Y☐ N☐

Comments…

*(colours noted are to be marked on maps)

Engineering assessment required Y☑ *(Blue) N☐

Call me to discuss ☐

Urgent ☐ Non-urgent ☐

My contact phone ____
*(Lime Green)

(CCC Office Use) - ☐ Entered into CCC Database ☐ Cordon requested ☐ Rapid eng assessment requested

Grid 3

Christchurch Eq RAPID Assessment Form - LEVEL 2

Inspector Initials: Smw
Territorial Authority: Christchurch City
Date: 15th Nov
Time: 1110
Final Posting (e.g. UNSAFE): UNSAFE

Building Name: OK Gifts
Short Name:
Address: 738 Colombo St.

GPS Co-ordinates: S° E°
Contact Name:
Contact Phone:

Storeys at and above ground level: 2-3
Below ground level: /
Total gross floor area (m^2):
Year built:
No of residential Units:

Photo Taken: Yes No

Type of Construction

- ☐ Timber frame
- ☐ Steel frame
- ☐ Tilt-up concrete
- ☑ Concrete frame Partial
- ☐ RC frame with masonry infill
- ☐ Concrete shear wall
- ☑ Unreinforced masonry
- ☐ Reinforced masonry
- ☐ Confined masonry
- ☐ Other:

Primary Occupancy

- ☐ Dwelling
- ☐ Other residential
- ☐ Public assembly
- ☐ School
- ☐ Religious
- ☐ Commercial/ Offices
- ☐ Industrial
- ☐ Government
- ☐ Heritage Listed
- ☑ Other Retail

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	☐	☐	☑	Rear of bldg collapse.
Building or storey leaning	☑	☐	☐	
Wall or other structural damage	☐	☐	☑	Front façade
Overhead falling hazard	☐	☐	☑	to front of bldg / path, near
Ground movement, settlement, slips	☑	☐	☐	of ground floor.
Neighbouring building hazard	☐	☐	☑	Unstable parapet
Electrical, gas, sewerage, water, hazmats	☐	☑	☐	exposed wiring

Record any existing placard on this building:

Existing Placard Type (e.g. UNSAFE): UNSAFE.

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): FOOTPATH
- ☐ Detailed engineering evaluation recommended
  - ☐ Structural ☐ Geotechnical ☐ Other:
- ☐ Other recommendations:

Estimated Overall Building Damage (Exclude Contents)

None	☐		
0-1 %	☐	31-60 %	☐
2-10 %	☐	61-99 %	☐
11-30 %	☑	100 %	☐

Sign here on completion

Date & Time
ID

Inspection ID: _____ (Office Use Only) 75000282

Structural Hazards/ Damage	Minor/None	Moderate	Severe	Comments
Foundations	☑	☐	☐	
Roofs, floors (vertical load)	☐	☐	☑	Collapse of rear to gnd floor
Columns, pilasters, corbels	☐	☑	☐	Spalling / loss of stones
Diaphragms, horizontal bracing	☐	☐	☑	Loss of front wall, no lateral bracing at this point.
Pre-cast connections	☐	☐	☐	
Beam	☐	☐	☐	
Non-structural Hazards / Damage				
Parapets, ornamentation	☐	☐	☑	
Cladding, glazing	☐	☐	☑	Loss to front wall
Ceilings, light fixtures	☐	☐	☑	
Interior walls, partitions	☐	☑	☐	
Elevators	☐	☐	☐	
Stairs/ Exits	☑	☐	☐	
Utilities (eg. gas, electricity, water)	☐	☑	☐	
Other	☐	☐	☐	
Geotechnical Hazards / Damage				
Slope failure, debris	☑	☐	☐	
Ground movement, fissures	☑	☐	☐	
Soil bulging, liquefaction	☑	☐	☐	

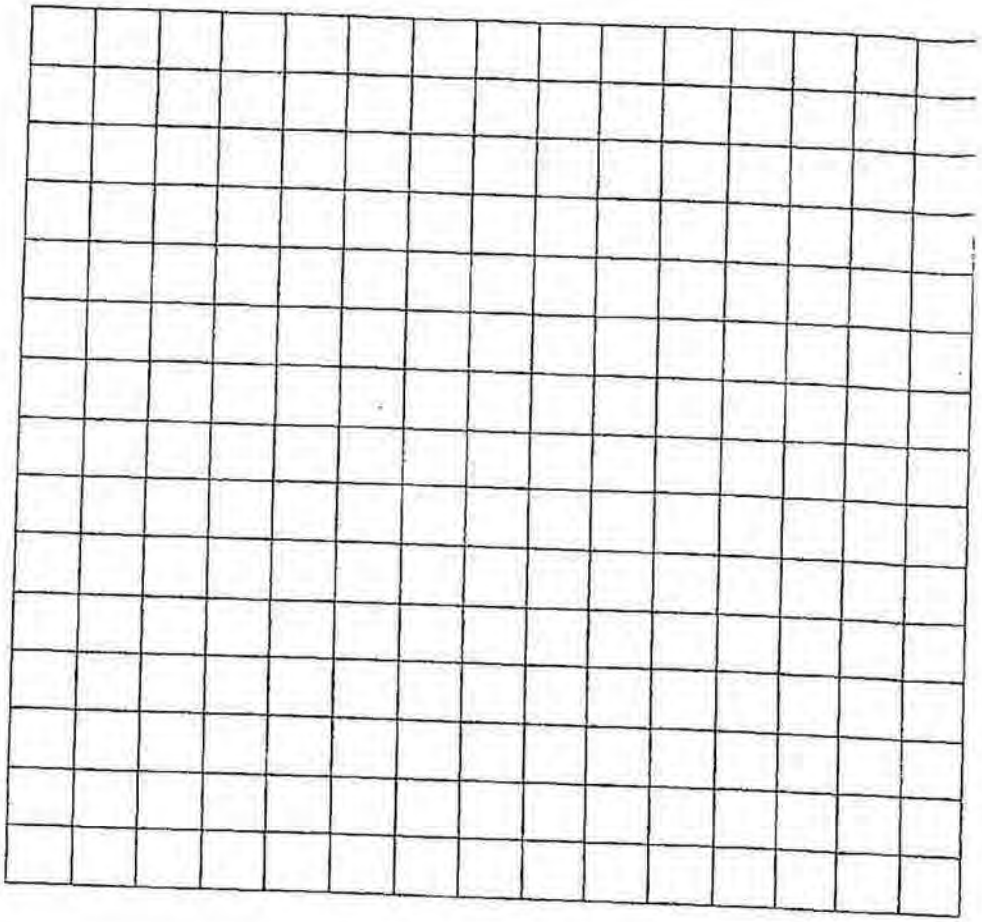
General Comment: Note: First floor open to adjoining bldg (736 Colaba), apparent change of structure.

Usability Category

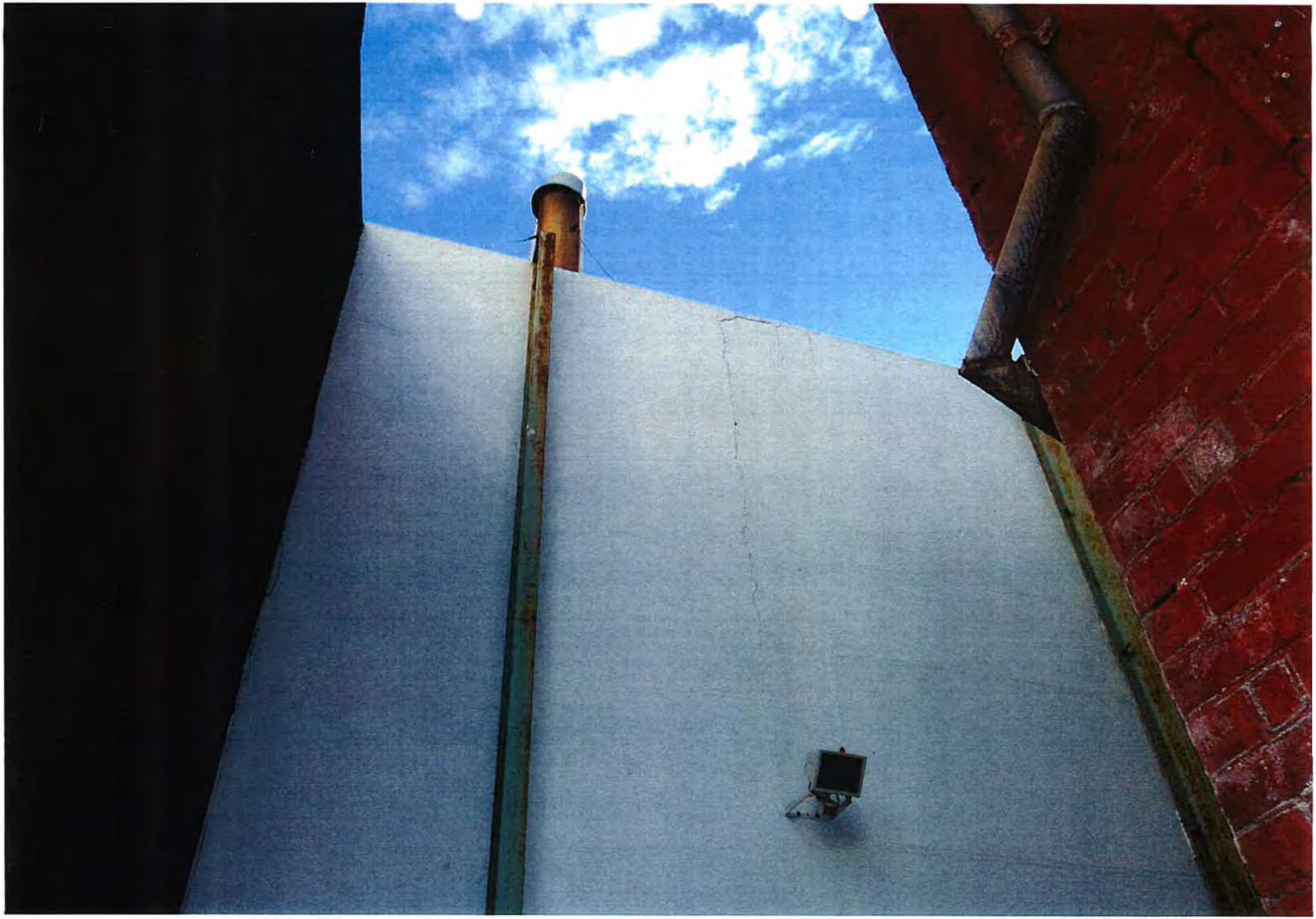
Damage Intensity	Posting	Usability Category	Remarks
Light damage *Low risk*	Inspected (Green)	G1. Occupiable, no immediate further investigation required	
		G2. Occupiable, repairs required	
Medium damage *Medium risk*	Restricted Use (Yellow)	Y1. Short term entry	
		Y2. No entry to parts until repaired 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	

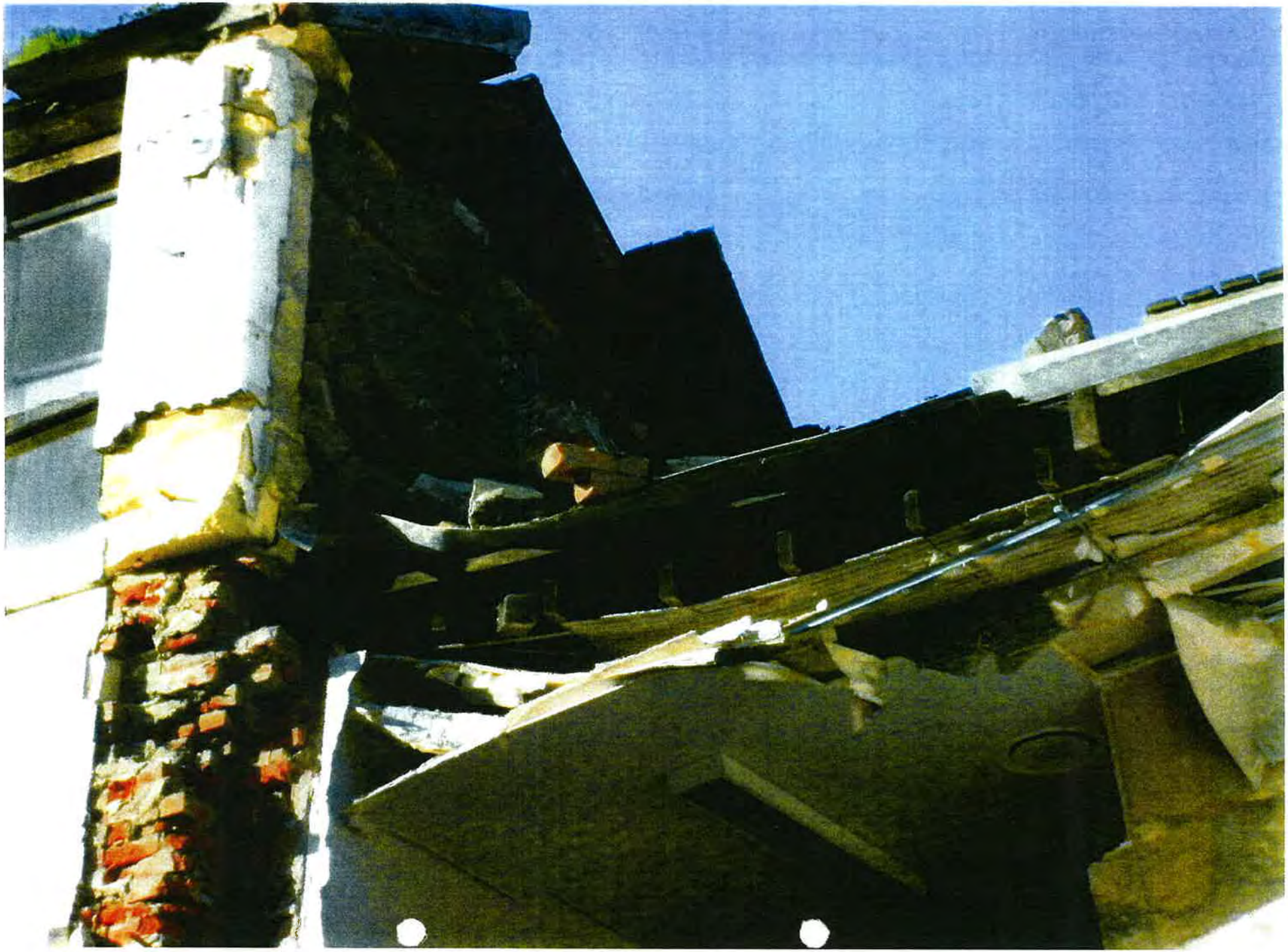
 Inspection ID: _____ *(Office Use Only)*

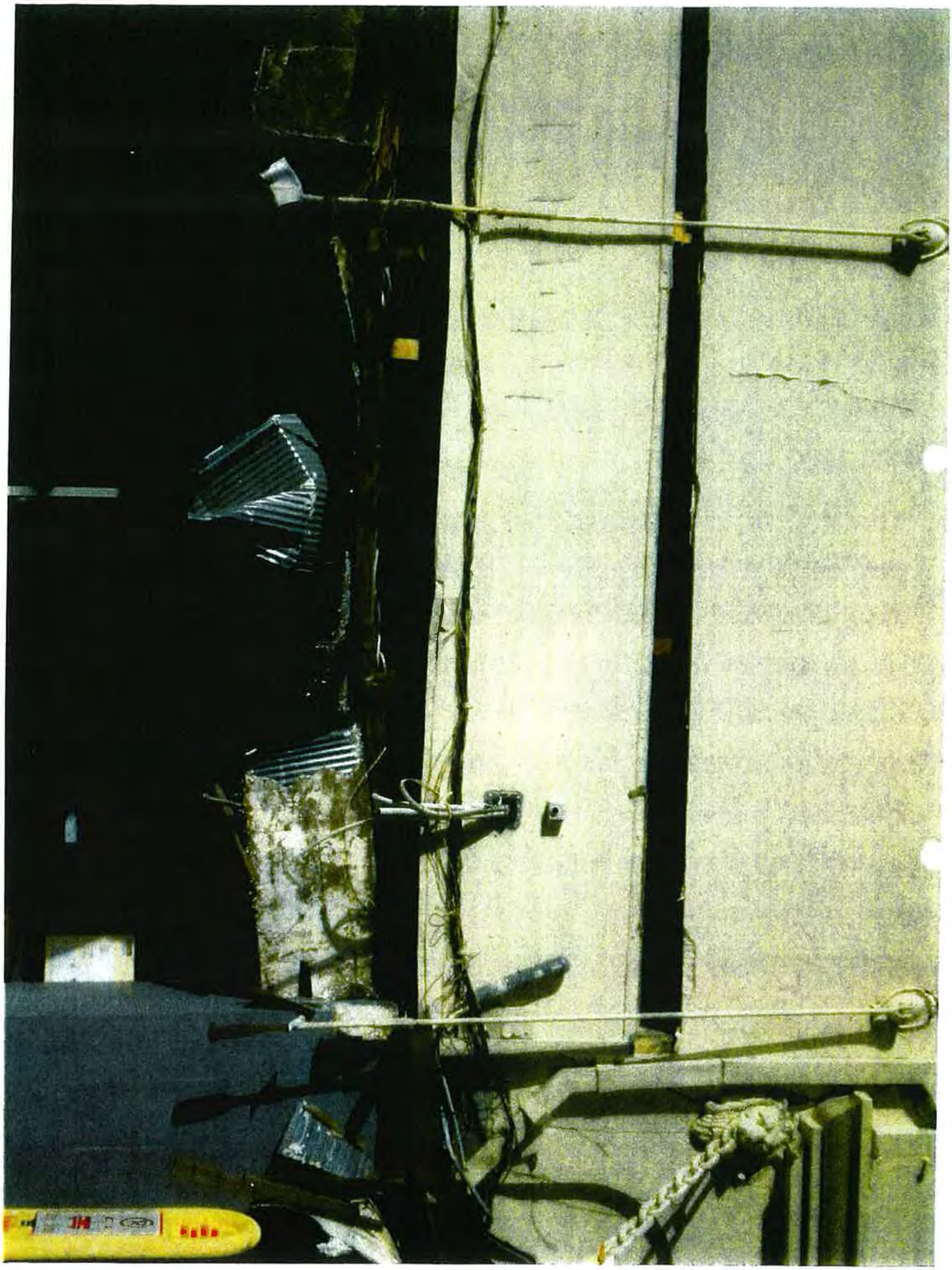
Sketch (optional)
Provide a sketch of the entire building or damage points. Indicate damage points.



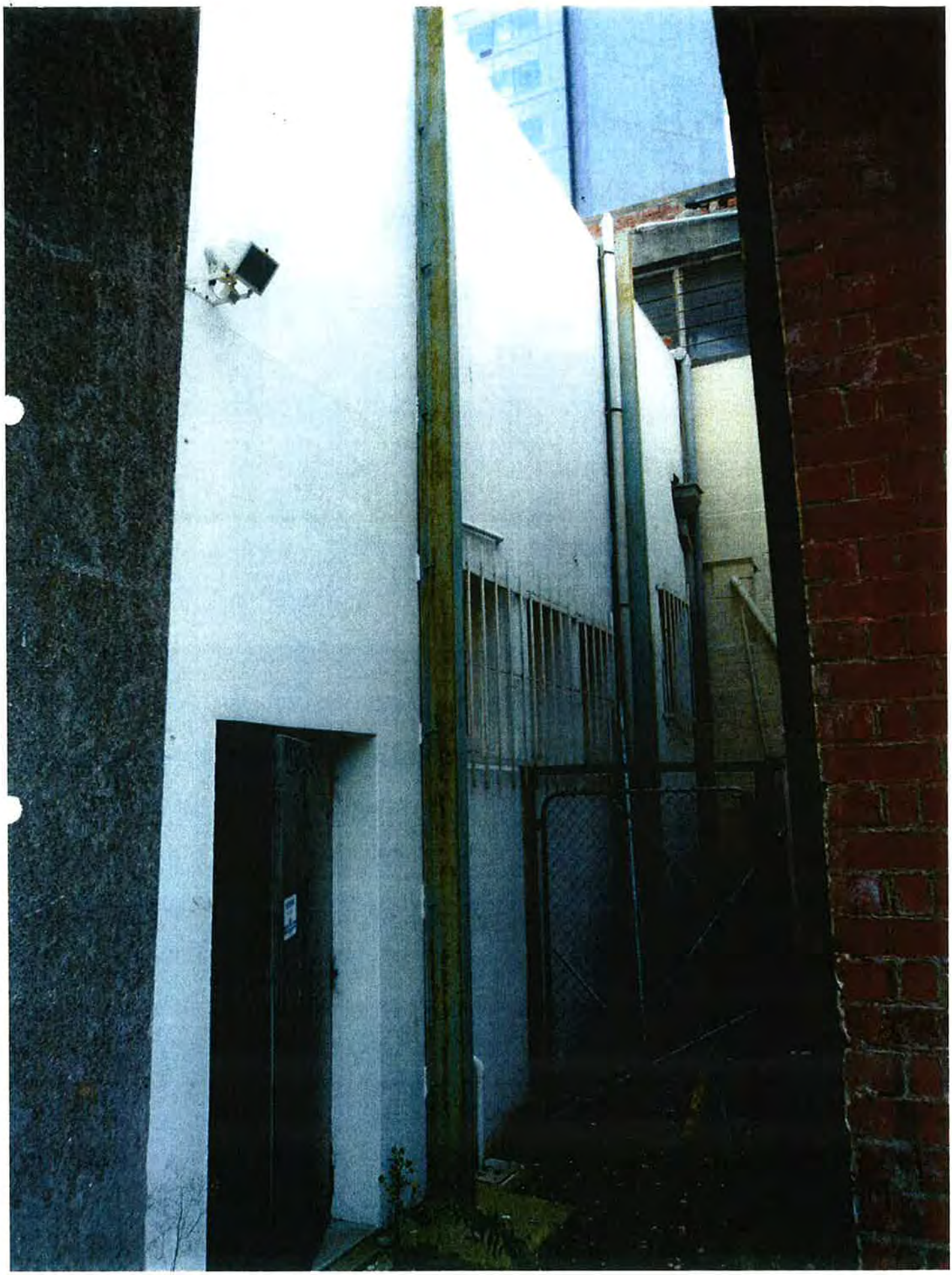
Recommendations for Repair and Reconstruction or Demolition (Optional)








736
Columbia
738
Columbia
Conc
wall.



LP:LP

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structural
hydraulic
electrical
acoustic
civil
fire

Unit 3, Amuri Park
Cnr Bealey Ave & Churchill St
P.O.Box 25-108, Victoria St
Christchurch 8144
New Zealand
(03) 366-1777: phone
(03) 379-1626: fax
engineering@pfc.co.nz: email
www.pfc.co.nz: website

9 sept 2011

Phil Buckman,
McLarens Young International,
Global Claims Services
PO Box 424,
TIMARU 7940

ATTENTION: Phil

Our Ref: 110869/S/1

Dear Phil,

RE: EARTHQUAKE DAMAGE TO BUILDINGS AT 736-738 COLOMBO ST, CHRISTCHURCH

Powell Fenwick Consultants Ltd has been engaged by McLarens Young to inspect the above property.

SCOPE OF REPORT

The scope of this report is for the building insurer to be made aware of any structural issues that may have occurred to the building as a result of the earthquake on the 22nd of February 2011 and subsequent aftershocks up to the time of the last inspection.

In order to assess the structural suitability for use, and to identify any possible ongoing issues inspections of the building were conducted by Stuart Winterbourn and Luke Pickering on the 15th March 2011, Phil Paterson and Luke Pickering of Powell Fenwick Consultants Ltd on the 29th June 2011 and by Luke Pickering and Ben Haines on the 26th August 2011

The inspection covered visually available aspects of the buildings internally and externally. We have not reviewed any drawings and have not removed any coverings to assess the structure. We note that this report is specifically for the purpose of assessing the earthquake damage to date and that significant aftershocks or other events could further affect the structural integrity of the buildings.

CONSTRUCTION.

The building at 738 Colombo St is a two level building with brick infill walls to Colombo St. The building at 736 Colombo St is a five level concrete-framed building with brick infill walls. At the 1st floor level the two buildings are opened to each other in order to allow a larger space to be utilised. 738 Colombo St has a corrugated iron roof, 736 appears to be concrete. We believe that 736 Colombo St may have been built in the early 1900's, 738 possibly a little later.

The majority of this damage appears to have occurred to 738 at ground floor, and 736/738 at first floor level and above. We believe that in a moderate earthquake there is a real danger of collapse or partial collapse to the buildings at these levels, and note that partial collapse of the top level of 736 has already occurred and failure of the roof superstructure where bricks have fallen through to 738.

EARTHQUAKE DAMAGE TO THE BUILDING.

Our initial evaluation gives indications that these buildings have had severe damage as a result of the earthquakes to date and that, due to this, there is enhanced danger of structural collapse in the event of a further moderate event. Damage noted between our inspections has worsened, in particular to the first floor area and above.

This earthquake damage is listed below. Note that not every conceivable space was able to be inspected, the damage noted is what was visually observed only.

Ground floor:

- Significant failure of roof structure to rear of building (738) due to falling masonry.
- Cracking to walls and around to stairs at rear of 736

First floor:

- Severe cracking to columns at west of 736. Loss of material, exposure of reinforcing and possible displacement of concrete columns at level of cracking. Beam/column cracking.
- Loss of brick infill to south wall (736) failure to west wall (738). Sections of west wall have fallen out to street and offices are completely exposed
- Failure of verandah to 738 externally
- Failure of ceiling laths and plaster, significant water damage to ceiling and floor of 738 near stairs

Other:

- Severe cracking to columns around stairs at rear of 736, severe cracking to stair landings.
- Severe stress cracking evident to east (rear) wall of 736
- Partial collapse of top level
- Loss of brick infill or plaster to infill throughout

In terms of ground issues we have not noted any liquefaction to the site or surrounding area. No gross movement or fissuring was evident and the building is not noticeable off-level but could be displaced where severe column cracking has occurred. These are visual observations only; a vertical displacement survey would be required to ascertain further.

REMEDIATION WORK

As the building stands at present it is dangerous both in real terms and in legislative terms. Sections of the western façade appear to have dropped out completely and have significant loss of support and connection as viewed internally. The walls at first floor level have lost a significant amount of material and the stairs, columns and eastern wall (736) are extensively cracked. Columns and other walls at various levels show notable to severe damage such that structural integrity is significantly compromised.

Further work would be required in order to fully assess suitable remediation measures. For this assessment to occur we would require coverings to be removed from much of the ground floor, from any plaster cover to columns, from ceilings such that beam/column joints may be closely inspected and/or any other roof structure that is currently hidden and from various walls where coverings inhibit a reasonable view of the main structure.

It is our considered opinion, taking into account various factors, that the building stands a very real chance of collapse, particularly to the first floor area, in another moderate event. Any collapse at this level would obviously have severe implications to all other levels and to an area some 25m surrounding the building (this being approximately 1.5 times the height of the building – a recognised 'fall zone'). Any personnel working in or around the building would stand a significant chance of being injured or even killed in such an event. Given the increased probability of a moderate event occurring (per information supplied to us by GNS on the 15th June) we take the view that we cannot at this time reasonably ask a contractor to carry out the necessary stripping of coverings required before we can assess the building further for remedial works.

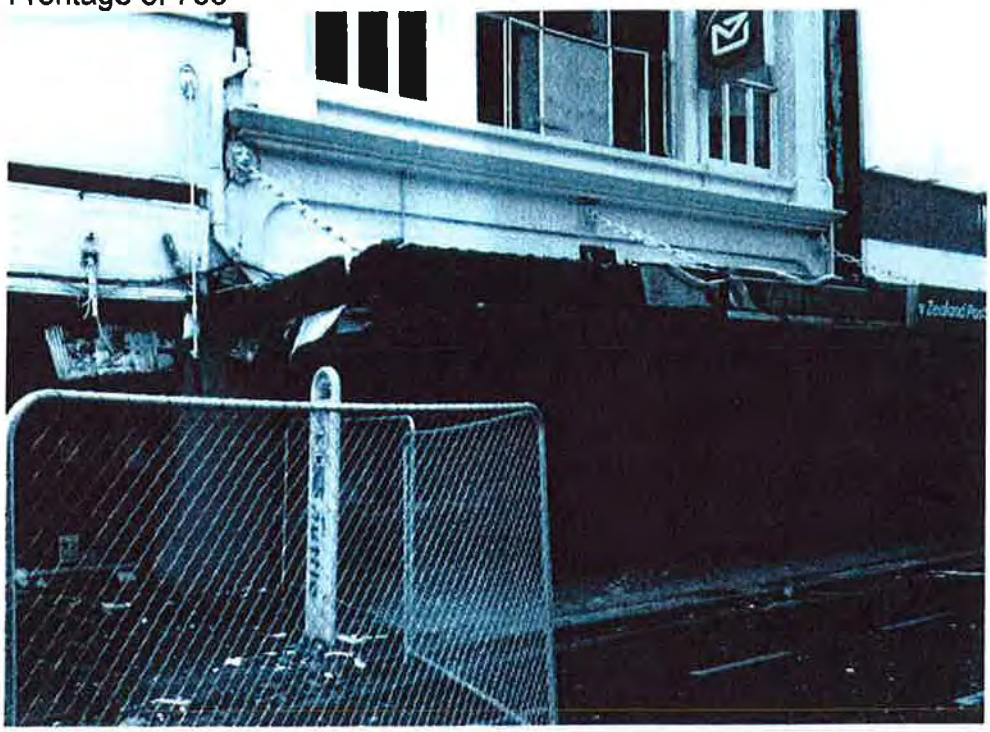
We note that we have not been able to reasonably assess damage to the structure at the ground floor in either building but that we would expect some damage to be present at this level. Due to the more brittle nature of design of this building the damage that has occurred to the first floor levels and above may possibly be extended to some of the columns and walls of the ground floor in various sections.

In order to more fully assess the building without putting anyone in further danger we would need to assess any plans that may be held on file for the building in order to determine the likelihood and location of damage presently unseen. Additionally such plans may give the ability to assess the structure more accurately in terms of relation to NBS and/or provide sufficient detail to be able to cost repairs vs replacement of the building.

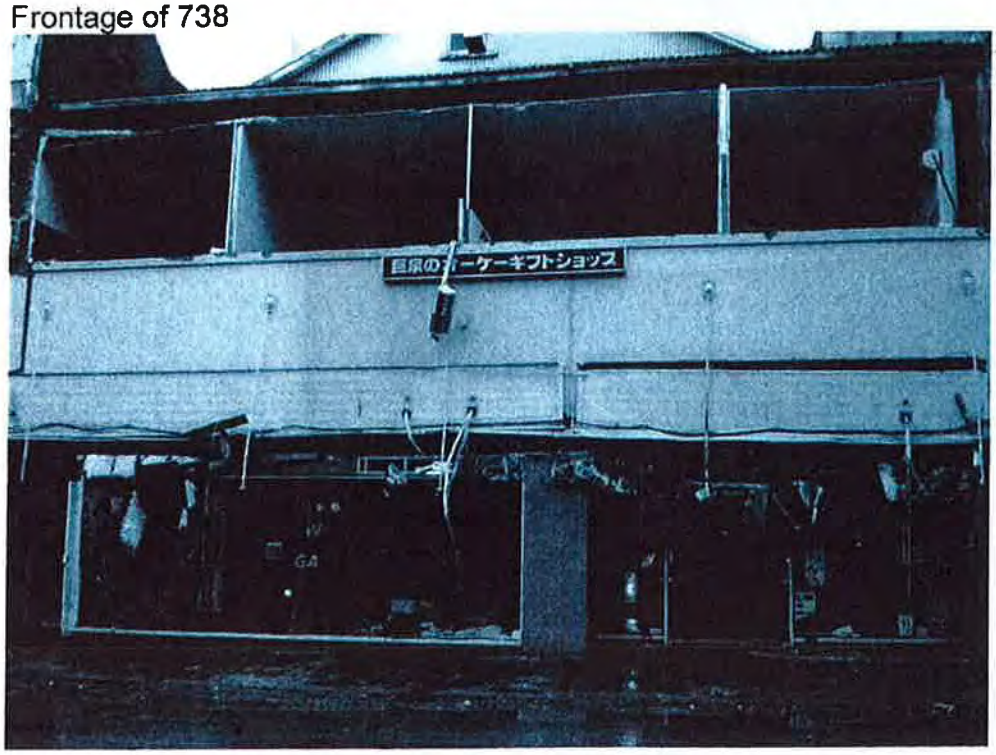
We do note that it is clear that any remediation considered to the building would necessarily be widespread and significant in nature. Propping and reconstruction or replacement of columns, fitment of temporary and permanent seismic load bracing, replacement of most if not all of the exterior walls, replacement of some roof structure and complete reconstruction of the uppermost level to 738 would be required. Extensive cosmetic damage repair would additionally be required to wall and ceiling coverings, floors and partitions. The stairs are likely to require major repair or replacement.

APPENDIX: PHOTOGRAPHS OF EARTHQUAKE DAMAGE.

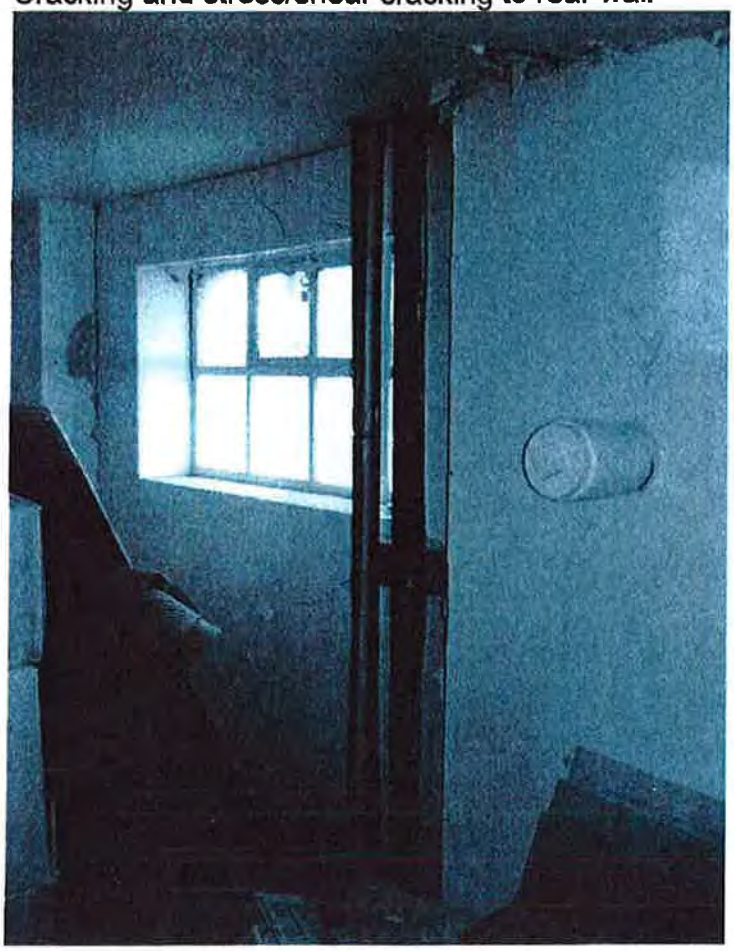
Frontage of 736



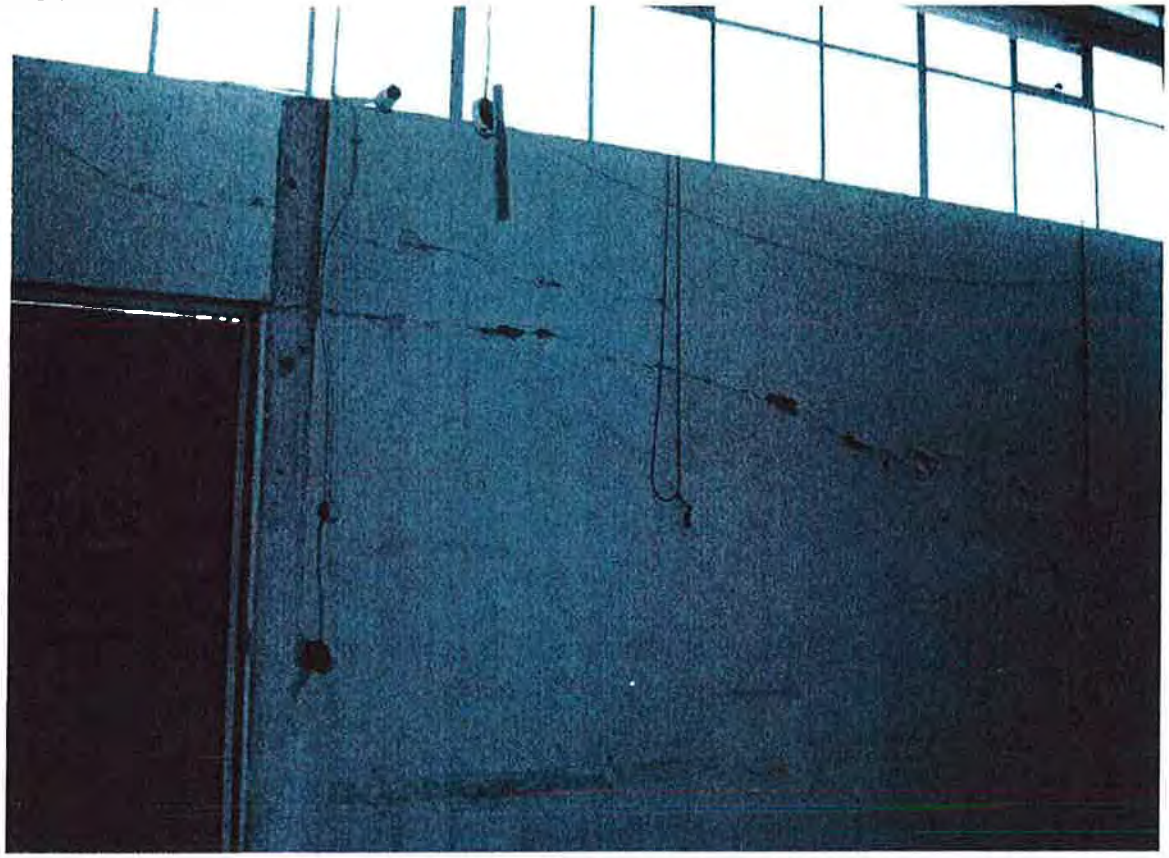
Frontage of 738



Cracking and stress/shear cracking to rear wall



Cracking to north wall.

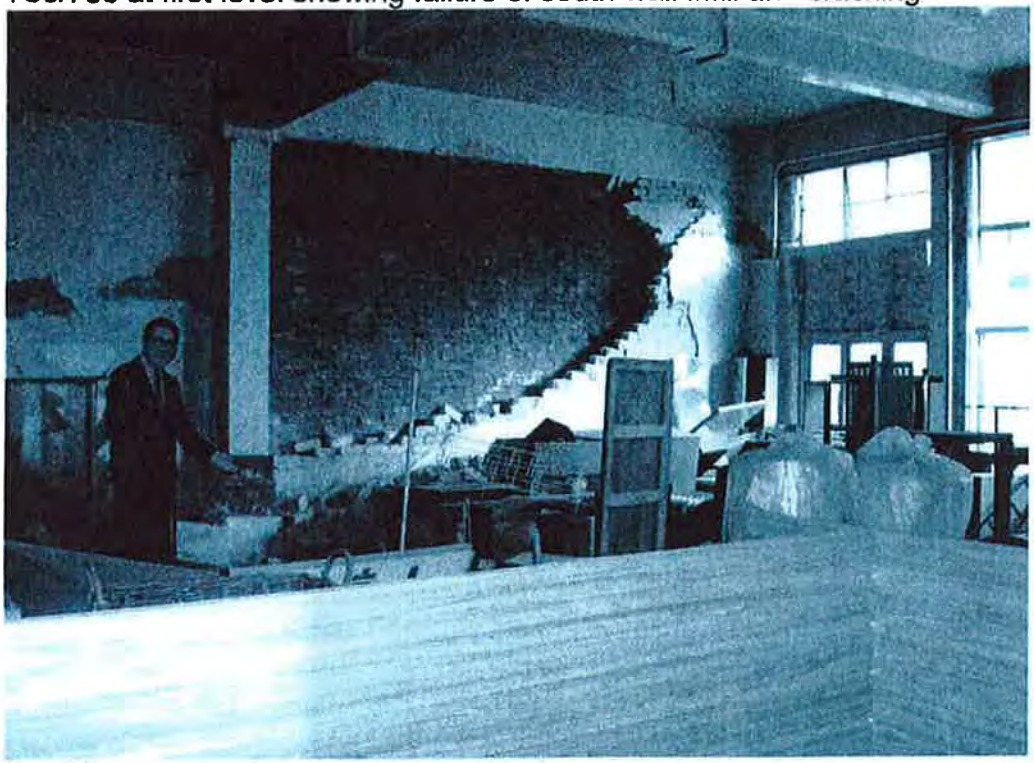


Cracking to column at upper level 736

Rear wall of 736

736 externally from northeast showing partial collapse of top section

736/738 at first level showing failure of south wall infill and cracking to SW column



Cracking and breakage to SW column.

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DSC03179.JPG

DSC03182.JPG

DSC03183.JPG

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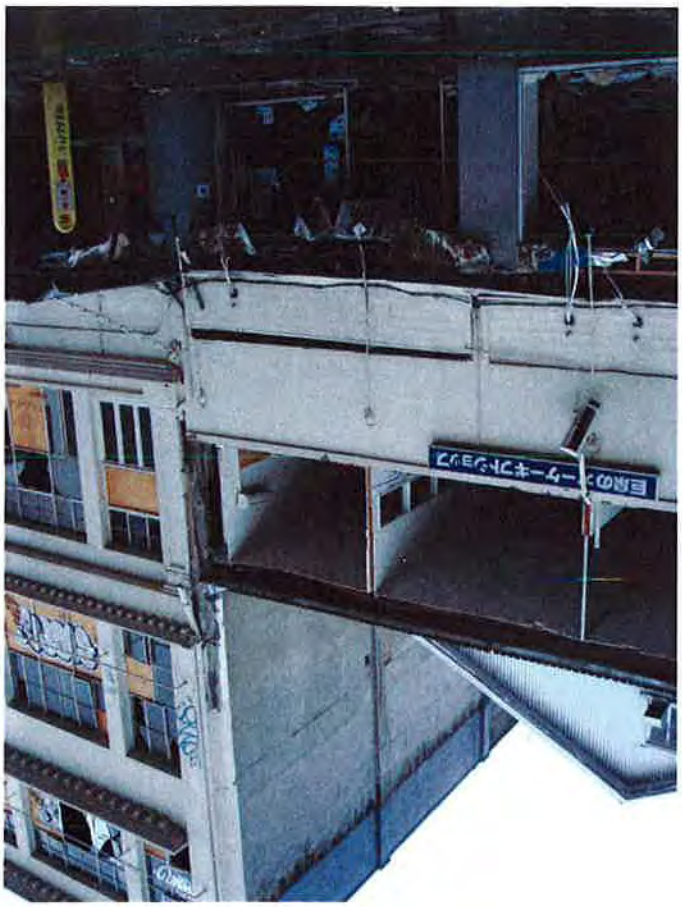
DSC02337.JPG

DSC02338.JPG



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