

4 August 2026

Natasa Brass

Sent via: natasa.b@arizto.co.nz

Kia ora Natasa

Information request – 427 Armagh Street, Linwood, Christchurch 8011

Thank you for your information request received on 13 July 2026. You asked for information in relation to 427 Armagh Street. Your request has been considered under the Official Information Act (OIA).

Your enclosed response contains documentation relating to how any/all dwelling claims were assessed and settled for the requested property. These have been provided under the following claim summary divider(s):

- **Cash Settled**
- **Land**
- **Remedial**

If you believe anything specific is missing, or if you have any questions about the claim information provided, please contact us so we can discuss your requirements.

In accordance with the provisions of section 141(2) of the Natural Hazards Insurance Act 2023, I have included NHC Toka Tū Ake documentation relating to the assessments and repairs carried out at the property, which contains information held on unassigned claim numbers. The claim owner has not provided authority for you to have access to the claims, however, pursuant to section 141 (4) (a-b) you have a public interest to receive information relating to natural hazard damage to the property.

To protect the privacy of the respective owners, I have withheld information relating to the previous homeowners, third parties and other neighbouring properties under section 9(2)(a) of the OIA and section 53(b) of the PA.

Further information

If you would like more information, please visit www.naturalhazards.govt.nz or phone 0800 DAMAGE (0800 326 243) between 8am-6pm Monday-Friday.

Remember to include your claim number or address when making enquiries.

You have the option of approaching the Office of the Ombudsman and/or Privacy Commissioner should you wish. The Ombudsman can be contacted at PO Box 10 152, Wellington 6143, on Freephone 0800 802 602, or visit <http://www.ombudsman.parliament.nz>.

Kind regards,



D Tuiloma

Senior OIA Advisor | Kaitohutohu Ture Mōhiohio Ōkawa Matua

Natural Hazards Commission Toka Tū Ake

0800 DAMAGE (326243) | Christchurch

www.naturalhazards.govt.nz

CASH SETTLED CLAIM(S)

The following information contains documents relating to claim(s) that were cash settled for the property.

If you require sign off or repair completion documents, they may be obtainable from the contractors who completed the substantive repairs at the property.



Statement of Claim Checklist / Repair Strategy

Date: 14-2-2011

Author: *Wendy Scumacher*

CLM/2010/011835

SEAN ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH

H:

W:

M:

LA: *Wendy Scumacher*

Estimator: *Sam Watts*

Room	Earthquake Damage	Walls	Ceiling	Floor	Repair Strategy
	Y/N	✓	✓	✓	
Lounge	Y 4.9 4.2	✓	✓	X	Wall crack - 0.30m - RAKE ONE, STOP, PAINT CORNER MIRROR CRACK - 0.10m - CAR FILL, PAINT, SCOTIA.
Dining Room	Y 4.5 0.25	✓	✓	X	TILE CRACK CRACK - 2.00m - RAKE ONE CRACK, SEAL WITH SILICONE Wall crack - 5.00m - RAKE ONE, STOP, PAINT CEILING CRACK 1.00m - RAKE ONE, STOP, PAINT.
Kitchen	Y 1.4	✓	X	✓	BROKEN TILE - 0.60m ² - REPLACE TILES
Break Room	Y 1.4 1.2	✓	X	X	PLASTER CRACKING - 5.00m - CRACK ONE, PLASTER Re finish SKIDS, PAINT
Bedroom 1	Y 4.6 2.8	✓	X	X	Door SICKNESS - 0 - REMOVE DOOR, CASE, PAINT, RE HANG. SCOTIA SELF-REPAIR - 0.10m - CAR FILL, PAINT
Ensuite	N/A				
Bedroom 2	Y 4.2 3.8	✓	X	X	Wall CRACK - 1.00m - RAKE ONE, STOP, PAINT
Bedroom 3	N/A				

CHECKED

A.C.
(Initials)

SOC / Repair Strategy – Page 2

SEAN ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH

H:

W:

M:

Repair Strategy

Room	Earthquake Damage	Walls	Ceiling	Floor	
	Y/N	✓	✓	✓	
Bedroom 4	N/A				
Bathroom	Y 0.1 1.6	✓	X	X	WALL CRACK - 1.00m - TAKE OUT, SCOF, PAINT BATH TUB CRACK CRACKS - 0.60m ² - RE CRACK.
Toilet 1	N	X	X	X	
Toilet 2	N/A				
Office / Study	N 0.3 0.3	X	X	X	
Rumpus	N/A				
Entry / Hall(s)	Y 5.4 1.2	✓	✓	X	WALL CRACK - 1.00m - TAKE OUT, SCOF, PAINT CEILING CRACK - 0.80m TAKE OUT, SCOF, PAINT
Stairwell	N/A				
Laundry	N 1.6 1.6	X	X	X	
Garage	N 5.5 2.9	X	X	X	
Other	Y 2.4 2.4	✓	✓	X	BRICKWORK CRACKING - 1.90m ² - TAKE OUT, RE POINT BRICKWORK, POINT BRICKS (0.5m) CONSERVATORY FACIA SEPARATION - 2.00m - SEAL WITH SILICONE

CHECKED

Plaster / plaster separation - GRF FILL,
2.00m PAINT

.....
(Initials)

CLM/2010/011835

SEAN ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH

H:

W:

M:

Repair Strategy

SOC / Repair Strategy – Page 3

Item		Event Damage Y / N	
Roof		Y	BRICKS TILES (3) - MISSING BRICK CASING, 15-00M, REPAIR CASING.
EXTERNAL WALLS	North	N	
	South	N	
	East	Y	BRICKWORK CRACKING - 1-00M - CRACK DIRT MARKER, RE PAINT BRICKWORK.
	West	N	
Decks		N/A	
CHIMNEY	Base	N	
	Ceiling Cavity	N	
	Above Roof	Y	CHIMNEY CRACKED - ABOVE ROOF. MINOR CRACK 0.6 to plaster - Chimney is Sound. Replaster Crack
	Fireplace	N/A	CLOSED SW.

CHIMNEY

.....
(Initials)

SOC / Repair Strategy – Page 4

SEAN ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL,
CHRISTCHURCH
H [REDACTED]
W [REDACTED]
M [REDACTED]
Repair Strategy

Item	Event Damage	Repair Strategy
	Y / N	
Foundations	Y	Check - Phase 1 & 2 Foundation - 0.2m - Check out crack, plaster.
Piling	N	
Services	N	
Other Dwelling Items	N/A	
Outbuildings	N/A	
Land & Retaining Walls (Discuss with Supervisor)	N	

Supplementary Notes: Primary Abat Source - Heat Pump in Lounge

I confirm the rooms and areas listed above have been inspected by an EQC representative.

Damage caused by the event has been noted and to my knowledge there are no other areas of damage resulting from the event.

Signature of Claimant:

Dated:

CHECKED

王明賢(主編)

NOTE: THIS FORM IS TO BE COMPLETED IN THE CLAIMANT'S PRESENCE.

OFFICE USE ONLY - LOSS ADJUSTER TO COMPLETE

Date: 11/03/2011Claim Number: 2010/011835Loss Adjuster: WARREN SCULPNER**Costing Estimate**

\$1,400

Lounge

\$1,550

Dining Room

\$

Kitchen

\$

Family Room

\$ 250

Bed 1

\$

Ensuite

\$1,100

Bed 2

\$

Bed 3

\$

Bed 4

\$ 700

Bathroom

\$

Toilet 1

\$

Toilet 2

\$

Office/Study

\$

Rumpus

\$ 1,200

Entry/Hall(s)

\$

Stairwell

\$

Laundry

\$

Outbuildings/Garage

OFFICE USE ONLY - LOSS ADJUSTER TO COMPLETE

Date: 11/03/2011Claim Number: 2010/011835Loss Adjuster: WARREN SCULPHER

\$ 950

FRONT PORCH

\$ 500

REAR ENTRY

\$ 1,350

DECK

\$ 150

EXTERNAL WALLS

\$ 650

CHIMNEY

\$ 200

FOUNDATIONS

\$

\$

\$

Column Totals:

\$ 4,300

\$ 2,950

\$ 2,750

Sub Total: \$ 10,000.00 ✓P&G, Margin, GST: \$ 3,662.00 ✓**TOTAL:** \$ 13,662.00 ✓



Calculation Sheet

Office Use Only

CLM/2010/011835

Date: 11/03/2011

Author: RICHARD ALCORN

LA: WARREN SCULPHER

SEAN ELVINES

427 ARMAGH STREET

CHRISTCHURCH CENTRAL

CHRISTCHURCH

H:

W:

M:

Estimator: IAN WHYTE

Room	Repair Strategy	Units	Length	Breadth	Depth	Quantity	Rate	Cost
4.9 x 4.2 Lounge	GIBSTOP (0.4LW CRACKING)	HR				2	45	90
	MATERIALS	EA				2	10	20
	PAINT - WALLS	M ²	18.2	2.7		69.14	24	1,659.36
	PAINT - SCOTIA	M ²	18.2	0.2		3.64	24	87.36
4.5 x 2.5 Dining Room	GIBSTOP (0.0LW CRACKING)	HR				3	45	135
	MATERIALS	EA				3	10	30
	PAINT - WALLS	M ²	14	2.7		37.8	24	907.2
	PAINT - CEILING	M ²	4.5	2.5		11.25	24	270
Kitchen	UPLIFT/SUPPLY/LAY TILES	M ²	0.6	1		0.6	165	99
	GRIND-OUT/GRUNT/SEAL TILE CRACK (2.0LW)	HR				2	45	90
	MATERIALS	EA				1	25	25
1.4 x 1.2 FRONT PORCH	GRIND-OUT PLASTER CRACKING (5.0LW)	HR				3	45	135
	MATERIALS	EA				3	10	30
	RE-FINISH STUCCO	M ²	5	1		5	85	425
	RE-PAINT - WALLS	M ²	5.2	2.7		14.04	24	336.96
4.1 x 2.8 Bedroom 1	REMOVE/GRIND/PAINT/REHANG DOOR	HR				2	45	90
	MATERIALS	EA				1	35	35
	FILL & PAINT SCOTIA SEPERATION	HR				2	45	90
	MATERIALS	EA				1	25	25
Ensuite								
4.0 x 3.8 Bedroom 2	GIBSTOP (1.0LW CRACKING)	HR				2	45	90
	MATERIALS	EA				2	10	20
	PAINT - WALLS	M ²	15.6	2.7		42.12	24	1,010.88
Bedroom 3								

Calculation Sheet – Page 2

[illegible]

Calculation Sheet – Page 3

Room		Repair Strategy	Units	Length	Breadth	Depth	Quantity	Rate	Cost
Roof		REPAIR RIDGE CAPPING	M2	15	1		15	40	600
		ROOFER	HR				6	50	300
		MATERIALS (INC. 3 TILES)	EA				1	20	20
		SAFETY ACES	EA				1	400	400
EXTERNAL WALLS	North								
	South								
	East	RE-POINT CRACKING BRICKWORK (10Lm)	HR				2	50	100
		MATERIALS	EA				1	30	30
	West								
	Decks								
CHIMNEY	Base								
	Ceiling Cavity								
	Above Roof	RE-PLASTER CHIMNEY CRACK (10Lm)	HR				4	50	200
		MATERIALS	EA				1	30	30
		SAFETY ACES	EA				1	400	400
	Fireplace								
	Sub total (Page 3)								2,130

210/011835

Affix label here

Calculation Sheet – Page 4

Room	Repair Strategy	Units	Length	Breadth	Depth	Quantity	Rate	Cost
Foundations	GRIND-BUT PLASTER CRACK (0.21m)	HR				4	50	200
	MATERIALS	EA				1	30	30
Piling								
Services								
Other Dwelling Items								
Out-buildings								
Land and Retaining Walls								
Sub-total - Page 4								230

	Sub total – Page 1:	5,220.76
	Page 2:	2,416.40
	Page 3:	2,130.00
	Page 4:	230.00
		9,997.16
	+ P&G, Margin & GST Figure:	3,658.76
	TOTAL:	13,649.92

Date:	Claim Number: 2010/	Estimator Name:
14" 02.2011	2010/011835	IAIN WHITE

Dwelling Inspection Checklist: Show measurements indicate damage

Lounge

Dining Room

Kitchen & Dining

Family Room

Bed 1

Ensuite

Bed 2

Bed 3

Bed 4

Bathroom

Toilet 1

Toilet 2

Office/Study

Rumpus

Entry/Hall(s)

WMA

EQC

EARTHQUAKE COMMISSION

Date:

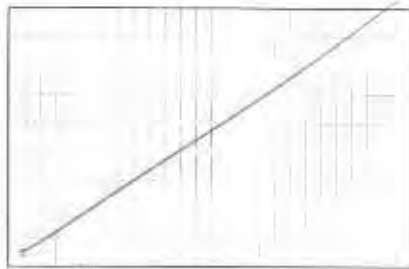
Claim Number: 2010/

Estimator Name:

14.02.2011

2010/011835

IAIN WHITE

Dwelling Inspection Checklist: Show measurements indicate damage

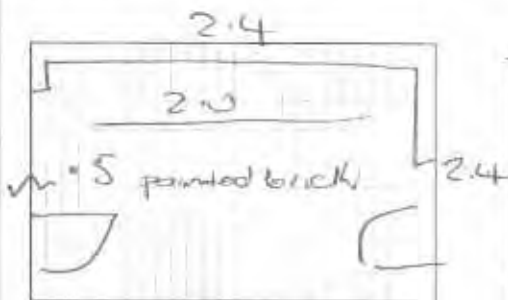
Stairwell



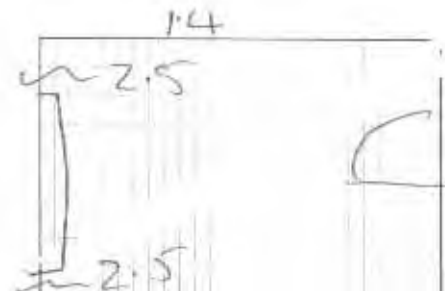
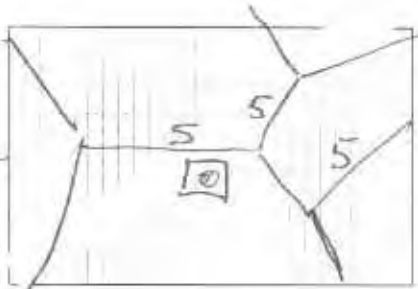
Laundry



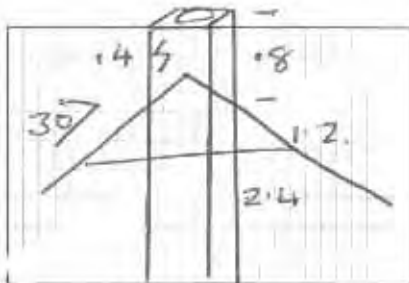
Outbuilding/Garage



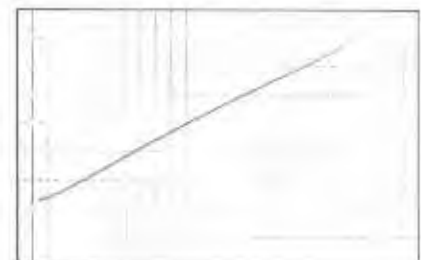
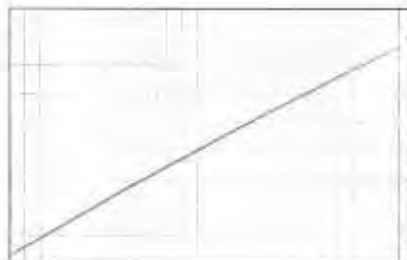
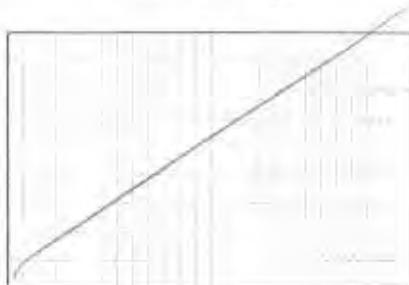
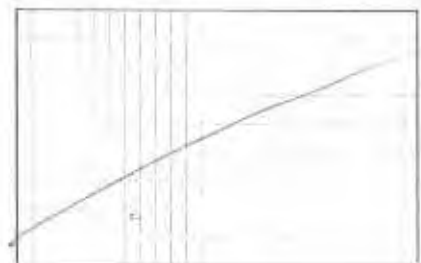
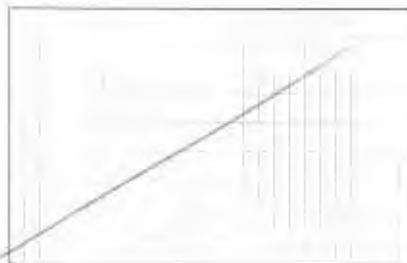
Rear Entry



Covered front Entrance



Chimney

**Legend**

	Crack to ceiling (show length)
	Crack to wall (show length)
	External damage
	Foundation damage



Date:

Claim Number: 2010/

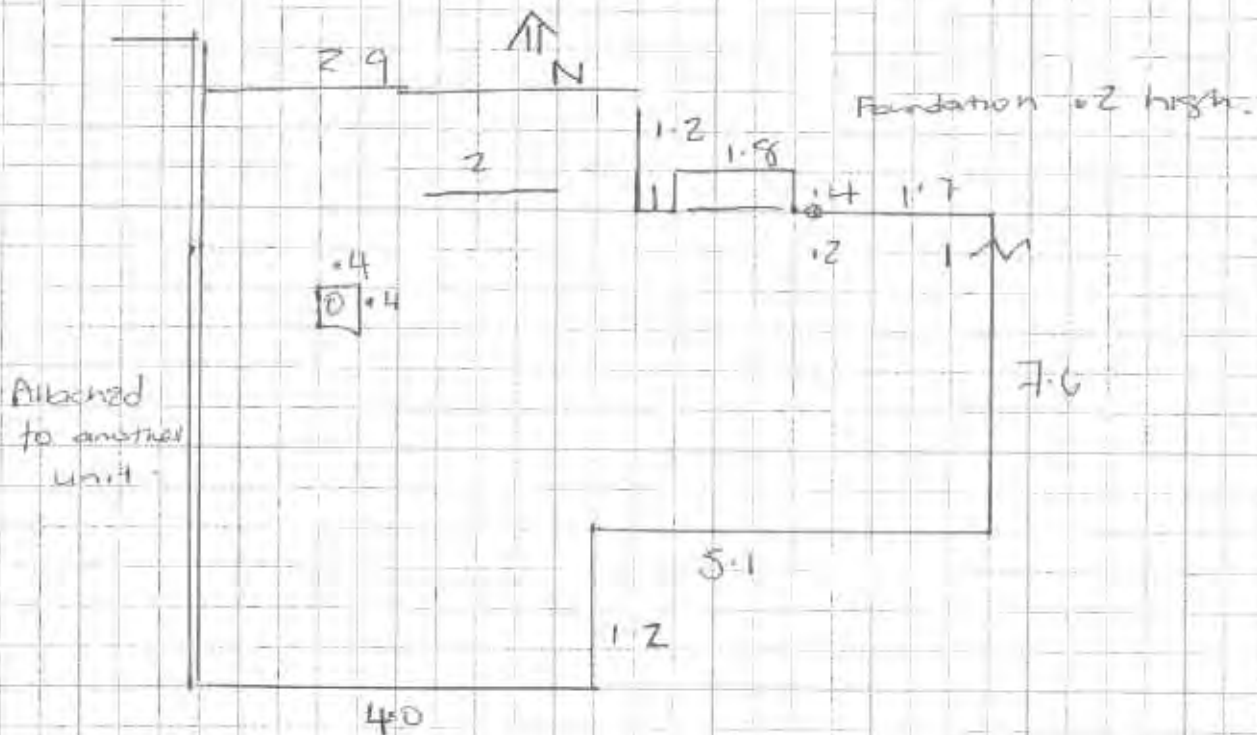
Estimator Name:

14.02.2011

2010/011835

IAIN WILYTE

Dwelling Inspection Checklist: Show measurements indicate damage



Area m2:	127 includes Garage
Stud Heights:	2.7
Wall Finish:	Wallpaper Plastered <u>Paint Finish</u>
Other:	N/A
Services:	Specify Damage: N/A
Chimneys:	Construction Type: Concrete with Height 4.9 cosmetic crack to plaster Damage Description: <u>Above Roof</u> Below Roof Total Repair
Foundations Damage:	Timber Concrete Ring Concrete Slab Other (Specify): Minor Moderate Severe House Moved off Foundations? Concrete Slab Cracked/ Crack Width: N/A Crack Length: N/A
Roof:	<u>Framed</u> Trussed Type: Clay Tiles <u>Concrete Tiles</u> Rolled Metal Other Damage: minor bedding
Cladding Type:	Weatherboard <u>Brick Veneer</u> Hardi Plank Other

CHECKED

W/2010/011835 E



EARTHQUAKE COMMISSION
24 MAR 2011
WELLINGTON

UB/2010/01835 E

ART OF CONSTRUCTION LIMITED64 Southampton Street
Beckenham
Christchurch 8023Telephone: 021-80-5432
Fax: (03) 331-7559
Email: aoc@paradise.net.nz427 Armagh st
Avonside
ChristchurchInvoice No: 1115
Invoice Date: 14-Mar-11
GST Number: 098-668-993**TAX INVOICE/STATEMENT**

Description	Quantity	Unit Price	Line Total
Labour To remove reinforced concrete chimney down below roof level below the point of damage ; support existing framing and replace any broken/damaged tiles	12	\$50.00	\$600.00
Timber			\$29.84
Tiles			\$135.00
Plus 15% GST			\$764.84
TOTAL DUE			\$879.57

PLEASE NOTE: Payment is due within 7 days

Retain this portion for your records - mail remittance advice with payment

REMITTANCE ADVICE

From: [REDACTED]

Art of Construction Limited
64 Southampton Street
Beckenham, Christchurch 8023
Payment can be made to:
Art of Construction Limited
BNBZ Bank 06-0801-0633422-00

Current:	\$ 879.57
Overdue:	
Amount Due:	\$ 879.57
Amount Paid:	





Statement of Claim Checklist / Repair Strategy

Date: 23/05/11

Author: David Butler

CLM/2011/122912

SB ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH 8013
H: [REDACTED]
W: [REDACTED]
M: [REDACTED]

LA: David Butler

Estimator: DAVE FINNIE

Room	Earthquake Damage	Walls	Ceiling	Floor	Repair Strategy
	Y/N	✓	✓	✓	
G1B Lounge 5.0 x 4.0	Y	✓	✓	CARP ON T+G	RAKE, STOP + PAINT WALLS (18.0 x 2.7) AND CEILING (5.0 x 4.0)
Dining Room	N/A	-	-	-	
G1B Kitchen 2.4 x 4.5	Y	✓	✓	T+G	RAKE, STOP + PAINT WALLS (13.8 x 2.7), RAKE, STOP + PAINT CEILING (4.5 x 2.4), TILES SEPARATIONS (CORNER) 4.0 HRS. REPLACE 1.0 m ² FLOOR TILES
Family Room	N/A	-	-	-	
G1B Bedroom 1 2.7 x 4.1	Y	✓	✓	CARP ON T+G	RAKE, STOP + PAINT WALLS (7.8 x 2.7) AND CEILING (4.1 x 2.7) EASE DOOR
Ensuite Conservatory 2.4 x 2.8	Y	✓	-	TILES	PAINT ONLY 3 WALLS (7.6 x 2.4)
G1B Bedroom 2 3.0 x 3.8	Y	✓	✓	-	RAKE, STOP + PAINT WALLS (7.6 x 2.7) AND CEILING (3.8 x 3.0) EASE DOOR
Bedroom 3	N/A	-	-	-	

CLM/2011/122912

SB ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH 8013

H:

W:

M:

SOC / Repair Strategy – Page 2

Room	Earthquake Damage	Walls	Ceiling	Floor	
	Y/N	✓	✓	✓	
Bedroom 4	N/A	—	—	—	
H1 BOARD Bathroom+ W/C 1.8 x 2.3	Y	✓	—	—	<i>FILL RAKE, STOP + PAINT (8.2 x 2.7) WALLS ONLY</i>
Toilet 1	N/A	—	—	—	
Toilet 2	N/A	—	—	—	
Office / Study	N/A	—	—	—	
Rumpus	N/A	—	—	—	
G1B Entry / Hall(s) 2.1 x 1.2 3.6 x 1.2	Y	✓	✓	—	<i>RAKE, STOP + PAINT WALLS (12.8 x 2.7) AND CEILING (7.7 m²)</i>
Stairwell	N/A	—	—	—	
G1B Laundry 1.6 x 2.0	N/A	—	—	—	
CONC BLOCK SINGLE Garage 6.2 x 5.0	N/A	—	—	—	<i>FILL</i>
ENTRY Other MAIN DOOR 1.4 x 1.2	Y	✓	—	—	<i>PAINT 3 WALLS (4.0 x 2.4)</i>

(Initials)

SB ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH 8013

H:

W:

M:

Item		Event Damage	
		Y / N	
Roof		Y	REPLASTER RIDGE CAP (2.0 L/M) INSPECTED ROOF CAVITY
EXTERNAL WALLS	North	Y	CRACKING TO STUCCO : GRIND OUT, FILL, RESSTUCCO + PAINT (2.2 M ²) BLOCKWORK CRACKING : GRIND OUT + REMORTAR (0.4 L/M - 3 HRS) REPLACE 2 BRICKS (2 HRS)
	South	Y	CRACKING TO STUCCO : GRIND OUT, FILL, RESSTUCCO + PAINT (2.3 M ²)
	East	Y	CRACKING TO STUCCO : GRIND OUT, FILL, RESSTUCCO + PAINT (1.6 M ²) REPLACE 1 BRICK (2 HRS) WALL CRACKS : GRIND OUT CRACK + REMORTAR (1.0 L/M - 4 HRS)
	West	N/A	INTERFERENCE / COMMON WALL
Decks		N/A	
CONCRETE CHIMNEY	Base	1.4 X .8 N/A	
	Ceiling Cavity	.5 X .6 N/A	
	Above Roof	.5 X .6 Y	REPLACE ABOVE ROOF (0.5 X 0.6 X 1.5)
	Fireplace	1.4 X .8 N/A	

SOC / Repair Strategy – Page 4

SB ELVINES
427 ARMAGH STREET
CHRISTCHURCH CENTRAL
CHRISTCHURCH 8013

H:
W:
M:

Item	Event Damage	
	Y / N	
Foundations	Y	REPLASTER 2.6 m ² ON SKIRT
Piling	N/D	
Services	N/D	CLAIMANT IS HAVING PLUMBER EXAMINE SEWAGE OUTLET - INTERMITTANT BACKFLOW
Other Dwelling Items	N/A	
Outbuildings	N/A	
Land & Retaining Walls (Discuss with Supervisor)	N/A	

Supplementary Notes:

- INSPECTED - ALL ROOMS
- ALL ACCESSIBLE EXTERNAL SURFACES
 - IN ROOF (NOT ON ROOF: CONC TILES + STEEP)
 - SUB-FLOOR SPACE

I confirm the rooms and areas listed above have been inspected by an EQC representative.

Damage caused by the event has been noted and to my knowledge there are no other areas of damage resulting from the event.

Signature of Claimant:

Dated:

23/05/2011

(Initials)

NOTE: THIS FORM IS TO BE COMPLETED IN THE CLAIMANT'S PRESENCE.



EARTHQUAKE COMMISSION

Scope of Works

Completed By: Dave Finnie

Date: 23-5-11

Page 2 of 9

CLM 2011 / 122912

Claimant Name: Sh Elvines

427 Armagh St
Ch ch central
Ch ch

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Clazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

DESCRIPTION:

REPAIR STRATEGY:

LINE ITEMS:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
Lift + Reinstate Dwelling							NA
Foundations							
• Replaster		6.7	0.4		2.68	85	227.80
Floors							NA
External walls							
cladding							
Stucco	HRS				6	50	300
materials	Each				1	40	40
Paint	m ²	6.1	0.2		1.22	30	36.60
Brick cleaner	HRS				11	50	550
materials	Each				1	100	100

* Unit Categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week. Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.

Subtotal	1254.40
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† P&G, Margin & GST figure

TOTAL



Scope of Works

Completed By: Dave Finnie

Date: 23-5-11

Page 3 of 9

CLM 2011 / 122912

Claimant Name: Sb Eluines
427 Armagh St
Chch central
Ch Ch

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other	
Lounge	✓ Dining	Kitchen	✓ Family Room	Bedroom	✓
Office/Study	Rumpus	Hallway	✓ Stairwell	Toilet	
Laundry	Bathroom	✓ Ensuite	Chimney	✓ Foundations	
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks	
Glazing/windows	Fireplace/waxburner	Floor	External Walls	Roof	✓
Outbuildings	Other				

DESCRIPTION:

REPAIR STRATEGY:

LINE ITEMS:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
<u>Roof</u>							
<u>cladding</u>							
<u>Replaster cap</u>	HRS				6	50	300
<u>materials</u>	Each				1	80	80
<u>Insulation</u>							NA
<u>Internal Walls</u>							NA
<u>Lounge</u>							
<u>Walls</u>							
<u>Stop</u>	HRS				3	45	135
<u>materials</u>	Each				1	30	30
<u>Paint</u>	m ²	18	2.7		486	24	1166.40
<u>ceiling S-stop</u>	HRS				2	45	90
<u>materials</u>	Each				1	20	20
<u>Paint</u>	m ²	5	4		20	24	480
Subtotal							2301.40
+ P&G, Margin & GST Figure							
TOTAL							

* Unit Categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week. Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.

Completed By: Dave Finnie
Date: 23-5-11
Page 4 of 9

CLM 2011 / 122912
Claimant Name: Sb Elvines
427 Armagh St
Chch central
Ch ch

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Glazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

REPAIR STRATEGY:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
Kitchen							
Walls							
Stop	HRS				4	45	180
materials	Each				1	40	40
Paint	m ²	13.8	2.7		37.8	24	894.24
ceiling							
Stop	HRS				2	45	90
materials	Each				1	20	20
Paint	m ²	4.5	2.4		10.8	24	259.20
Tiles - Wall							
Tiler	HRS				4	50	200
materials	Each				1	40	40
Tiles - Floor	m ²	1	1		1	170	170

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week, Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.

EDC 039 – Revised 07-09



EARTHQUAKE COMMISSION

Scope of Works

Completed By: Dave Finnie

Date: 23-5-11

Page 5 of 9

CLM 2011 / 122912

Claimant Name: Sb Eluines

427 Armagh St
Chch central

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Glazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

DESCRIPTION:

REPAIR STRATEGY:

LINE ITEMS:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
Bed ①							
Walls							
Stop	HRS				3	45	135
materials	Each				1	40	40
Paint	m ²	7.8	2.7		21.06	24	505.44
ceilings							
Stop	HRS				2	45	90
materials	Each				1	20	20
Paint	m ²	4.1	2.7		11.07	24	265.68
Doors = builder	HRS				2	45	90
Paint	HRS				3	45	135
materials	Each				1	40	40
bed ②							
Walls							
Stop	HRS				4	45	180
materials	Each				1	40	40
Paint	m ²	7.6	2.7		20.56	24	492.48
Subtotal							2033.60
+ P&G, Margin & GST Figure							
TOTAL							

* Unit Categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week. Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.



Scope of Works

Completed By: Dave FinnieDate: 23-5-11Page 6 of 9
 CLM 2011 / 122912
 Claimant Name: Sb Elvines
127 ARmagh St
chch central
ch ch

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Glazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

DESCRIPTION:

REPAIR STRATEGY:

LINE ITEMS:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
bed ② cont							
ceilings							
Stop	HRS				2	45	90
materials	Each				1	20	20
Paint	m ²	3	3.8		11.4	24	273.60
Bathroom							
Walls							
Fill - Panter	HRS				1	45	45
materials	Each				1	20	20
Paint	m ²	12.8	2.7		7.56	24	181.44
Hall							
Walls							
Stop	HRS				3	45	135
materials	Each				1	40	40
Paint	m ²	12.8	2.7		34.56	24	829.44

Subtotal 1654.48

+ P&G, Margin & GST Figure

TOTAL

* Unit Categories to be used as follows:

Each, Sheet, Kilograms, Linear metre, Square metre, Cubic metre,
 Per Hour, Per Day, Per Week. Cubic metre calculations must include
 length, breadth and depth figures. Square metre calculations must
 include length and breadth figures.

EQC

EARTHQUAKE COMMISSION

Scope of WorksCompleted By: **Dave Finnie**Date: **23-5-11**Page **7** of **9**

CLM **2011 / 122912**
 Claimant Name: **8b Elvines**
427 Armagh St
Chch central
Chch

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Glazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

DESCRIPTION:**REPAIR STRATEGY:****LINE ITEMS:**

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
Hall							
cont							
ceilings							
stop	HRS				3	45	135
materials	Each				1	20	20
Paint	m ²	6.4	1.2		7.68	24	184.32
Entry main door							
External							
Walls							
Fill - Painter	HRS				1	45	45
materials	Each				1	20	20
Paint	m ²	4	2.4		9.6	24	230.40
Windows + Doors							N/A
Doors							N/A

Subtotal **634.72**

+ P&G, Margin & GST Figure

TOTAL

* Unit Categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre,
 Per Hour, Per Day, Per Week. Cubic metre calculations must include
 length, breadth and depth figures. Square metre calculations must
 include length and breadth figures.



Scope of Works

Completed By: Dave FinnieDate: 23-5-11Page 8 of 9CLM 2011 / 122912Claimant Name: Sb Elvines427 Armagh St
Chch central
Ch ch

Element Details:

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Clazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

DESCRIPTION:

REPAIR STRATEGY:

LINE ITEMS:

DESCRIPTION:	Units	Length	Breadth	Depth	Qty	Rate	Cost
<u>Services</u>							<u>N/A</u>
<u>Outbuilding</u>							<u>N/D</u>
<u>chimneys</u>	<u>Each</u>				<u>1</u>	<u>12922.40</u>	<u>12922.40</u>
<u>Sundries</u>							<u>N/A</u>
<u>External Works</u>							<u>N/A</u>
<u>Hazardous material</u>							<u>N/A</u>

Subtotal 12922.40

+ P&G, Margin & GST Figure

TOTAL

* Unit Categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week. Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.

Completed By: Dave Finnie

Date: 23-5-11

Page 9 of 9

CLM 2011 / 122912

Claimant Name: SB ELVINE

427 Armagh St
Ch ch central
Ch ch

Land	Building	Bridges/culverts	Retaining walls	Other
Lounge	Dining	Kitchen	Family Room	Bedroom
Office/Study	Rumpus	Hallway	Stairwell	Toilet
Laundry	Bathroom	Ensuite	Chimney	Foundations
Piling	Services	Kitchen Ovens	Hot Water Cylinders	Header Tanks
Clazing/windows	Fireplace/woodburner	Floor	External Walls	Roof
Outbuildings	Other			

REPAIR STRATEGY:

DESCRIPTION:

Units	Length	Breadth	Depth	Qty	Rate	Cost
-------	--------	---------	-------	-----	------	------

Summary

Page

Q

Total

20

Total

Total	
Total	

⑤

Total

6

Total

7

Total

(8)

Total

1254	40
------	----

2301-40

1893.	44
2072	10

1631-18

634-72

12922-40

Subtotal	2267
----------	------

+ P&G, Margin & GST Figure	8303.37
----------------------------	---------

TOTAL	30977.81
-------	----------

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per Hour, Per Day, Per Week. Cubic metre calculations must include length, breadth and depth figures. Square metre calculations must include length and breadth figures.

Date:

23/05/11

Claim Number: 2010/

2011/122912

Estimator Name:

DAVE FINNIE

Dwelling Inspection Checklist: Show measurements indicate damage

Lounge	Dining Room	Kitchen
Family Room	Bed 1	conservatory
Bed 2	Bed 3	Bed 4
Bathroom	Toilet 1	Toilet 2
Office/Study	Rumpus	Entry/Hall(s)

APPROVED

Date:

Claim Number: 2010/

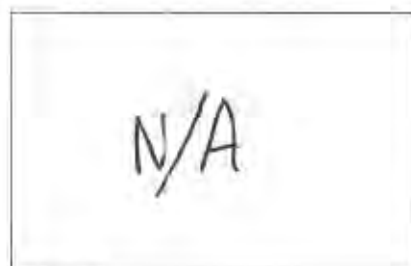
Estimator Name:

23/05/11

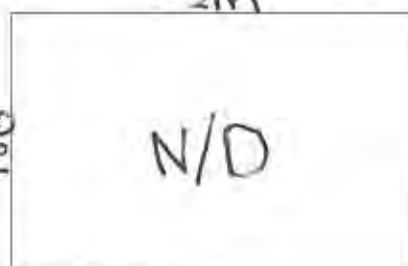
2011/122912

DAVE FINNIE

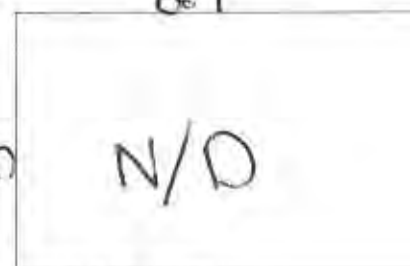
Dwelling Inspection Checklist: Show measurements indicate damage



Stairwell



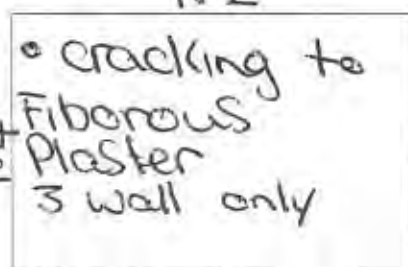
Laundry



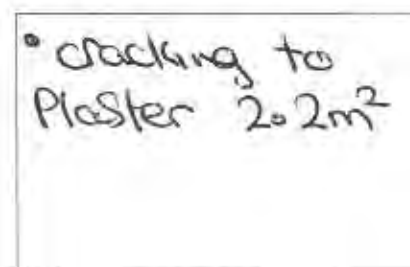
Outbuilding/Garage



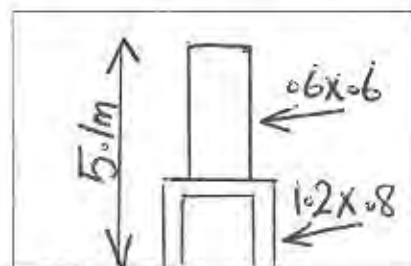
Services



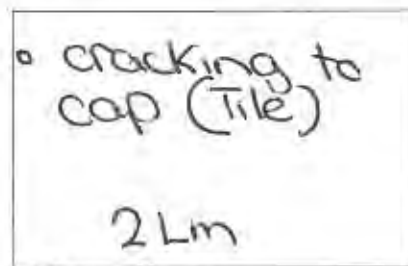
Entry-Main door



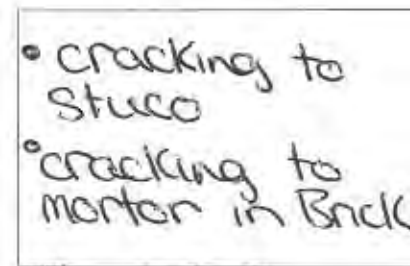
Foundation



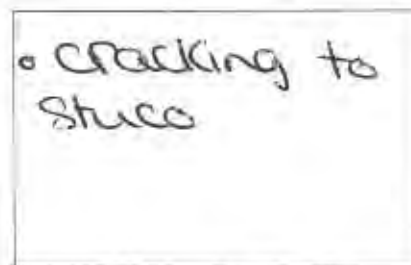
Chimney



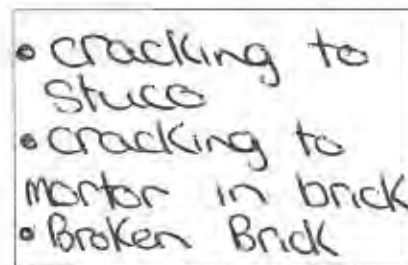
Roof



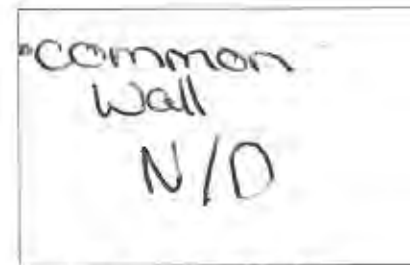
N Wall



S Wall



E Wall



W Wall

Legend

—	Crack to ceiling (show length)
~~~~~	Crack to wall (show length)
X	External damage
O	Foundation damage



Date:

Claim Number: 2010/

Estimator Name:

23/05/11

2011/122912

DAVE FINNIE

# Dwelling Inspection Checklist: Show measurements indicate damage

Seal/Sickline 4 HRS

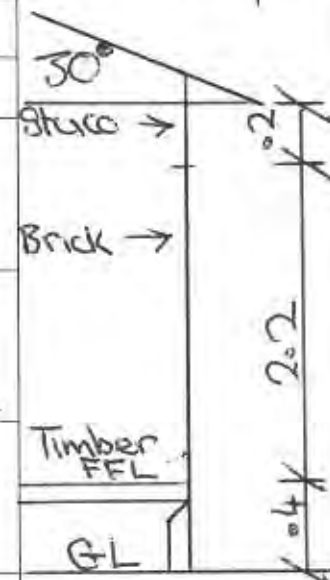
Tile cap Damage

2 Lm Tile cap

• 2x D/Pipe • Timber Facia • copper Spout Street

APPROVED

1.6



Area m2:	105 inc garage
Stud Heights:	2.7
Wall Finish:	Wallpaper Plastered <u>Paint Finish</u>
Other:	
Services:	Specify Damage:
Chimneys:	Construction Type: <u>concrete - cast</u> Height: <u>1500 above Roof</u> Damage Description: Above Roof <u>Below Roof</u> Total Repair
Foundations Damage:	Timber <u>Concrete Ring</u> Concrete Slab Other (Specify): <u>Minor</u> Moderate Severe House Moved off Foundations? <u>no</u> Concrete Slab Cracked? Crack Width: ..... Crack Length: .....
Roof:	<u>Framed</u> Trussed Type: Clay Tiles <u>Concrete Tiles</u> Rolled Metal Other Damage:
Cladding Type:	Weatherboard <u>Brick Veneer</u> Hardi Plank Other





# Sketch Plan of Property

Completed By: DAVE FINNIE  
 Supvr ID  
 LA ID

Date: 23/05/11

LA File Ref:

CLM/2011/122912

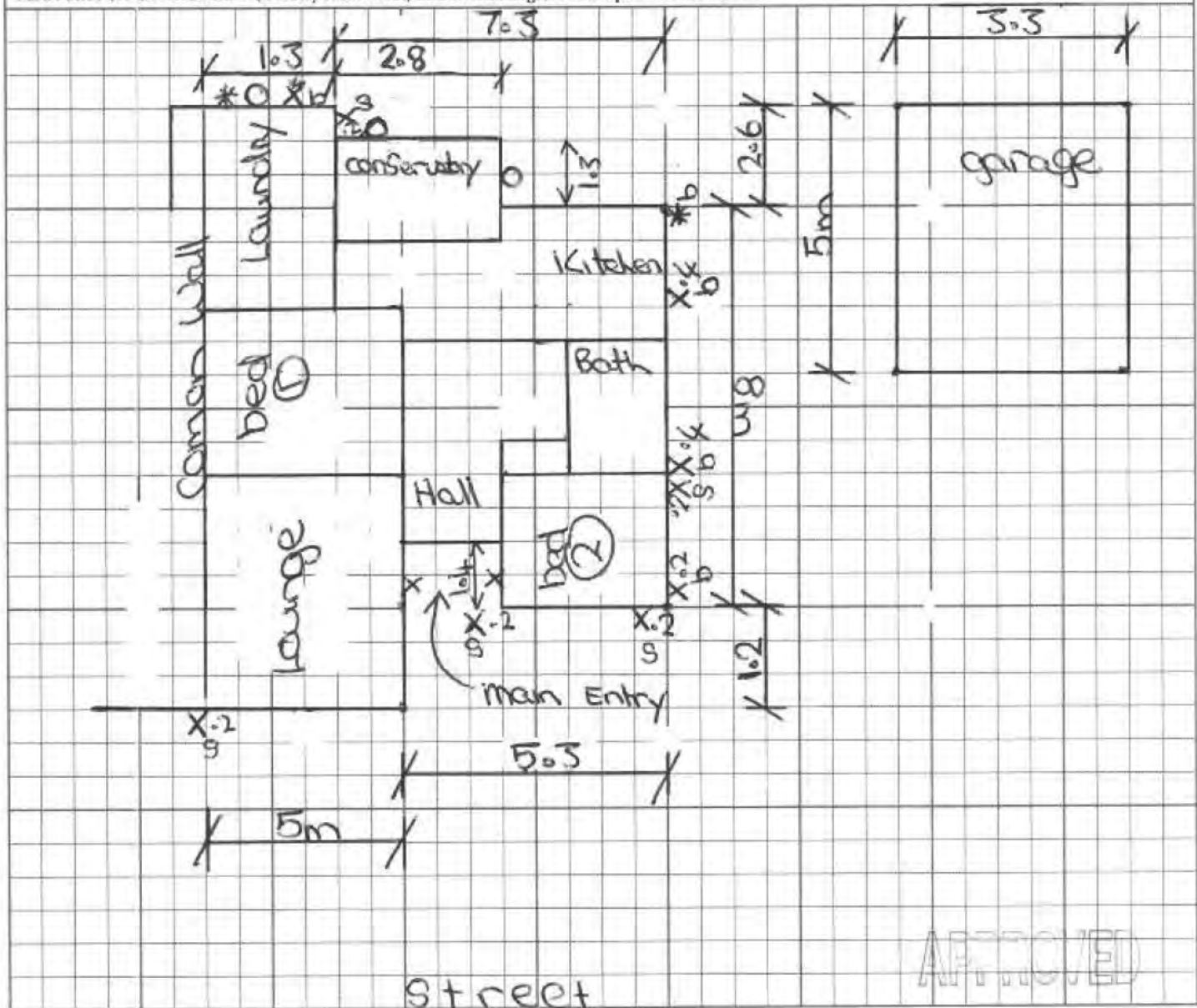
SB ELVINES  
 427 ARMAGH STREET  
 CHRISTCHURCH CENTRAL  
 CHRISTCHURCH 8013

H:

W:

M:

PLAN SKETCH OF PROPERTY (identify each room, indicate damage). Attach photo if available



b = Brick S = Stucco

## Additional Information

Brick Height 2.2 Stucco 2.00  
 X cracking to Painted Stucco  
 *Brick broken



\$ B/F

**Element/Room:**

## Materials

[illegible]

## Labour

Task	Hours	\$ Rate	\$ Cost	\$ Balance
			Total or C/F	\$



# SPENCE CONSULTANTS LTD

**PO BOX 20055**  
**CHRISTCHURCH**  
**Email: gspence@ihug.co.nz**

**Phone: 03 357 0425**  
**Facsimile: 03 357 0429**  
**Mobile: 021 390 624**

## Tax Invoice

GST Reg. Number: 75-014-023

Tax Invoice No.: 00003589  
 Date: 30/03/2012

### Invoice to:

EQC - Opt Out  
 P.O. Box 34027  
 Fendalton  
 Christchurch 8540

### Delivered to:

427 Armagh Street  
 Claim Number: 2011/122912

## Description

## Amount

Progress Claim for Work Completed to Date

\$14,000.00

Thank You.

GST: \$2,100.00

**Total Amount: \$16,100.00**

This is a Payment Claim under the Construction Contracts Act 2002.

Strictly Payment Due Upon Receipt of this Invoice.  
 Any Debt Recovery expenses incurred will be added to this invoice.

### Direct Credit Details:

Spence Consultants Ltd  
 12-3236-0568560-00

Please include invoice number and name.

**Balance Due: \$16,100.00**

Tax Invoice No.: 00003589

# LAND DOCUMENTS

The following information contains documents relating to the land assessments that were either cash settled or declined:

*The attached land document(s) help NHC Toka Tū Ake identify information that may be relevant to its assessment of your residential land claims. They are not intended to form a complete technical report on land damage to your land. The land information, including valuations, repair costs and estimates, do not necessarily reflect the final land settlement received*



M Keenan  
28/11/11

LM

## 1217189 2011 CHCH EQ - LAND ENGINEERING REPORT

EQC Claim Number:	New: 201 /	Significant Risk to Safety:	YES <input type="radio"/> NO <input checked="" type="radio"/>
	Old: 201 /	Engineer's Names:	<i>Michael M. Brown</i>
Claimant Name:		Engineers E-mail:	NOT REQ'D
Claimants Address:	<i>427 Armargh St Linwood</i>	Date: <i>6/9</i> /2011	Team no: <i>(7)</i>

Was an EQC Engineering Land Assessment undertaken following the Darfield Earthquake (4 September 2010) and prior to 22 February 2011:

YES NO

## GENERAL

Type of Damage	<u>Earthquake</u>	Landslip	Storm/Flood	Other
EQC Priority of claims	1 - Home/Land seriously damaged and uninhabitable	2 - Home/Land seriously damaged but habitable		
	3 - Home/Land moderately damaged & Habitable	<u>4 - All other damage</u>		
Is this natural Disaster Damage?	<u>YES</u>	NO		
Is there an Imminent Risk of Loss?	YES	<u>NO</u>	(If 'YES' - Fill in Summary Information Table and Imminent Loss Checklist)	

## INSPECTION DATA &amp; DISCUSSION WITH CLAIMANT(S)

Discussion with Claimant/Occupier?	<u>YES</u>	NO
What happened? Claimant's story	<i>Undulating lawn &gt; 50mm</i> <i>Front path slightly more undulating but most from tree roots</i> <i>Block wall fence fallen over</i> <i>pavers are undulating &gt; 10mm</i>	

## SITE DESCRIPTION (Refer Site Plan and/or Cross Section)

General:	<i>Flat site</i> <i>Asphalt Drive</i>
----------	------------------------------------------

## LAND - (DAMAGED ACCESS, LAND, &amp; DESTROYED LAND, &amp; RETAINING WALLS, BRIDGES, CULVERTS)

None

LIQUEFACTION/Flat land damage	None	Sand boils	Lateral spreading	<u>Settlement</u>	Remediation Rqd (TBC in office)		
					Yes	No	Notes
Land damage observed:							
(i) Lateral Spreading	<u>Not Observed</u>	Spreading <100mm over property Spreading >100mm over property	Tilt > 5 degrees Vertical offset > 50 mm			<input checked="" type="checkbox"/>	Refer to the Potential Remedial Works page of this report
(ii) Crust Thinning (TBC in office)							
(iii) Cracks	<u>Not Observed</u>	Distribution: Crack Width: Single crack >100mm <100mm <5mm	Multiple cracks >100mm <100mm <5mm			<input checked="" type="checkbox"/>	
(iv) Undulating land	Not Observed	Resulting from: Lawn: > 50 mm high Lawn: < 50 mm high	Lateral spreading Lawn steeper than 1 in 20 slope Lawn shallower than 1 in 20 slope	Liquefaction Ratio/Paths >10 mm high Ratio/Paths <10 mm high	Ground oscillation Patio/Paths steeper than 1 in 100 Patio/Paths shallower than 1 in 100	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
(v) Flood risk (TBC in office)		Above 50yfl pre 4 Sept Below 50yfl pre 4 Sept	Above 50yfl pre 22 Feb Below 50yfl pre 22 Feb	Above 50yfl post 22 Feb Below 50yfl post 22 Feb	No Increased Flood Risk Increased Flood Risk		
(vi) Local Ponding	<u>Not Observed</u>	Observed within EQC covered land				<input checked="" type="checkbox"/>	
(vii) Localised settlement causing drainage issues	<u>Not Observed</u>	Property no longer draining to road/public services				<input checked="" type="checkbox"/>	
(viii) New Groundwater Springs	<u>Not Observed</u>	Observed				<input checked="" type="checkbox"/>	
(ix) Inundation of land with sand to silt	<u>Not Observed</u>	Observed	Already Removed			<input checked="" type="checkbox"/>	



EQC Claim Number: 201_ /

**LAND (DAMAGED ACCESS LAND & DESTROYED LAND & RETAINING WALLS, BRIDGES, CULVERTS ) Continued**

LIQUEFACTION/Flat land damage comments:

OTHER Flat land damage

None

Settlement resulting from: Ground Oscillation

Consolidation of fill

Other (specify).....

LANDSLIDE/SLOPING LAND &amp; RETAINING WALL DAMAGE

None

Landslip

Rockfall

Retaining wall damage

Other

Geological situation (fill/loess/bedrock etc):

Groundwater situation (seepage/runoff etc):

Landslip:

Tension Cracks

Toe-bulge

Erosion

Surface slump

Description:

Rotational Slip

Translational Slip

Ridge-venting

Other.....

Rockfall:

Source:

Upslope

Within property boundary

Description:

Downslope

Beyond property boundary

Are multiple properties affected:

Yes

No

If Yes, list affected properties:

Imminent risk  
(Y/N)Remediation  
(TBC in office)Refer to the Potential Remedial  
Works page of this report

Comments:

RETAINING WALL DAMAGE

Retaining wall damaged?

None

No. of walls damaged .....

Description:

Type of damage to retaining wall(s) :

Cracks

Rotated/leaning

Slid

Bulging

Location of retaining wall(s) :

Settlement

Within 8m of building

Within 60m &amp; needed to protect of land within 8m of accessway/building

Other

Are multiple properties affected:

Yes

No

If Yes, list affected properties:

Imminent risk  
(Y/N)Remediation  
(TBC in office)Refer to the Potential  
Remedial Works page of this  
report

Comments:



EQC Claim Number: 201_ /

**LAND - (DAMAGED ACCESS, LAND, & DESTROYED LAND, & RETAINING WALLS, BRIDGES, CULVERTS ) Continued****LAND DAMAGE AREAS**

(see table on page 6 for more details)

Areas of land Damage	<u>Entire Site</u>	<u>Portion of Site</u>	None
Land beneath Main access way damaged?	<u>No N/A</u>	<u>Within 60m of building</u>	Other.....

**PRELIMINARY LAND REMEDIAL OPTION & COST (Refer Site Plan and Cross Section)**

Land Remedial option	Drainage	Retaining Wall	Pallisade Wall	Soil Nail/Rock Bolt	<u>Earthworks</u>
	Debris Wall/Catch Fence	Remove rock hazard	Other	Combination of Above	None
Estimated Land Remedial Cost	<u>TBC - (To be confirmed by Cost Estimator)</u>				

**DWELLING DESCRIPTION (Refer Site Plan and Cross Section)**

General : (eg. <u>Single level</u> roof type, foundations, cladding etc)	<u>Concrete tile roof, brick cladding, timber floor with concrete perimeter footing</u>
-----------------------------------------------------------------------------	-----------------------------------------------------------------------------------------

**BUILDING DAMAGE - GENERAL**

Has the building been Damaged?	<u>YES</u>	<u>NO</u>
Is the Dwelling at Imminent Risk?	<u>YES</u>	<u>NO</u>
Estimated Remedial Value?	<u>TBC - (To be confirmed by Cost Estimator)</u>	
Have any Appurtenant structures been damaged?	<u>YES</u>	<u>NO</u>
Are any appurtenant structures at Imminent Risk?	<u>YES</u>	<u>NO</u>
Have any services within 60 m of dwelling been damaged?	<u>YES</u>	<u>NO</u>
Are any services within 60 m of dwelling at Imminent Risk?	<u>YES</u>	<u>NO</u>

(Does not include Patios/Paving)

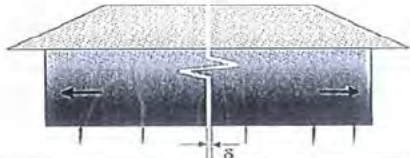
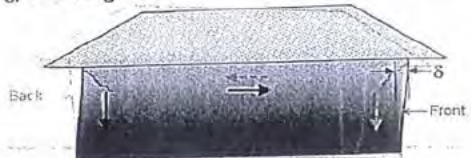
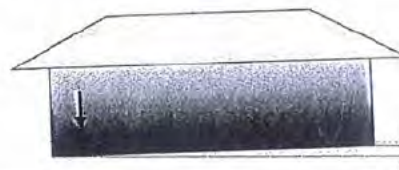
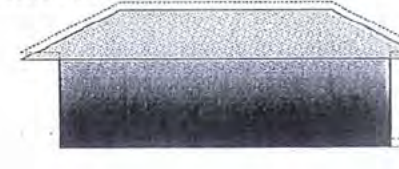
**DAMAGED DWELLING, APPURTENANT STRUCTURES & SERVICES (Refer Site Plan and Cross Section)**

Dwelling : features damaged :	None	<u>External walls</u>	<u>Internal walls</u>	<u>Ceiling</u>	Door/window frames
	Window glass	Steps	Foundation/slab	Roof	Chimney
	Other: .....				
Type of damage to Dwelling:	<u>Cracks (walls)</u>	<u>Cracks (ceiling)</u>	Cracks (window glass)	Cracks (chimney)	Floor sloping
	Racking/sagging	Walls etc out of vertical	Crack in slab	Crack in footing	Other: .....
Appurtenant structure(s) damaged :	<u>None</u>	Garage/shed	Carport	Deck	Other: .....
What services have been damaged?	Water	Sewer	Drainage	Gas	Electrical
	Telephone	Service structures	<u>Don't Know</u>	Other: .....	None

<b>GENERAL :</b>	<u>minor cracks</u>
------------------	---------------------



Floors and Foundations	Roof Cladding	Wall Cladding
Timber floor on piles	Light: Iron roof	Light: weatherboard/plywood/stucco etc
Timber on internal piles with perimeter concrete footing	Heavy: concrete tiles/clay tiles/slate etc	Heavy: brick veneer/stone/solid plaster
Concrete slab on grade		

Damage to Dwelling predominantly from:	Shaking		Land damage
Type of Damage	Severity		
	Minor	Moderate	Major
Stretching 	0 to 5mm	5 to 30mm	>30mm
Hogging 	0 to 20mm	20 to 50mm	>50mm
Dishing 	0 to 20mm	20 to 50mm	>50mm
Racking/Twisting 	0 to 10mm	10 to 30mm	>30mm
Tilting 	0 to 20mm	20 to 50mm	>50mm
Discontinuous Foundation 	0 to 10mm	10 to 20mm	>20mm
Global Settlement 	0 to 50mm	50 to 100mm	>100mm

## Potential Remedial Works

The works described below are to repair or protect insured land (i.e. within the property boundary, on or supporting the main access within 60m of the dwelling, or within 8m of a residential building) and the structure(s) that has/have been damaged or is/are at imminent risk as a direct result of the natural disaster that has occurred.

A solution that reinstates the damaged land and removes the imminent risk threat would comprise the following works:

- Locally repair undulations by trimming top off undulation or fill depression
- 
- 
- 
- 

Additional information for cost estimation:

<u>Construction Issues</u>	<u>Easy</u>	<u>Moderate</u>	<u>Hard</u>	<u>N/A</u>
• Construction Access	✓			
• Drilling				✓
• Reinstatement	✓			

This preliminary design is for the purposes of costing for the claim settlement process only, it is not for construction. There may be a solution that is more cost effective and/or appropriate. Even if this concept is considered to be appropriate, further subsurface investigation, detailed design and consenting may be required prior to construction.

We estimate the cost (excluding GST) to construct the proposed solution will be as follows:

Engineering investigation, design and drawings	\$
Construction Observations and PS4	\$
Survey (if required)	\$
Building/Resource consents (if required)	\$
Project Management	\$
Construction of .....(as detailed above)	
(Cost to be determined by cost estimator)	\$ TBC
<b>TOTAL non construction Costs (Excluding GST)</b>	<b>\$</b>

The total construction cost estimates should be confirmed by a contractor or estimator.



**Preliminary Summary Information** (all costs excl GST)

Is this Natural Disaster damage?	Yes
<b>Land within 8m of dwelling or appurtenant structures</b>	
Area of Land <b>damaged</b> Evacuated: Inundated:	250m ²
Area of Land <b>at imminent risk</b> Evacuation: Inundation:	
<b>Main access way within 60m of dwelling (or an appurtenant structure)</b>	
Area of Land <b>damaged</b> on accessway or supporting accessway: Evacuated: Inundated:	
Additional Area of Land <b>at imminent risk</b> on accessway or supporting accessway: Evacuation: Inundation:	
<b>Retaining Walls within 8m of Dwelling or Appurtenant Structure</b>	
Description.....(list and describe each affected wall)..... Damaged: (face area - m2); At imminent risk: (face area - m2);	
<b>Dwelling &amp; Appurtenant Structures</b>	
Has dwelling or appurtenant structure been damaged as a result of the natural disaster? Description..... <i>shaking damage</i> .....	Yes
Cost to repair damage:	TBC
Is dwelling (or appurtenant structure) at imminent risk as a result of the natural disaster: Description.....	NO
Cost to remove imminent loss threat to dwelling (or appurtenant structure):	TBC
Value of imminent risk damage to dwelling (or appurtenant structures) :	N.I
<b>Services within 60m of Dwelling or Appurtenant Structure</b>	
Services damaged (list) Services at imminent risk (list)	Don't know
<b>Remedial Option:</b> Description..... <i>earthworks</i> .....	TBC (excluding GST)

TBC – To be calculated &amp; confirmed by cost estimator

Maximum EQG Insured  
250 m²





Notes:

entire site. 425 &amp; 427

A4 SCALE 1:250

0 2 4 6 8 10 (m)



Drawn by:

m.d

Date:

6/9/11

EARTHQUAKE COMMISSION  
KŌHIRIANGA RŌWHENUA

www.eqc.govt.nz

22 FEB 2011 - EARTHQUAKE  
LINWOOD, CHRISTCHURCH  
(C017-004164) - 425 Armagh Street

EQC Claim No: 201 _ /



# Scope of Works

# EQC

Completed by: B RhodesDate: 5/8/13 Page: 1 of 1  
dd / mm / yy
 SEAN ELVINES  
 427 ARMAGH STREET  
 LINWOOD  
 CHRISTCHURCH

H: &amp; W: [REDACTED]

M: [REDACTED]

Description: **Damage to Land**

Repair Strategy: Removal and/or import materials and labour to repair land

79.6 m²

Description – Removal of Debris/Minor Works	Units	Length	Breadth	Depth	Quantity	Rate	Cost
Transporter- machine	each					\$160	
Machine Hire	hrs					\$110	
Truck Hire	hrs					\$100	
Labour	hrs					\$45	
Contaminated Spoil Removal	m ³					\$100	
Spoil Removal/Tip Fees (clean)	m ³					\$20	
Skip (4m ³ )	each					\$190	
Materials	each						

 NB A Small/Minor Works cost may only be applied when there is only land repair to the site/property; a total area of damage under 15m²; no further works required

Description - Supply and level hard fill	Units	Length	Breadth	Depth	Quantity	Rate	Cost
Land Under Residential Buildings (Type 'A') – Supply and level hard fill	m ²					\$12	
Land Under Access way (Type 'B') – Supply and level hard fill	m ²					\$12	
Land Under Pavers/Patio/Concrete <b>C2</b> (Type 'C') – Supply and level hard fill	m ²	4.5	3.8		17.1	\$12	205.20
Land Under Lawn Areas <b>C1, C3</b> (Type 'C') - Level and Seed	m ²	62.5	1		62.5	\$10	625.00
Lateral Spread Cracks under 10mm but greater than 5mm	Lm					\$25	
Lateral Spread Cracks greater than 10mm	Lm					\$90	

* Unit categories to be used as follows:

Each, Sheet, Kilogram, Linear metre, Square metre, Cubic metre, Per hour, Per day, Per week.

Cubic metre calculations must include length, breadth and depth figures.

Square metre calculations must include length and breadth figures.

Sub-total 830.20

P&amp;G, Margin &amp; GST (Figure x 1.3662) 304.02

Total 1,134.22





# File Note – Page 2 only

# EQC

EARTHQUAKE COMMISSION

Kōmihana Rūwhenua



CLM / 2011 / 122912

SEAN ELVINES  
427 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

Date:

5/8/13

Author:

B Rhodes

Notes:

The EQC Land Team have assessed the property as they found it on the day of the inspection and have recorded the types and amount of earthquake related land damage that was visible.

Shared Land

This property is part of a shared land claim, along with 425 & 429 Armagh St. This property is the "master file."

CHECKED



ver01, JUN 2013



# SITE - RISK ASSESSMENT



EARTHQUAKE COMMISSION

Kōmihana Rūwhenua

## FLAT LAND



CLM / 2011 / 122912  
SEAN ELVINES  
427 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

B Rhodes  
R Parsons

5/8/13 Time: 8:00

ID No: 1177

ID No: 800953

### The minimum PPE to be worn by staff:

- Safety Footwear
- Hi Visibility Vest/ Jacket

### Ensure the following items are available:

- EQC ID Tags must be displayed
- EQC cell phones to be carried on your person

Vehicle parked in a safe and suitable location?

☒ Y ☐ N

Communication is available and working?

☒ Y ☐ N

Access/egress and muster points?

☒ Y ☐ N

An under floor inspection is required?

☒ Y ☐ N

(If YES, answer questions in the box, if NO, go to last question)

If YES:

Under floor visual inspection only?

☒ Y ☐ N

Entry to under floor required?

Y / N

Assess the environment and select appropriate PPE for under floor inspections?

Y / ☒ N

☐ 400mm clearance ground to bearer

☐ Manhole 450mm x 450mm

☐ Sufficient flow of oxygen

☐ Buddy present (EQC staff)

☐ Rescue Plan (Dial 111)

☐ Disposable Overalls

☐ Glasses

☐ Safety Footwear

☐ Ear Plugs

☐ P2 Mask

☐ Waterproof Gloves

No manhole available - visual inspection done through vents - no silt visible

Identify and record below specific 'Site Hazards' e.g. large holes/cracks, unstable retaining walls

Y / ☒ N

Hazards: NIL

Comments:

CHECKED





# Inspection Summary

# EQC

Completed by: B RhodesDate: 5/8/13 Page: 1 of 1  
dd / mm / yr

CLM / 2011 / 122912  
SEAN ELVINES  
427 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

Time arrived at site:	<u>8:00</u>	Time left site:	<u>8:35</u>	Was an inspection carried out?:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Customer present:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Customer Name:	<u>Tenant present, customer gave permission</u>		
Access denied <input type="checkbox"/> Loose dogs <input type="checkbox"/> Other <input type="checkbox"/> If other, please provide reason					
If No inspection carried out, why not?: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>					

## Where an inspection has been conducted:

	Yes	No	Notes
- Any land damage under the main access way or other hard surfaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>C2</u>
- Were any bridges or culverts damaged within EQC Cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Were any retaining walls damaged within EQC Cover?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Is an engineer required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Is a valuation required?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Is a resource consent required for any remediation work? (proximity to protected trees and waterways)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Has anything in this pack been escalated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Shared land</u>
- Customer has advised of invoices for emergency work?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- Customer advised of next action?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
- Was any silt found under the dwelling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
- If there was nil damage, why was that?	Building removed <input type="checkbox"/> Building repairs have fixed <input type="checkbox"/> No visible damage <input type="checkbox"/>		
- If a potential or actual 8/9 property, was the dwelling present?	Building removed <input type="checkbox"/> Building present <input type="checkbox"/>		

## Land Damage to Area A? If Yes, add details

Yes ☐ No ☒

## Land Damage to Area B? If Yes, add details

Yes ☐ No ☒

## Land Damage to Area C? If Yes, add details

Yes ☒ No ☐ C1 → C3, 79.6m², refer to legendTotal m² of Damaged Land: 79.6 m² Notional Land Damage Value @\$300/m² (Incl GST): \$23,880.00

Next action

Refer for shared land analysis & re costing

PM  
**CHECKED**

V1.32, FEB 2013



## Land Assessment – Le

Claim N°: _____ Clai

Situation of Loss: .....



SEAN ELVINES  
427 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

Date: 5/8/13

Author: R Parsons

**EQC**  
**EARTHQUAKE COMMISSION**  
*Kōmihana Rūwhenua*

Item N°	Description/Construction	Length	Height/ Width	Depth	Damage	Damaged Area	Evacuated m ²	Inundated m ²	Debris m ³	Access E D
(C1)	Front Lawn (427 Armeagh)	4	1.0	<0.1	Evacuation	4.0	4.0	-	-	E
C2	Concrete path	4.5	3.8	<0.1	Evacuation	17.1	17.1	-	-	E
C3	Lawn (425 Armeagh)	13.0	4.5	<0.1	Undulation	58.5	58.5	-	-	E

CHECKED

CHECKED

TOTAL: 79.6 79.6.



# Shared Land Instruction



SEAN ELVINES  
427 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]

"MASTER FILE"

Date:

5/8/13

Sheet ..... of .....

Tel N°: .....



[REDACTED]  
429 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

Stick Claim File Label here



[REDACTED]  
425 ARMAGH STREET  
LINWOOD  
CHRISTCHURCH  
H: & W: [REDACTED]  
M: [REDACTED]

CHECKED

Stick Claim File Label here

Stick Claim File Label here

Stick Claim File Label here

Notes: .....

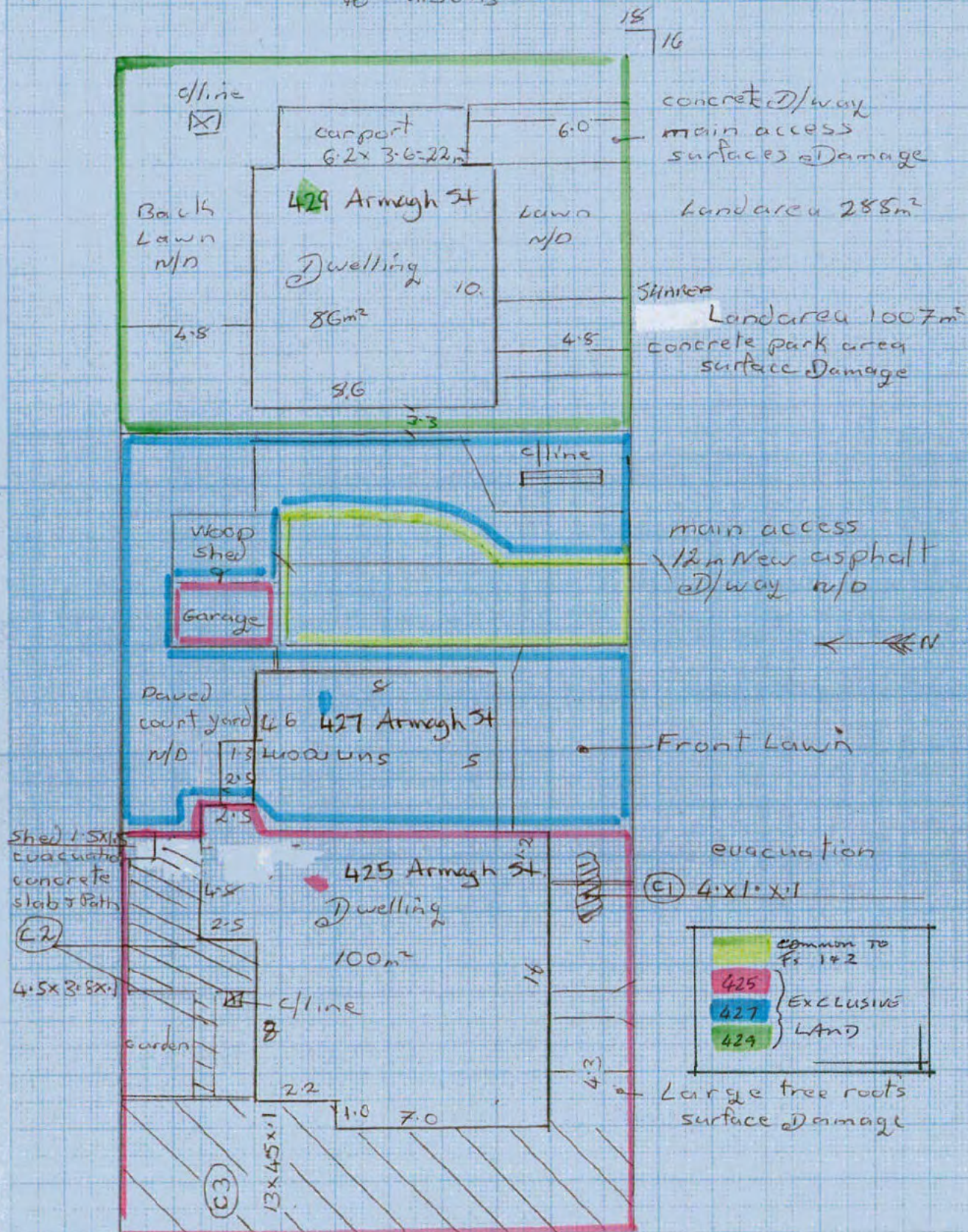
Assessors: Brendan Rhodes









06-08-013  
P Parsons

CHECKED

20/14/JAN/07

CHECKED



CLM/2011/122912

SEAN ELVINES

427 ARMAGH STREET

LINWOOD

CHRISTCHURCH

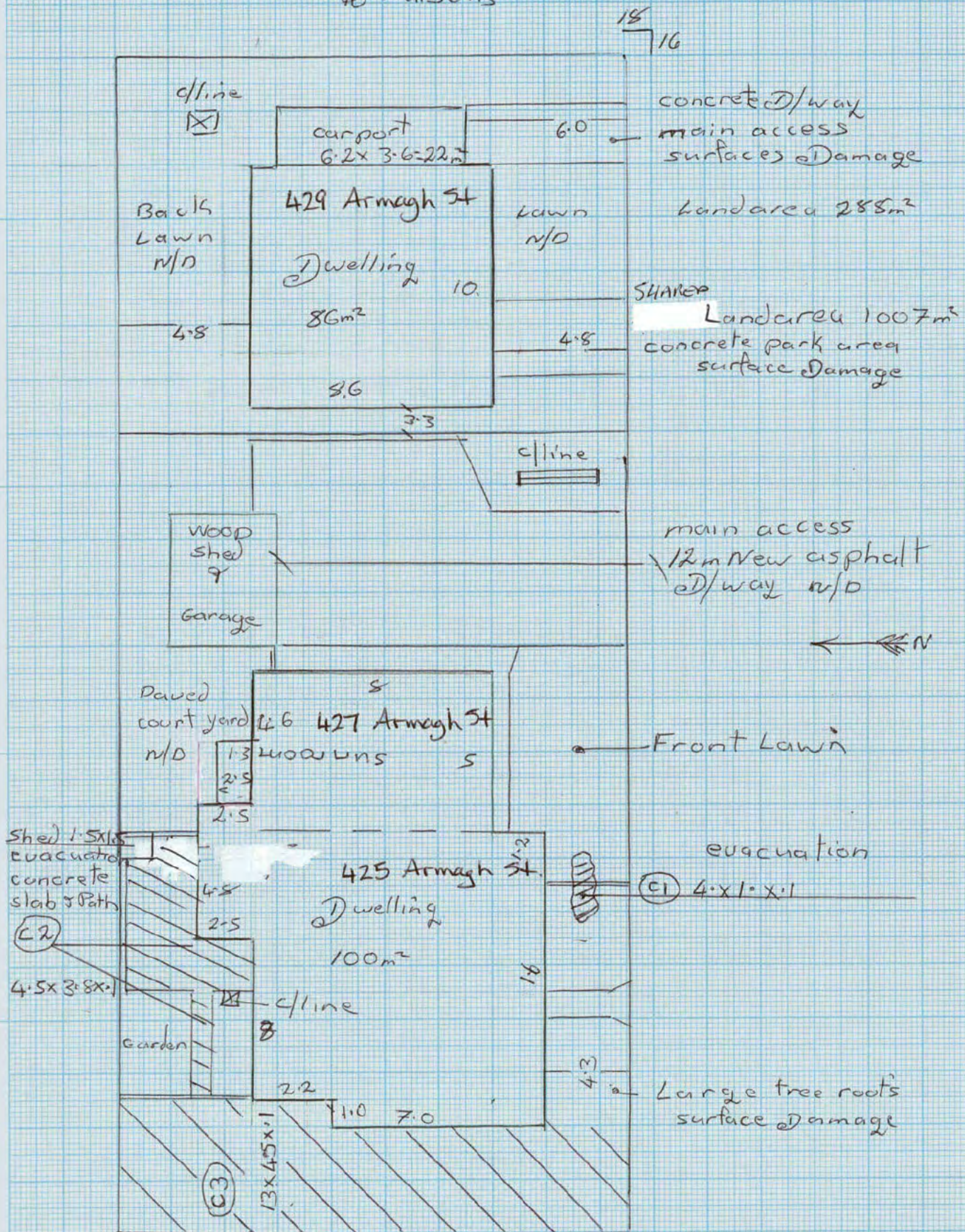
H: &amp; W

M:



06-08-013

R Parsons



AM  
CHECKED



CLM/2011/122912

SEAN ELVINES

427 ARMAGH STREET

LINWOOD

CHRISTCHURCH

H: &amp; W

M:



# REMEDIAL DOCUMENTATION

The following documentation contains information relating to remedial claims against this property.

Remedial claims refer to concerns raised by homeowners following the settlement of their original Canterbury claim(s).

- NHC Toka Tū Ake settlement did not include all earthquake damage
- NHC Toka Tū Ake repair work or repair strategy hasn't or won't repair the earthquake damage to the standard required by the EQC Act
- NHC Toka Tū Ake wasn't or isn't sufficient to meet the reasonable costs of undertaking NHC Toka Tū Ake repair strategy



**LIFT**

FOUNDATION REPAIR SPECIALISTS

Ainsworth Builders Ltd  
107 Leinster Road,  
Merivale,  
P O Box 37-256

3 June 2025

Quote No: 6987

Address: 425 & 427 Armagh Street, Linwood

Dear Shane

Re: Duplex Unit Levelling Quotation

We have much pleasure in submitting our quotation to level the above single-storey timber framed adjoining unit structure with masonry veneer cladding, support on a concrete foundation with isolated piling to timber subfloor (Type B2, as defined by MBIE) with a foundation remediation strategy in accordance with the provided CONCEPTUAL REPAIR PLAN from NZCSE, Ref: SK5 and the below described methodology.

The below quote and methodology are based on the information contained within the Technical Report – Desktop Technical Review & Structural Inspection from NZCSE Civil and structural Engineers Ltd, dated 26 March 2025.

Our price to undertake the below described methodology is:

\$ 74,462.50 + GST

Removal of existing concrete  
Health and safety documentation  
▪ SmartLift Licensed Builder Practice

✉ [info@smartlift.net.nz](mailto:info@smartlift.net.nz)

🌐 [www.smartlift.net.nz](http://www.smartlift.net.nz)

📞 Patrick - 022 010 7512    Ricky - 021 933 411



8 Langstone Lane, Papanui,  
Christchurch, New Zealand, 8052



# LIFT

## FOUNDATION REPAIR SPECIALISTS

Unless expressly stated above as forming part of the Works, all other works are excluded from the Price:

- Temporary services including ablutions, power and fencing.
- Disconnection/isolation of existing power supply.
- Removal and storage of internal floor coverings.
- Removal and replacement of internal flooring.
- Removal and replacement of hard landscaping (1.0m) around the perimeter foundation.
- Subsequent repairs to internal linings and external claddings.
- Subsequent repairs to internal and external services.
- The subsequent replacement of timber due to rot or pest born deterioration.
- Hazardous material testing, removal, and cost of resulting delay if encountered.
- Any possible costs or delays relating to any possible archaeological material onsite.

**Please note:**

- This quote is valid for 90 days.
- This quote is subject to engineering design.
- Payment schedule:
  - 20% due on quote confirmation.
  - 50% due once all lifting pads are poured.
  - 30% on completion of all SmartLift works.
- On signing this quote, you are accepting to our Terms and Conditions of Trade.
- Payment to be made within 7 days of date of invoice.
- No retention payments to be withheld.
- No works will commence until quote and formal conditions have been signed and Returned.
- This quote is based upon the information supplied to SmartLift, should further Information be made available we reserve the right to amend the Price.

If you have any questions, please do not hesitate to call.

Yours faithfully

Signature _____

✉ [info@smartlift.net.nz](mailto:info@smartlift.net.nz)

🌐 [www.smartlift.net.nz](http://www.smartlift.net.nz)

☎ Patrick - 022 010 7512    Ricky - 021 933 411



8 Langstone Lane, Papanui,  
Christchurch, New Zealand, 8052





Costing Breakdown - 425 & 427 Armagh Street, Linwood : SmartLift Quote : 6987				Quantity	Unit	Rate	Cost
Excavation and installation of 600x600x800mm concrete jacking pads, (including labour and plant to lift structure).				34	NO	\$ 1,150.00	\$ 39,100.00
Removal and disposal of concrete base from subfloor.				3	NO	\$ 2,000.00	\$ 6,000.00
Supply and install cementitious grout under levelled foundation beam.				43.5	LM	\$ 175.00	\$ 7,612.50
Jack and pack piling, in accordance with SmartLift Typical detailing.				57	NO	\$ 250.00	\$ 14,250.00
Epoxy crack repairs to concrete foundation beam.				10	NO	\$ 250.00	\$ 2,500.00
Site Establishment, Project Management and P&G's.				1	NO	\$ 5,000.00	\$ 5,000.00
<b>Total</b>							<b>\$ 74,462.50</b>





# TAX INVOICE

Toka Tū Ake – Natural Hazards Commission  
PO Box 790  
Wellington 6140

**Invoice Date**  
13 Mar 2025

**Invoice Number**  
INV-1111

**Reference**  
427 Armagh street  
2011/122912

**GST Number**  
122-970-655

NZ Civil & Structural  
Engineers Limited  
Unit 10, 31 -33 Tyne  
Street,  
Addington,  
Christchurch , 8011

Description	Quantity	Unit Price	Amount NZD
Structural Assessment and Report writing - as per SFA dated 14-01-25	1.00	7,758.00	7,758.00
Shallow Geotech testing as per SFA dated 14-01-25	1.00	1,212.50	1,212.50
		Subtotal	8,970.50
		TOTAL GST 15%	1,345.58
		<b>TOTAL NZD</b>	<b>10,316.08</b>

## Due Date: 27 Mar 2025

Please quote the invoice number when making direct credit payments to A/C No. 06-0293-0304795-01.  
Any questions please email [admin@nzcse.com](mailto:admin@nzcse.com)

# PAYMENT ADVICE

To: NZ Civil & Structural Engineers Limited  
Unit 10, 31 -33 Tyne Street,  
Addington,  
Christchurch , 8011

<b>Customer</b>	Toka Tū Ake – Natural Hazards Commission
<b>Invoice Number</b>	INV-1111
<b>Amount Due</b>	<b>10,316.08</b>
<b>Due Date</b>	27 Mar 2025
<b>Amount Enclosed</b>	

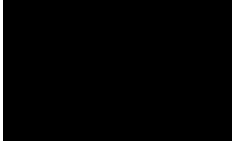
Enter the amount you are paying above





# TAX INVOICE

A & G Calje Family Trust



**Invoice Date**  
16 Jul 2021

**Invoice Number**  
INV-0975

**Reference**  
427 Armagh Street

**GST Number**  
127380880

Enviroflow Ltd  
16a Hurley Street  
Central City  
Christchurch 8011  
NEW ZEALAND

Description	Quantity	Unit Price	Amount NZD
Full sewer and stormwater survey and report. Includes CCTV footage of sewer and stormwater drain and full written report with photographs.	1.00	600.00	600.00
		Subtotal	600.00
		TOTAL GST 15%	90.00
		<b>TOTAL NZD</b>	<b>690.00</b>

## Due Date: 15 Oct 2021

Payment is due within 7 days of the date of this invoice.

Please make payment by bank deposit using your invoice number as reference to:

Enviroflo Ltd  
06 0821 0955226 00

PAYMENT ADVICE			
To: Enviroflow Ltd 16a Hurley Street Central City Christchurch 8011 NEW ZEALAND			
<b>Customer</b>	A & G Calje Family Trust		
<b>Invoice Number</b>	INV-0975		
<b>Amount Due</b>	<b>690.00</b>		
<b>Due Date</b>	15 Oct 2021		
<b>Amount Enclosed</b>			
		Enter the amount you are paying above	



**Enviroflo Limited Trading as  
Enviroflo**  
GST # 127380880

A & G Calje Family Trust  
[Redacted]

PLEASE PAY BY	AMOUNT	INVOICE DATE
<b>23/06/2022</b>	<b>\$11,402.25</b>	<b>16/06/2022</b>

## TAX INVOICE NO. 40589

**Job No.:** 20252  
**Site:** 427 Armagh Street Linwood  
**Order No.:**

### Description

We are pleased to submit our quotation for drainage repairs to your property. Our quote remains valid for 2 years and is presented on the basis of offer and acceptance. All materials purchased by Enviroflo Ltd remain the property of Enviroflo Ltd until paid for in full. An acceptance of this quote means our terms and conditions including the exclusions and clarifications have been fully read and understood and that there is an agreement under these terms. If you require any further information or clarification, please do not hesitate to contact us.

### Exclusions and Clarifications:

- A variation would be required for any additional works or for any excavation beyond the depth of 1.4 meters.
- It is assumed any existing drainage lateral will be in a sound condition.
- All trenches are to be back filled and compacted with materials on site unless specified otherwise.
- We have made no allowances for isolating power or telecommunication services if required.
- No allowance has been made for the replacement of the WC riser pipes.
- We expect the site to clear of obstructions before our start date.
- No allowance has been made for the removal of any obstructions in the path of the drainage trenches.
- We have made no allowances for any de-watering if required.
- We will take all possible precautions to avoid striking services but in the unlikely event that an unmarked service is struck we will not be liable for repairs or replacement

Item	Quantity	Unit Price	Total
Site Establishment	1.00	\$700.00	\$700.00
Service Location	1.00	\$175.00	\$175.00
Remove and replace sewer per metre	11.00	\$195.00	\$2,145.00
Remove and replace sewer and stormwater. Shared trench per metre	11.00	\$250.00	\$2,750.00
Remove and dispose existing gully. Supply and install new gully trap and dish	1.00	\$350.00	\$350.00
Remove and replace asphalt driveway per m2	15.00	\$70.00	\$1,050.00
Remove and dispose bush/tree	1.00	\$180.00	\$180.00
Remove and replace stormwater per m	11.00	\$165.00	\$1,815.00
Supply and install bubble up sump	1.00	\$550.00	\$550.00
Supply and compact soil, level, hydroseed above trench lines	1.00	\$200.00	\$200.00
<b>Total</b>			<b>\$11,402.25</b>
<b>Incl. GST of</b>			<b>\$1,487.25</b>





Enviroflow Limited Trading as  
Enviroflo  
GST # 127380880

PLEASE PAY BY

AMOUNT

INVOICE DATE

**23/06/2022****\$11,402.25****16/06/2022****TAX INVOICE NO. 40589**

<b>Sub-Total ex GST</b>	\$9,915.00
<b>GST</b>	\$1,487.25
<b>Total inc GST</b>	\$11,402.25
<b>Amount Applied</b>	\$0.00
<b>Balance Due</b>	\$11,402.25

**How To Pay**

INVOICE NO. 40589

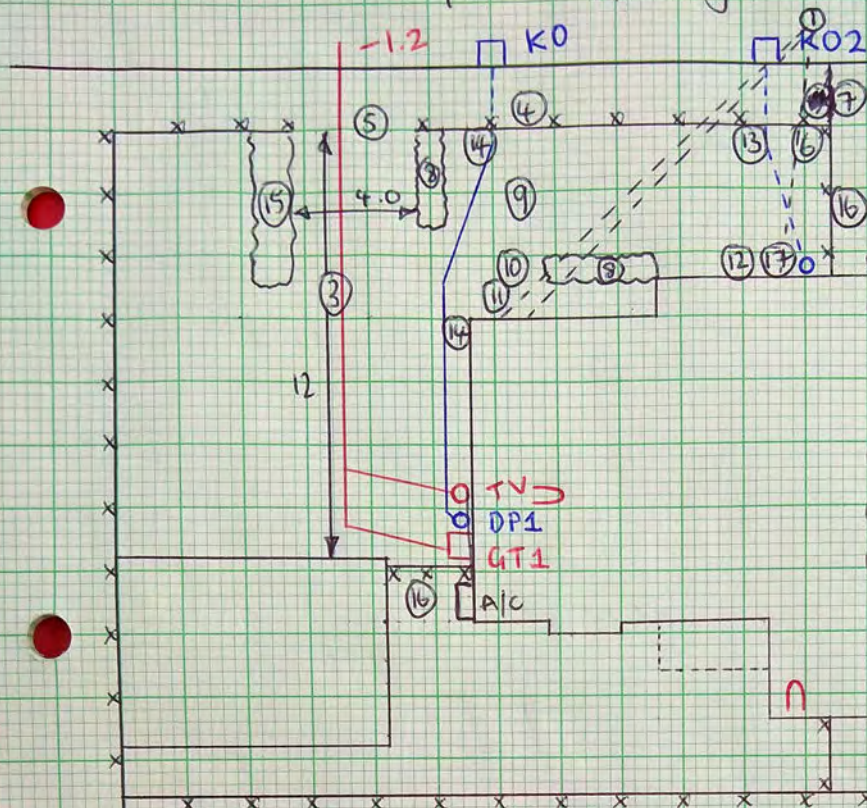
DUE DATE: 23/06/2022 AMOUNT DUE: \$11,402.25

**Direct Credit**

Bank **ANZ**  
Acc. Name **Enviroflow Limited**  
Acc. No. **06-0821-0955-226-00**



427 Armagh St



Spoke to 425  
and confirmed that  
the rear toilet is  
theirs. Can't see  
a AT so must be  
on their system.

- ① Powerpole
- ② Overhead wires
- ③ Asphalt d/way. (4m wide, 12m long).
- ④ Trellis fence with wide concrete footing and post.
- ⑤ Picket fence gate.
- ⑥ Large cabbage tree. (overhead line goes through branches)
- ⑦ Phone
- ⑧ Small hedge
- ⑨ hydroseed
- ⑩ Old light pole. (caution may be buried wires here)
- ⑪ Concrete path (1m²)
- ⑫ Phone & fibre.
- ⑬ Small shrub.
- ⑭ Yucca tree.
- ⑮ Large hedge
- ⑯ 1.5m weatherboard fence
- ⑰ Garden bed (small shrubs)



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- ⑰ Garden bed (small shrubs)





# Cavity Critter

## TAX INVOICE

Gst No.115-517-708

CLIENT: EQC In House Repair Programme

Invoice

9886

Level 11, Majestic Centre

100 Willis Street

Wellington

DATE

07/02/2025

JOB DESCRIPTION	QTY	COST	Total
Job Address: 427 Armagh Street, Linwood			
Claim:			
Cavity Critter Report Underfloor	1	\$686.96	\$686.96
Cavity Critter Report Exterior Roof		\$686.96	\$0.00
Cavity Critter Report Interior Roof		\$686.96	\$0.00
Manhole		\$115.00	\$0.00
Carpet relay		\$110.00	\$0.00
Film footage		\$44.50	\$0.00
Revisit fee		\$175.00	\$0.00
Travel		\$1.04	\$0.00
Labour for travel		\$68.00	\$0.00
Vercality report under 250msq Single level		\$305.00	\$0.00
Floor Levels: under 250msq Single level		\$305.00	\$0.00
Floor Levels: under 100msq Second level		\$65.00	\$0.00
Find water leak only		\$275.00	\$0.00
Service running, 1st hour		\$239.13	\$0.00
Service running cost per hour		\$170.00	\$0.00
For banking purposes our account name is Under floor inspection Ltd			
Bank Account No. 12 3149 0107790-00	SUB TOTAL		\$686.96
	GST		\$103.04
Company address	TOTAL		\$790.00

106 Raddens Rd RD2 Kaiapoi 7692

[gideon@underfloorinspections.co.nz](mailto:gideon@underfloorinspections.co.nz)





# Cavity Critter

## TAX INVOICE

CLIENT: Answorth Builders

Gst No.115-517-708

Invoice

10018

DATE

02/06/2025

JOB DESCRIPTION	QTY	COST	Total
Job Address: 427 Armagah Street. Linwood			
Claim:			
Cavity Critter Report Underfloor		\$686.96	\$0.00
Cavity Critter Report Exterior Roof		\$686.96	\$0.00
Cavity Critter Report Interior Roof	1	\$686.96	\$686.96
Manhole		\$115.00	\$0.00
Carpet relay		\$110.00	\$0.00
Film footage		\$44.50	\$0.00
Waste of time fee		\$175.00	\$0.00
Travel		\$1.04	\$0.00
Labour for travel		\$68.00	\$0.00
Vercality report under 250msq Single level		\$305.00	\$0.00
Floor Levels: under 250msq Single level		\$305.00	\$0.00
Floor Levels: under 100msq Second level		\$65.00	\$0.00
Find water leak only		\$275.00	\$0.00
Service running, 1st hour		\$239.13	\$0.00
Service running cost per hour		\$170.00	\$0.00
For banking purposes our account name is Cavity Critter Limited			
Bank Account No. 12 3149 0107790-00	SUB TOTAL		\$686.96
<a href="mailto:gideon@underfloorinspections.co.nz">gideon@underfloorinspections.co.nz</a>	GST		\$103.04
Company address	TOTAL		\$790.00

106 Raddens Rd RD2 Kaiapoi 7692

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<b>Date</b>	26 March 2025	<b>Job Ref.</b>	CLM/2011/122912
<b>Address</b>	427 Armagh Street, Linwood, Christchurch 8011	<b>Author</b>	J McCloskey
<b>Client</b>	Natural Hazards Commission Toka Tū Ake	<b>Version</b>	V1.1 Approved
		<b>Status</b>	Issued for Information

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## TR001: Technical Report – Desktop Technical Review & Structural Inspection



*This Technical Report has been prepared by NZ Civil & Structural Engineers Ltd (NZCSE) at the request of its Client, Natural Hazards Commission Toka Tū Ake, in accordance with the scope of engagement provided.*

*This Technical Report has been prepared exclusively for the Client's use and no liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person without our prior written permission.*



# Technical Report

## 1. Overview

Site Summary			
Site Location	427 Armagh Street, Linwood, Christchurch 8011		
Legal Description	Flat 2 DP 303406 on Lot 4 DP 10444 having share in 1007 m2		
MBIE Technical Category	Green Zone, Technical Category 2, Yellow – Minor to moderate land damage possible		
Topography	Flat and level		
Soil Type	Dominantly alluvial sand and silt overbank deposits		
Identified HAIL Site	No	Flood Management Area	No

Building Summary			
MBIE Foundation	Dwelling: Perimeter concrete footing – Type B2; Conservatory: Slab on Grade – C2	Occupied	Yes
Walls	Heavyweight – Bricks	Levels	One
Roof	Heavyweight – Concrete Tiles	Floor Plan Area	Approx 73m ²
Age	Circa 1945	Date of Visit	29/01/2025
Peripherals	External Garage (Adjoined with garage for 425 Armagh Street)		

Background Summary	
- NZCSE has read the Engineering Letter of Engagement provided on 17/01/2025 by the Natural Hazards Commission Toka Tū Ake (formerly EQC). Information provided is summarised below.    - The property was first assessed by EQC on 14/02/2011. Damage included:     - Interior: Wall &amp; ceiling linings cracks in the Kitchen/Dining room and Entry Hallway; wall lining cracks in the Lounge, Bedrooms 1 &amp; 2, and the Bathroom; cornice cracking in the Lounge and Bedroom 1; tile grout cracking (walls) in the Kitchen &amp; Bathroom and floor tiles in the Kitchen (1x cracked tile). The Bedroom 1 door was noted as binding and damage recorded in the Rear entry (conservatory) included 1.8m² of mortar cracking and soffit/fascia separation.    - Exterior: 1.0m of mortar cracking was recorded on the East (E) elevation (plus the cracking recorded in the rear porch (above)) and plaster cracking in the front porch; 1.0m of ring foundation cracking; 15m of Roof ridge tile mortar cracking and; cracking to the chimney top plaster.          - A second assessment was carried out on 23/05/2011 after the February 2011 earthquake. Additional damage recorded:     - Interior: The ceiling was damaged in the Lounge &amp; Bedrooms 1 &amp; 2. The Bedroom 2 door was noted as binding.    - Exterior: plaster cracking (top of walls) was recorded. The chimney was recorded as structurally damaged above the roof.          - Emergency works (EW) involving removing the chimney top and securing the roof was undertaken on 427 Armagh Street under EQC's Emergency Works (EQ) provisions in March 2011.    - The owner of 427 Armagh Street applied to opt out of the PMO repair program in early 2012. EQC's subsequent cash settlement of the claim was then based upon a customer provided Spence Consultants Ltd. quotation, paid on invoice.    - It is understood the property changed hands in early 2012 and then again in 2018.	

# Technical Report

## Background Summary Continued

7. A bump in the wall in the neighbouring unit (425 Armagh Street) was raised with EQC in March 2015. This was assessed by EQC in January 2016 and concluded as not EQ-related.
8. Following unrepaired EQ damage being noted on the building's exterior during a recent site visit to discuss drainage damage, both units were reviewed by NHC at a second site visit undertaken on 18 November 2024. Dislevelment issues were recorded at the site visit and an engineering review of the building was recommended in the assessment report that followed the site visit.
9. NZ Civil & Structural Engineers Ltd (NZCSE) has subsequently been engaged by the Natural Hazards Commission Toka Tū Ake, in the capacity of independent experts, to review all relevant third-party documents, attend site and perform suitable investigations to assess the property for outstanding earthquake damage, and provide guidance on lawful repair of this damage.
10. A structural assessment, full level survey, verticality survey, and shallow geotechnical investigations were carried out by NZCSE on 29/01/2025.

## 2. Third Party Documentation

The following section provides a summary of key information gathered from third party documents, and where appropriate includes interpretation of this information by NZCSE. This commentary should be read in conjunction with the full documentation.

Date	Document Information	NZCSE Document Summary
Various	Christchurch City Council (CCC) – <i>Property Files</i>	There are no documents on file for the construction of the dwelling or garage. The property files contain the following relevant information:       • 1977: Building Permit, plans, and specifications on file to enclose carport to form a garage (second garage adjoined to original).     • 1978: Building Permit and drawings on file to erect concrete block wall fence.     • 1987: Building Permit, plans, and specifications on file to construct fire wall between the two flats.     • 1988: Building Permit to construct a Conservatory on 427 Armagh Street     • 2001: Subdivision application.     • 2011: Rapid EQ Assessment Form Level 1 lists: No Damage.       <u>NZCSE Comments:</u>       • The building has existed since the late 1940's according to the historic aerial imagery. No property file records relating to the origin construction found on the council files. The property file records indicate the concrete partition wall was constructed to ceiling level when the building was first constructed but was extended to the roofline in 1987. A block wall extension to this wall was also added along the north elevation at this time to form a complaint firebreak between the two units,
20/12/2010	Homeowner Photos	Photos on file show EQ damage as submitted by the homeowner at this time.   <u>NZCSE Comments:</u>



# Technical Report

Date	Document Information	NZCSE Document Summary
		These photos were taken prior to the February 2011 earthquake. The photos show minimal interior cosmetic damage. The chimney has vertical crack running through the stack and some external veneer cracking is evident.
14/02/2011	EQC – File Note / Statement of Claim Checklist / Scope of Works / Sketch   CLM/2010 /011835	The File Note contains the following relevant information.   Damage Description      - Land                 - No Claim          - Dwelling                 - Minor damage to dwelling interior &amp; exterior    - Chimney Damaged                     - Minor cosmetic damage to plaster finish.                   The Statement of Claim Checklist contains the following repair strategy.      - Lounge                 - Wall crack – 0.30m                     - Rake out stop paint.          - Cornice mitre crack – 0.10m                     - Gap fill, paint scotia                - Dining Room                 - Tile grout crack – 2.00m                     - Rake out grout, seal with silicon          - Wall crack – 5.00m                     - Rake out, stop, paint          - Ceiling crack – 1.00m                     - Rake out, stop, paint.                - Kitchen                 - Broken tile – 0.60m²     - Replace tiles                - Front Porch                 - Plaster cracking – 5.00m                     - Grind out, plaster re finish stucco, paint                - Bedroom 1                 - Door sticking                     - Remove door, ease, paint, re hang.          - Scotia separation – 0.10m                     - Gap fill, paint                - Bedroom 2                 - Wall crack – 1.00m                     - Rake out, stop, paint                - Bathroom                 - Wall crack – 1.00m                     - Rake out, stop, paint          - Bath tile grout cracks – 0.60m²     - Re grout.                - Entry / Hall(s)                 - Wall crack – 1.00m                     - Rake out, stop, paint          - Ceiling crack – 0.80m

# Technical Report

Date	Document Information	NZCSE Document Summary
		▪ Rake out, stop, paint     • Rear Entry                    ○ Brickwork cracking – 1.80m²      ▪ Rake out, re point brickwork, paint bricks           ○ Conservatory fascia separation – 2.00m                        ▪ Seal with silicone           ○ Timber frame plaster separation – 2.00m                        ▪ Gap fill, paint                 • Roof                    ○ Broken tiles (3)                        ▪ Replace           ○ Ridge capping 15.00m                        ▪ Rebed capping.                 • External Walls – East                    ○ Brickwork cracking – 1.00m                        ▪ Grind out mortar re point brickwork                 • Chimney                    ○ Chimney cracked – above roof. Minor crack 0.6 to plaster – chimney is sound.                        ▪ Replaster crack                 • Foundations                    ○ Crack – plaster finish foundation – 0.20m                        ▪ Grind out crack, plaster.                 • Supplementary Notes:                    ○ Primary heat source – heat pump in lounge.             <u>NZCSE Comments:</u>       • The scope predates February 2011 earthquake.     • Minor levels of damage were recorded.     • Bedroom doors were reportedly sticking in the centre of the dwelling where steep slopes have recently been measured. These doors were proposed to be eased and repainted.     • No foundation levelling works were proposed at this time.
15/03/2011	Homeowner – Emergency Works Documents	A letter, photos, and invoice on file show the homeowner arranged to have emergency repairs to the chimney completed after damage caused by the 22 February 2011 earthquake.
23/05/2011	EQC – Inspection File Note / Scope of Works / Sketch  CLM/2011/122912	The File Note contains the following relevant information.   Damage Description       • Land                    ○ No visible damage and none claimed/reported           • Dwelling                    ○ Minor cracks to brickwork and concrete skirt on exterior and minor, cosmetic wall/ceiling cracks (and a little separation around some door/window frames) in most rooms.     ○ The decommissioned chimney was brought down (after 22 Feb event) &amp; roof made weather proof.



# Technical Report

Date	Document Information	NZCSE Document Summary
		• Was a full inspection done?                    ○ Inspected:                        ▪ All rooms     ▪ All accessible external surfaces     ▪ In roof (not on roof: conc tiles too steep)     ▪ Sub-floor space                   The Statement of Claim Checklist contains the following repair strategy.       • Lounge                    ○ Rake, stop &amp; paint walls (18.0 x 2.7) and ceiling (5.0 x 4.0)           • Kitchen                    ○ Rake, stop &amp; paint walls (13.8 x 2.7)     ○ Rake, stop &amp; paint ceiling (4.5 x 2.4)     ○ Tiles separations (corner) 4.0 Hrs     ○ Replace 1.0m floor tiles           • Bedroom 1                    ○ Rake, stop &amp; paint walls (7.8 x 2.7) and ceiling (4.1 x 2.3)     ○ Ease door           • Conservatory                    ○ Paint only 3 walls (7.6 x 2.4)           • Bedroom 2                    ○ Rake, stop &amp; paint walls (7.6 x 2.7) and ceiling (3.8 x 3.0)     ○ Ease door           • Bathroom                    ○ Fill &amp; paint (8.2 x 2.7) walls only           • Entry / Hall(s)                    ○ Rake, stop &amp; paint walls (12.8 x 2.7) and ceiling (7.7m²)           • Entry Main Door                    ○ Fill &amp; paint 3 walls (4.0 x 2.4)           • Roof                    ○ Replaster ridge cap (2.0 L/M)     ○ Inspected roof cavity           • External Walls                    ○ North                        ▪ Cracking to stucco: grind out, fill, restucco &amp; paint (2.2m²)     ▪ Blockwork cracking: grind out &amp; remortar (0.4 L/M – 3 hrs)     ▪ Replace 2 bricks (2 hrs)           ○ South                        ▪ Cracking to stucco: grind out, fill, restucco &amp; paint (2.3m²)           ○ East                        ▪ Cracking to stucco: grind out, fill, restucco &amp; paint (1.5m²)     ▪ Replace 1 brick (2 hrs)     ▪ Wall cracks: grind out crack &amp; remortar (1.0 L/M – 4 hrs)           ○ West                        ▪ Intertenancy/common wall                 • Chimney                    ○ Replace above roof (0.5 x 0.6 x 1.5)           • Foundations                    ○ Replaster 2.8m² on skirt           • Services                    ○ Claimant is having plumber examine sewers outlet – intermittent backflow

# Technical Report

Date	Document Information	NZCSE Document Summary
06/09/2011	EQC – Land Inspection Photos	The annotated aerial photo notes "Paver undulations &gt;10mm" between the conservatory and the garages.   Photos recorded show the precast concrete beams above the veneer panels have separated due to wall settlement.
2012	Opt-Out & Cash Settlement Documents CLM/2011/122912	12/01/2012: Signed forms for the homeowner to opt out of the CRRP repairs programme.   16/01/2012: Quotation for \$18,000 including GST from Spence Consultants Ltd: Based on EQC Scope dated 23 May 2011.   30/03/2012: Invoice for \$16,100 Inc GST from Spence Consultants Ltd.   A letter on file from EQC shows this was cash settled to the homeowner in July 2012.
22/11/2024	Natural Hazards Commission Toka Tū Ake – Floor Levels	A site inspection was carried out at the property, and floor levels were taken across both units (425 &amp; 427 Armagh Street).



# Technical Report

Date	Document Information	NZCSE Document Summary
		- Floor dislevelment across the home exceeds MBIE guidance tolerances both on a global and localised basis and as the cause of the global tilt is not clear, this dislevelment should be assessed by an appropriately qualified engineer.    - Drainage issues on the property remain unresolved at the time of this report.       <u>NZCSE Comments:</u>      - NZCSE has been engaged based on the outcome of this report.
12/02/2025	Cavity Critter – Underfloor Inspection Report	See notes under Section 3.2 <i>Foundations</i> below for further information. A full copy of this report has been attached in Appendix E.

# Technical Report

## 3. Observations & Findings

The following section presents an overview of structural observations and findings noted during the recent engineering inspection performed by NZCSE. Photographs and drawings that are referenced within the body of this report are provided in Appendix A & B respectively.

### 3.1. General

4. The subject property is part of a multi-unit building comprising two units, addressed as 425 and 427 Armagh street. Property file records show the existing partition wall was extended to roofline from ceiling height between 425 and 427 Armagh street in 1987. The wall was also extended to form a divide between the laundry areas of both dwellings along the north elevation.
  - o The scope of NZCSE's engagement includes both adjoining units. Whilst the focus of this report is 427 Armagh Street, consideration has been provided of the overall structure and holistic performance. A separate report relating to 425 Armagh Street has also been provided to our client.
- Property layout and local features (Photo Set 1):
  - o For ease of reference, the elevation facing Armagh street is referred to as the south elevation.
  - o The following information has been obtained from review of aerial imagery:
    - 1940-1944 is the earliest available aerial imagery of the property, shows the original property.
    - 1945-1949 aerial imagery shows the new dwelling and original garage.
    - 1960-1964 aerial imagery shows the carport against the garage.
    - 1980-1984 aerial imagery shows the second garage (carport permitted to be enclosed in 1978).
- For external views of the dwelling, refer to Photo Set 2.
- Homeowner information:
  - o The current owner purchased the property circa 2018, after the Canterbury Earthquake Sequence (CES) and after the 2011 earthquake repairs were completed. The property has been tenanted ever since.
  - o Based on our conversation with the homeowner and the Natural Hazards Commission Toka Tū Ake engineering letter of engagement, we understand that the homeowner's concerns relate primarily to the following:
    - Possible earthquake damage to the drainage and whether the foundation settlement and floor slopes across the dwelling have been caused by earthquake settlement from the 2011 earthquakes.
  - o The homeowner informed us of the following private renovations and internal alterations carried out since purchasing the property in 2013:
    - The roof gutters for both 425 and 427 Armagh Street were replaced in the past year.
    - No structural alterations have been carried out to the dwelling and garage since taking ownership of the property in 2018.
- The scope of our engagement is to review the original earthquake assessments and subsequent repairs that were carried out to the multi-unit building and provide recommendations on any potential remediation required and whether any further repairs are required to address outstanding earthquake related damage.

### 3.2 Foundations – (refer to SK4 Foundation Plan for subfloor layout)

- Foundations of the multi-unit building are categorised as Type B2 (timber-framed superstructure with heavyweight cladding supported by concrete perimeter foundation wall and internal piles) in accordance with Table 2.1 of MBIE Guidance Document (Photo Set 3).
  - o A perimeter foundation excavation was carried out along the west elevation of 425 Armagh Street that shares the same foundation construction as 427 Armagh Street. The embedment depth was found to be embedded approximately 350mm below ground level (BGL) (Photo 3A).



# Technical Report

- According to the NZCSE shallow geotechnical testing carried out on site, the perimeter foundations are embedded within the weaker organic topsoil layer where long term foundation settlement is expected to occur.
- The configuration of the dwelling construction shows the subfloor bearers run from north to south in the same direction as the internal heavyweight partition wall between the two dwellings.
- The perimeter foundation was scanned for reinforcing using a Hilti PS50 Multidetector which did not confirm the presence of steel reinforcing. Given the age of construction and absence of cracks, it is likely that the foundation does contain some reinforcing steel, refer to Photo 3D.
  - The *Cavity Critter* report shows the internal face of the perimeter wall and partition wall is in reasonable condition with only a few minor cracks identified. It should be noted that the northeast perimeter foundation section was unable to be accessed due to obstructions within the subfloor.
  - Most of the foundation cracks identified on the exterior were found along the south and east perimeter foundation. We note that the perimeter foundation cracks have not been previously repaired or infilled as shown in Photo Set 3. However, the post-earthquake scopes allowed for 2.8m² of perimeter foundation plaster repairs.
- Externally, NZCSE has observed several cracks to the perimeter foundation of 427 Armagh Street along the southeast and eastern elevation coinciding with the floor falling from south to north along the eastern elevation.
- Based upon the contents of the *Cavity Critter Underfloor Inspection Report*, the following observations have been made (Refer to SK4 Foundation Plan):
  - 427 Armagh Street is supported by a perimeter concrete foundation with a suspended timber floor supported on 47x precast concrete piles. Most of the internal piles have a damp-proof membrane (DPM) of varying thicknesses and have no structural fixings between the pile and bearer. None of the piles appear to have been packed and none of the bearers appear to have been notched in the past.
  - The bearer ends are supported on the perimeter foundation wall.
  - The subfloor report shows areas of broken concrete roof tiles spread across the subfloor between the piles, likely remaining from the when the multi-unit building was constructed.
  - Access to the northeast corner of the subfloor below the kitchen area was restricted due to stacked subfloor insulation and building waste material.

## 3.3 Floors & Fixtures

- A level survey was undertaken throughout the multi-unit building using a Zip Level Pro2000 (Refer to SK1 Floor Levels and SK2 Contours Plan):
  - A total floor height variation of 64mm was measured across the 427 Armagh Street footprint with numerous slopes exceeding 0.5% (1 in 200).
  - The following notable slope trends were observed across the floor plan:
    - The floor exhibits an overall trend of falling from south to north with the lowest point located in the northeast corner of the kitchen.
    - Additionally, the partition wall was found to fall from south to north and the floor slopes across the lounge and bedroom 1 were recorded to fall towards the partition wall, as illustrated on SK2.

The following information was noted during NZCSE's internal assessment, refer to relevant photo sets in Appendix A:

- **Lounge**
  - The heavyweight partition wall that divides 425 and 427 Armagh Street forms the western wall in the lounge. The floor levels across the lounge fall from south to north with the steepest slopes present in the northwest corner of the room found to fall towards the partition wall.

# Technical Report

- o The slopes across the floor are mirrored by the ceilings. We understand that no wall or ceiling linings have been replaced in this room since the earthquakes, however cracking damage to the ceilings and walls was noted in the post-earthquake scopes.
- o No damage to the functionality of the windows or doors in this room was recorded in the post-earthquake scopes. We noted the presence of lining creasing damage above the door which is indicative of differential settlement across the door opening (photo 4E) The floors across the door opening vary by 10mm on the inside of the room.
- o The chimney is located alongside the partition wall and according to the council record, the partition wall was retrofitted circa 1987 after the chimney was constructed. It is unclear if the chimney is connected to the partition wall. It is important to note that the subfloor images taken in this area of the dwelling are obscured by the sagging insulation and debris present within the subfloor.
- o We understand that the chimney was constructed with reinforced concrete and was removed to below the roofline after the earthquakes. The structure below the ceiling height was deemed to be safe. NZCSE did not see any signs of wall lining damage either side of the chimney to indicate ongoing movement of the remaining chimney structure has occurred since the work was carried out.
- **Bedroom 1**
  - o The floor across this room has settled differentially with a high point in the centre room and the steepest slopes present in the northwest corner. Overall, the floors fall to the north and towards the partition wall that forms the western wall of the room.
  - o The original EQC scope allowed for crack repairs to the wall and for the door to be removed, eased, painted and rehung. The door head level falls north by 4mm across the opening while the corresponding floor falls by 8mm to the north.
  - o Levels recorded across the fitted wardrobe indicate that the wardrobe is tilting in the same direction as the floor. The doors were slightly racked in the framing and the doors are rubbing against the framing when fully closed. The floor is falling to the north across the opening.
  - o The window between the bedroom 1 and the laundry is painted shut and were unable to be opened.
- **Bedroom 2**
  - o The floor across this room is reasonably level with an overall floor level variance of 18mm, falling towards the north. The door head and windowsills were found to be level.
  - o The post February 2011 EQC scope allowed for the door to be eased, however the door head is level and the floor level variance across the door is minor. The door frame is tilting to the north, so it is possible that the door framing was slightly racked which meant the door required easing.
- **Hallway, Bathroom and Kitchen (photo sets 3&4)**
  - o The floor and ceiling across the hallway and bathroom follow the overall slope trend of the dwelling and fall towards the north. The bathroom door head falls in the same direction as the floor towards the north.
  - o The bathtub and floor levels in the east-west direction are approximately level
  - o Post earthquake repair to the bathroom and hallway involved filling the lining cracks and repainting. No wall or ceiling lining required replacement.
  - o The floor level across the kitchen falls relatively uniformly from south to north as illustrated by the contours on SK2.
  - o The kitchen benchtop was found to mirror the floor and ceiling slopes.
  - o Brick cladding cracking and separations were identified along the concrete beams that are seated on top of the veneer along the eastern elevation (Photos 3E and 3F). This damage was noted in the post-earthquake scopes and EQC land assessment. It appears that some of these repairs were carried out, however several of the separations along the top of the wall remain unrepaired.



# Technical Report

- **Laundry and porch**

- The porch is founded on a concrete slab-on-grade and is a step down from the kitchen and laundry floor level. The slab was scanned using a Hilti PS50 Multidetector and no reinforcing was detected. Photo 4D shows minor separations between the concrete lintel and the soffit framing.
- The partition wall dividing the two dwellings forms the west and north wall of the laundry. The post-earthquake scopes allowed for mortar crack repairs to the blockwork and for the wall to be repainted which suggests some differential settlement occurred along this wall during the CES. No cracks were identified along the visible area of wall during the NZCSE assessment.

## 3.4 Walls

- The walls of both dwellings are timber-framed and clad externally with a heavyweight red brick veneer cladding. The partition wall (extended above ceiling height circa 1987) is constructed from reinforced concrete and masonry extending from the floor to the underside of the roof.
  - During the NZCSE site inspection, some mortar cracking was identified along the east elevation of 427 Armagh Street outside the kitchen.
- The property file records suggest the partition wall between the two units comprises reinforced masonry blocks with reinforced bond beams at the ceiling and roof line level. Most of the intertenancy partition wall below ceiling level was unable to be inspected for internal cracking damage due to the wall being lined with plasterboard. No damage to the wall above the ceiling level was visible within the roof space.
  - The EQC post-earthquake scope noted cracking damage to the partition wall with a repair and repaint allowed for in the cash settlement provided.
- The walls are lined internally with plasterboard. It is understood that primarily cosmetic repairs were carried out as part of earthquake managed repairs. The following internal wall observations were made during the NZCSE site inspection:
  - Minor wall lining cracks was identified above the lounge door indicating some settlement has occurred in this area.
  - The partition wall was scanned using a rebar scanner and reinforcing was detected.
- A verticality check was undertaken in order to determine the incline of walls and other vertical elements, using a Bosch DNM 120 L Professional digital spirit level (refer to SK3 Verticalities Plan):
  - Overall, the internal walls and door frames were found to tilt in the general direction of the foundation slopes to the north and towards the partition wall.

## 3.5 Roof ( Photo Set 6)

- A limited visual inspection of the internal roof space and the partition wall above ceiling height was carried out as part of the NZCSE site assessment. The following was noted :
  - The concrete tiles are supported by tile battens spanning across rafters connected to a ridge board. The tiles are secured to the battens and rafters using wire ties. The rafters are supported by under purlins with timber struts, and the ridge board is supported by timber props. The under purlins are further supported by props fixed back to the top of the internal walls running through the centre of the dwelling.
  - The roof plane appears to be sagging when viewed externally. This is assessed to be primarily due to a lack of internal support. It is common to observe undulations across the roof plane in dwellings of this construction era, especially where heavyweight concrete roof tiles have been used as cladding. To rectify this issue, it is recommended that additional struts are installed at the ends of the under purlins to reduce the undulations and provide additional structural support.
  - The partition wall was viewed from inside of the roof space, and no step cracking was identified. It was noted that the wall above the ceiling line is constructed using a combination of poured in-

# Technical Report

situ concrete and masonry concrete blocks. No cracking was identified on the wall when viewed from the internal roof access.

- o An unrestrained concrete header tank was identified in the roof space. We recommend this is restrained or removed if it is no longer in use.
- The internal ceilings are lined with plasterboard. It is understood that only cosmetic repairs were originally required as part of earthquake-managed repairs, with no localised lining replacement deemed necessary following the CES.
- The owners informed us that the external gutters have been fully replaced within the past year across both dwellings at 425 and 427 Armagh Street.

## 3.6 Garage ( Photo Set 7)

- The garage for 427 Armagh Street is the lean-to structure on the right-hand side of the original garage building. It was originally a carport and was enclosed in 1978 to form an adjoining garage space. We understand the concrete slab was initially part of the driveway paving.
- The garage walls are timber-framed with cement sheet cladding, and the roof is covered with lightweight corrugated iron cladding. The garage is currently being used for storage, and the slab is partially covered linoleum.
- A level survey was undertaken throughout both garages using a Zip Level Pro2000 (refer to SK1 Floor Levels and SK2 Contours Plan):
  - o A total floor height variation of 108 mm was measured across the footprint of the 425 Armagh Street garage, with slopes exceeding 0.5% (1 in 200).
  - o The concrete slab falls from the northeast corner to the southwest corner, towards the vehicular door.
  - o The garage door head was measured to be level across a 58 mm slab fall. The vehicle tilting doors are functional. Verticality measurements show the wall framing generally follows the floor slopes.
  - o No damage was noted to the garage during the post-earthquake assessments.
  - o There is no evidence to suggest that the 2011 earthquakes have had a material impact on the garage structure. No repairs are deemed necessary.



# Technical Report

## 4. Shallow Geotechnical Investigations

### 4.1. General

The following section provides an overview of the geotechnical investigation and is based upon a site walkover, shallow soil investigations and a desktop review of the New Zealand Geotechnical Database (NZGD).

- The location of test sites and results of hand auger & Scala penetrometer investigations are provided in Appendix D.
- Soil classification has been carried out in line with 'Field Descriptions of Soils and Rocks' by NZ Geotechnical Society Dec 2005, and Scala penetrometer testing performed in accordance with NZS 4402 Test 6.5.2:1988 – Determination of the Penetration Resistance of a Soil.

### 4.2. Desktop Study

A desktop study of information available on the NZGD was undertaken on 10/03/2025 and recorded the following:

- Moderate to severe liquefaction on and immediately surrounding the property following the 22 February 2011, event was interpreted from aerial photography. Minor liquefaction was observed surrounding the property following the June 2011 Event. The property was not mapped following the 4 September 2010 event.
- No ground crack locations have been mapped on the site or on the adjacent properties.
- Information from the Property Summary Report, based on Lidar survey data, indicates that the property has undergone a mean cumulative elevation change of -0.22m as a result of the CES. A portion of this movement is indicated to be tectonic (-0.18m).

### 4.3. Site Walkover Assessment

A site walkover assessment was conducted on 29/01/2025.

- At the time of inspection, the property showed some evidence of land damage attributable to the effects of liquefaction/liquefaction ejecta:
  - Cracking and settlement of the concrete pavement at the front of the property was observed. This damaged was noted in the EQC land damage team, therefore it is assessed to have been made worse by the 2011 earthquakes.

### 4.4. Shallow Investigations

Subsurface testing completed on 29/01/2025 comprised:

- Two hand augers (HA) to a maximum depth of 2.5m below ground level (BGL) with engineering geological logging of materials recovered, and;
- Two Scala penetrometer tests to a maximum depth of 2.6m BGL to assess soil bearing capacity.

### 4.5. Sub Surface Conditions

Inferred subsoil conditions from combined investigations:

- HA 01 is situated along the east elevation of 427 Armagh Street, in front of the garages. The soil profile consists of a 0.4m thick layer of topsoil over silt and sand to the full depth of investigations (2.5m BGL). The HA was discontinued at 2.5m BGL due difficult retrieval (vacuum pressure). Ground water was encountered at 1.7m below ground.
- SC 01 indicates that Ultimate Bearing Capacity (UBC) of 200kPa and 300kPa is consistently achieved from below the topsoil layer and at 1.1 m BGL respectively.
- HA 02 is located in the garden adjacent to the west elevation of 425 Armagh Street. The soil profile consists of a 0.5m thick layer of topsoil over varying quantities of interspersed silt with sand to the full depth of

# Technical Report

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investigations (2.5m BGL). The hand auger was discontinued at 2.5m BGL due to inferred gravels. Ground water was encountered at 2.2m below ground.

- SC 02 indicates that Ultimate Bearing Capacity (UBC) of 200kPa and 300kPa is consistently achieved from below the topsoil layer and at 1.1 m BGL respectively.

## 4.6. Ground Water Regime

The groundwater table was estimated based on results of HA investigations and data available on the New Zealand Geotechnical Database. Based upon information from the well logs reviewed, the water table in this region is indicated to exist at approximately 1.0m-2.5m below ground level and is subject to change as a result of seasonal variation.



# Technical Report

## 5. Conclusions & Recommendations

### 5.1. Assessment of Damage

Key findings of the engineering assessment are as follows:

- The subject property is part of a multi-unit building comprising two adjoining units, referred to as 425 and 427 Armagh Street. The focus of this report is on 427 Armagh Street. However, in accordance with industry guidance and best practices (i.e., Part E of the MBIE Guidance Document), due consideration has also been given to the adjoining unit at 425 Armagh Street, and the overall structure has been assessed holistically.
- Structural survey measurements, including levels and wall verticality, have been taken across floors, window frames, doorways, and ceilings, and have been analysed for indicators of structural damage. A total floor height variance of 64 mm has been recorded across the floors of 427 Armagh Street. The floors slope towards the north elevation and towards the heavyweight partition wall. Mortar cracking damage was noted along this wall in the post-earthquake scope, including damage to the adjacent wall lining, which indicates that the wall has settled to a degree during the CES.
- Mortar crack repairs have been undertaken along the eastern elevation of the dwelling, however cracks to the perimeter foundation have not been repaired.
- Moderate to severe liquefaction was observed around the property following the February 2011 event, including earthquake-related land damage at the front of the property, as noted by the EQC land team. This suggests there has likely been liquefaction that has caused some settlement of the foundation systems across both dwellings at 425 and 427 Armagh Street.
- The heavyweight partition wall has settled and caused the floors in both dwellings to slope inward toward the wall, as illustrated on the contour plan SK2. We also note the post-earthquake EQC land assessment photos dated September 2011, recorded undulations in the pavement alongside the eastern elevation and damage to the eastern wall where the foundations have settled.
- It is probable that the foundations have settled to an extent prior to the CES. We would expect to see greater levels of structural damage to the internal linings and external cladding if all of the settlement measured across the footprint was caused by the 2011 earthquakes.
- Based on a review of third-party documents, site observations, structural survey measurements, and discussions with the owners and tenants, we believe the dwelling has experienced a material change due to settlement damage caused by the Canterbury earthquake sequence. To address this settlement, a partial foundation lift is considered necessary to repair the effects of the Canterbury earthquakes.
- Proposed repair works are listed in Section 5.2 below.

#### Garages:

- We note the settlement across the adjacent garage structures is deemed to have existed prior to the CES and no damage was recorded to the structure following the earthquakes to suggest the settlement has been materially worsened by the earthquakes.
- No repairs are required for the external garage.

### 5.2. Repair of Damage – Refer to Appendix C – SK5 Conceptual Repair Plan

The following repairs are proposed to remediate earthquake managed repairs and address outstanding earthquake related damage to 427 Armagh Street (half of the multi-unit building.) The following repairs to 427 Armagh Street should be carried out in conjunction with the repairs for 425 Armagh Street due to the shared partition wall, external brick veneer, and roof structure.

- Relevel the perimeter foundation wall and intertenancy wall footing using portable jacks in accordance with Lifting Option 1, Appendix A1.1 of the MBIE guidance document. Refer to SK5 with proposed lifting

# Technical Report

point locations at 1.5m centres. Depth to bearing for the underpin dunnage is to be 800mm below ground level. The dimension of the underpin pads is to be 600mm square.

- The internal floor area can be lifted by packing between the internal piles and the subfloor bearers to the required height. Install 12kN bearer end fixings above the piles that are to be packed. An estimated 36x internal piles will require packing in conjunction with foundation lift. Recommended lift heights are noted on SK5.
- Allow to remove the remainder of the defunct chimney down to ground level, similar to the works carried out in the neighbouring 425 Armagh Street.
- Given the extent of the proposed lift, we recommend that allowance be made for a suitably qualified geotechnical engineer to be engaged to carry out the geotechnical construction monitoring during the works and to confirm the bearing depth and size of the underpin excavations.
- Allow to grind out, clean, and fully fill internal perimeter foundation cracks. 7x perimeter foundation cracks along the north, west, and south perimeter walls.
- Repair outstanding damage to the roof tiles and roof framing after the lift.
- We also recommend the owners install additional timber struts to support underpurlins in the roof space to reduce the sag of the framing. This repair is to address deficiencies in the original construction as opposed to earthquake related damage.

## 5.3. Expected Consequential Damage

- Removal of adjacent concrete paving and vegetation around the perimeter of the building to facilitate releveling works.
- During the lift, some internal lining damage is expected to occur along with functionality issues of fixtures, which should be addressed accordingly following releveling work.
- Allow to remove the mass concrete slab in the porch and to allow access to underpin the foundation. Reconstruct the slab when the foundation releveling is completed.

## 5.4. Compliance

- It is our understanding that repair work at the property, as outlined above, may be categorised as building work requiring a building consent. It may be possible for this work to be performed as exempt building work under Schedule 1 (2) of the Building Act 2004, however this will be at the discretion of the local building consent authority.



# Technical Report

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## 6. Appended Documents

The following documents are appended to this report:

**Appendix A:** Relevant Site Photographs

**Appendix B:** Structural Survey Drawings

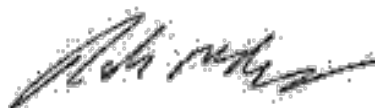
**Appendix C:** Conceptual Repair Plan

**Appendix D:** Shallow Geotechnical Investigations

**Appendix E:** Relevant Third-Party Documents

**Appendix F:** Cavity Critter Subfloor Report

**Inspected & Prepared By:**



JOHN MCCLOSKEY

**Senior Structural Engineer**

BEng (Hons) Engineering, CPEng 1024064,  
CENG MIEI

# Technical Report

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## 7. Limitations

This report and documentation have been prepared by NZCSE at the request of its client and are exclusively for the client's use. No responsibility or liability to any third party is accepted by NZCSE for any loss or damage whatsoever arising out of the use of or reliance on this report by any third party.

No structural analysis has been carried out to assess the strength of the buildings and/or structures or to determine whether or not they comply with the current and/or any previous Building Code. NZCSE has not made any assessment of structural stability or building safety in connection with any future earthquake events.

This report and documentation are limited by the restricted ability to carry out inspections. This report and documentation does not comment on structural damage that is not reasonably noted through visual inspection, including any structural damage that is in inaccessible places or has occurred latently.

NZCSE has assumed that any and all documentation and information provided by the client and/or any third party relating to the buildings and/or structures is accurate and reliable. This documentation and information includes but is not limited to Council records, plans, details, and geotechnical information. No responsibility or liability is accepted by NZCSE for any loss or damage whatsoever stemming from inaccuracies in any and all documentation and information provided by the client and/or any third party.

As outlined in the scope of work, NZCSE has been engaged by the client to carry out an assessment and provide conclusions and recommendations relating to the observed structural damage to the relevant buildings and/or structures. Although some observations and comments may relate to non-structural elements, these comments should be read only in the context of adding completeness to this process. Recommendations provided by NZCSE are limited to those that relate specifically to the New Zealand Building Code Clause 'B1 Structure'. It is recommended that all non-structural elements that are governed by the New Zealand Building Code and Acceptable Solutions/Verification Methods, including but not limited to geotechnical considerations, 'B2 Durability' and 'E2 External Moisture', are to have direct involvement from the appropriate consultants, professionals and industry experts. No responsibility or liability is accepted by NZCSE for any loss or damage whatsoever stemming from non-structural related issues.

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





# Appendix A

## Relevant Site Photographs



Photo Set 1: Property Layout and Local Features



Photo 1A – Screenshot of latest aerial imagery from canterburymaps.govt.nz showing property layout and simplified cardinal directions



Photo 1B – 1940-1944 earliest available aerial imagery of the property, showing the original property (now 3 titles).



Photo 1C – 1945-1949 aerial imagery shows the new dwelling and original garage.



Photo 1D – 1960-1964 aerial imagery shows the carport against the garage.



Photo 1E – 1980-1984 aerial imagery shows the second garage (carport permitted to be enclosed in 1978).





Photo 1F – 2010-2014 first (clear) aerial imagery of the conservatory at 427 Armagh Street.



Photo 1G – 2015-2019 aerial imagery shows the chimney has been removed down to roof level.

Photo Set 2: External Elevations.



Photo 2A – South elevation (street facing).



Photo 2B – East elevation.



Photo 2C – Northeast elevation.



**Photo Set 3: Foundations.**

Photo 3A – 350mm Perimeter Foundation embedment depth along the west elevation.



Photo 3B – Foundation crack at vent along the east elevation.



Photo 3C – Plaster and foundation cracks along the north elevation



Photo 3D – No reinforcing was detected in the perimeter foundation wall.



Photo 3E – Separation of the concrete beam above the cladding panel and cracking through the top brick. New mortar suggest recent cladding settlement cracks repairs along the east elevation.



Photo 3F – Separation at the corner joints of the precast concrete beam above the veneer panels at the exterior north east corner of the kitchen.



**Photo Set 4: Floors & Fixtures.**

Photo 4A –Kitchen floors , ceilings and built in benchtops all fall to the north.



Photo 4B Kitchen bench along the eastern wall falling to the north by 9mm/m , following the floor and ceilings.



Photo 4C – Porch area used as storage.



Photo 4D –Minor separation between the timber trim and the concrete lintel above the porch.

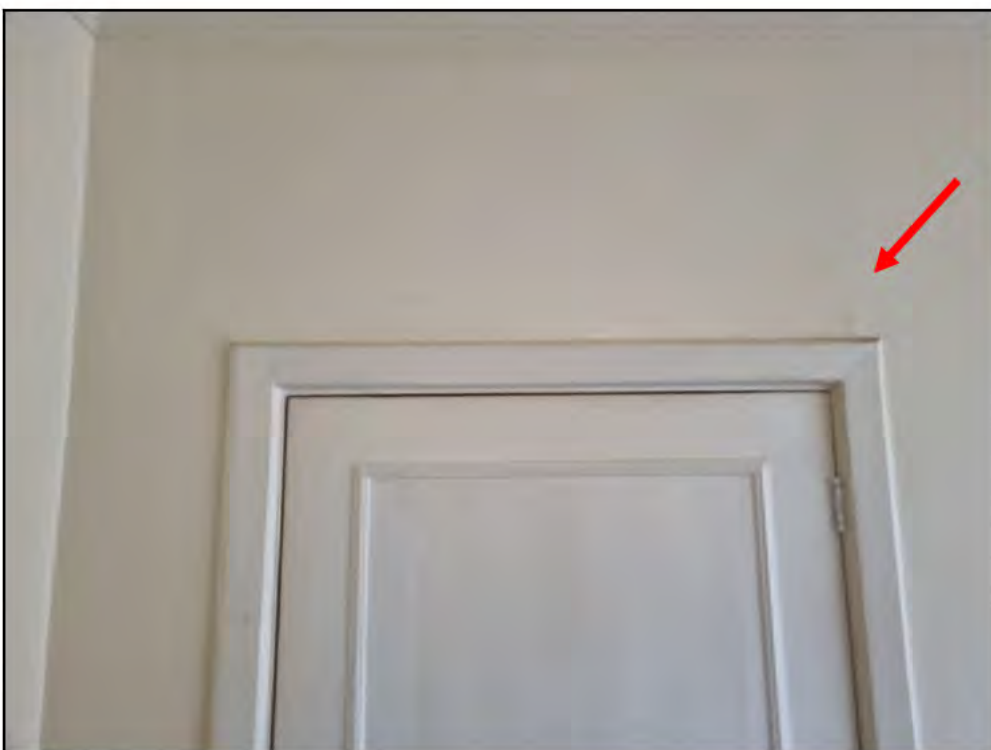


Photo 4E –Minor wall lining damage above the lounge door indication of foundation settlement and racking of the internal wall framing.



**Photo Set 6: Roof Observations.**

Photo 6A – Unrestrained Concrete water tank in the roof space .



Photo 6B – Partition wall is partly constructed from poured in situ concrete above the ceiling line. Concrete pour joins ( cold joins) can be seen.



Photo 6C – Roof plane sagging towards the middle due to inadequate roof framing underpurlin support .



Photo 6D – Newer masonry block wall ( Partition wall extension) above the Laundry extending to the roof tiles constructed circa 1987.

**Photo Set 7: Garage Observations**

Photo 7A – South elevation of adjoining garages.



Photo 7B – Garage was full of storage at the time of the assessment. Door head was measured to be level over sloping concrete slab.





Photo 7C –Garage east elevation . Cladding is undamaged,. No stormwater guttering has been fitted.



Photo 7D – North Elevation. Cladding sheet need to be refixed.

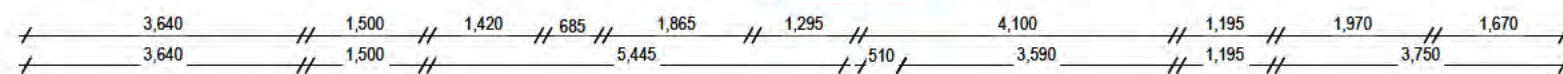
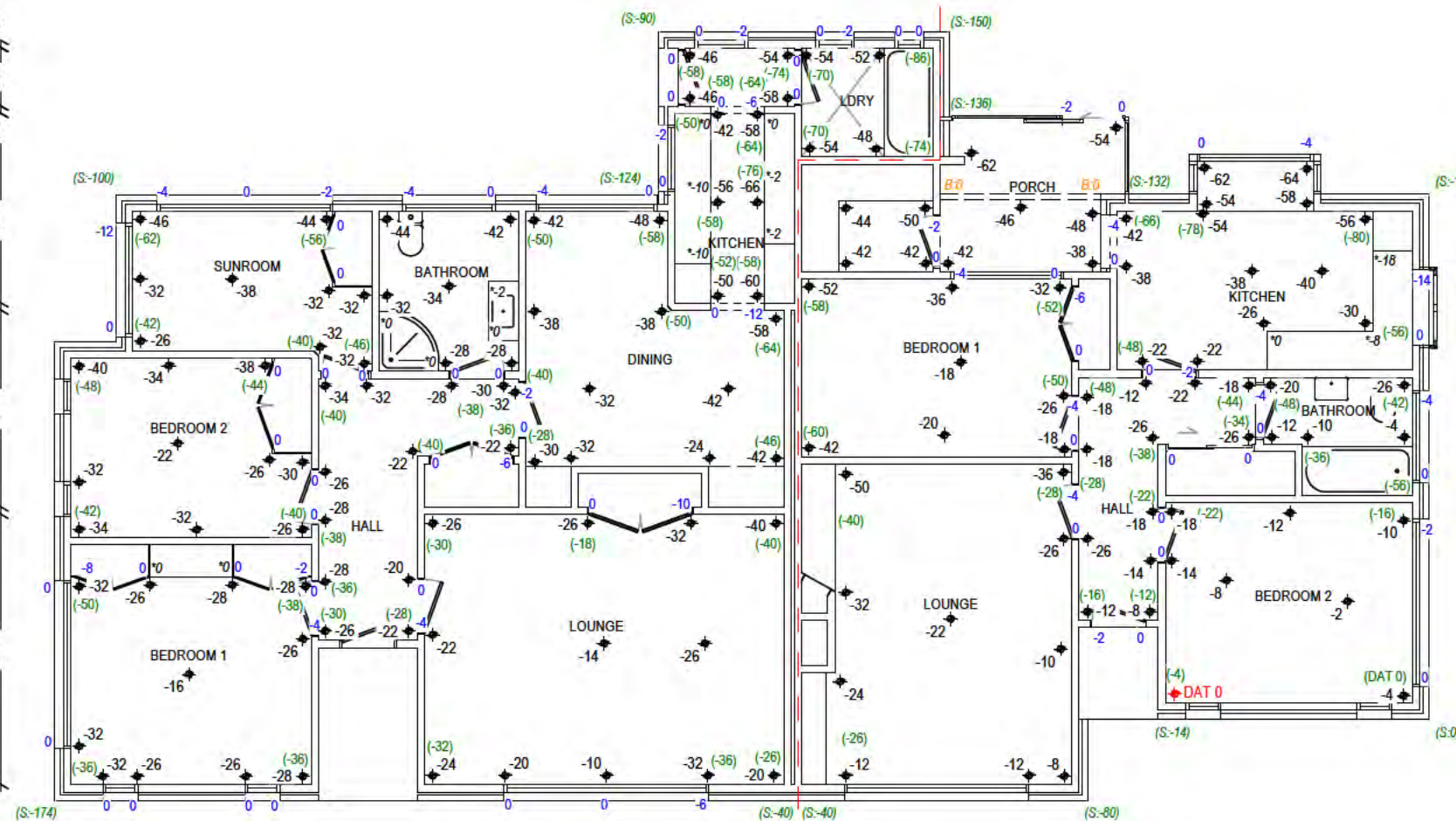
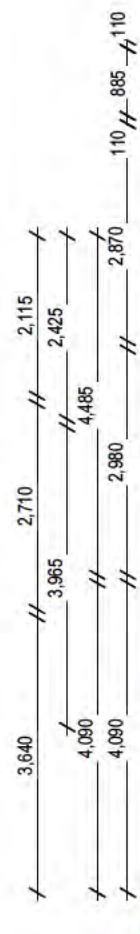


# Appendix B

## Structural Survey Drawings

SHEET	DESCRIPTION	SCALE	VERSION
SK1	FLOOR LEVELS	1:100 / A3	1
SK2	CONTOURS PLAN	1:100 / A3	1
SK3	VERTICALITIES PLAN	1:100 / A3	1
SK4	SUBFLOOR PLAN	1:100 / A3	1





4,850	2,700	1,625	1,550
3,670	1,385	2,290	
3,030	1,790	2,415	



**KEY:**

- NOTES:

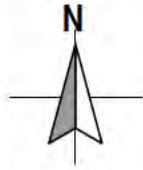
- MEASUREMENTS SHOWN ARE IN mm UNLESS STATED OTHERWISE
- LEVELS RECORDED WITH A ZIP LEVEL PRO-2000
- PLANS TO BE PRINTED IN FULL COLOUR



ADDRESS:  
425 & 427 ARMAGH STREET, LINWOOD,  
CHRISTCHURCH 8011

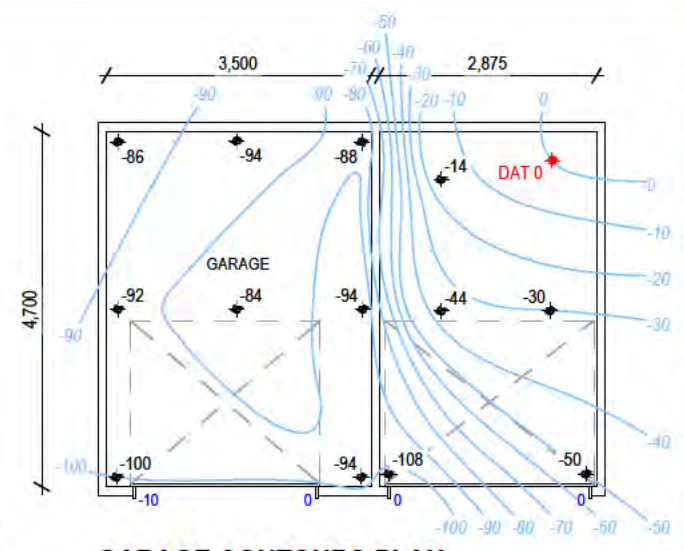
DATE	26/02/2025
DRAWING NO.	SK1



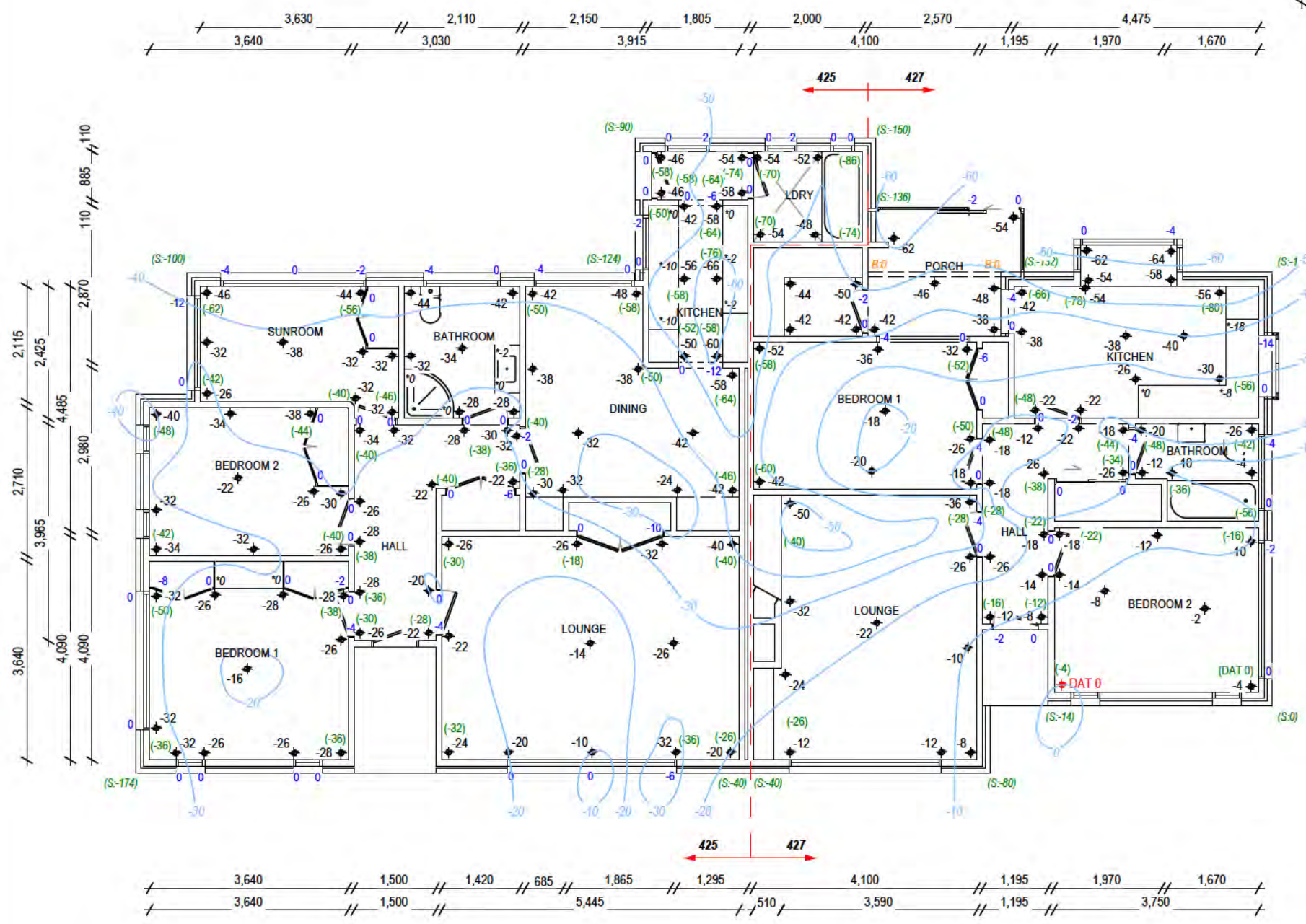


**LOCATION PLAN**  
SCALE: NTS

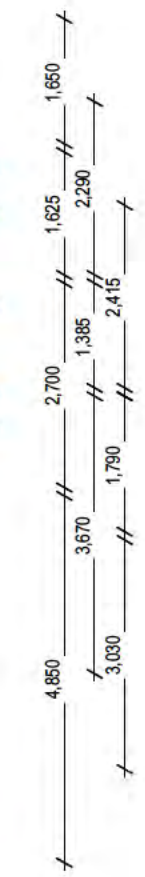
- KEY:**
- 0 FLOOR LEVELS (ADJUSTMENTS FOR FLOOR COVERINGS HAVE BEEN MADE)
  - (-X) CEILING LEVELS
  - (S-X) SOFFIT LEVELS
  - B-X LEVEL TO BASE OF BEAM
  - X LEVELS TAKEN AT DOOR HEADS AND WINDOW SILLS
  - *X LEVEL TAKEN TO TOP OF UNIT
- NOTES:**
- MEASUREMENTS SHOWN ARE IN mm UNLESS STATED OTHERWISE
  - LEVELS RECORDED WITH A ZIP LEVEL PRO-2000
  - PLANS TO BE PRINTED IN FULL COLOUR



**GARAGE CONTOURS PLAN**  
SCALE 1:100

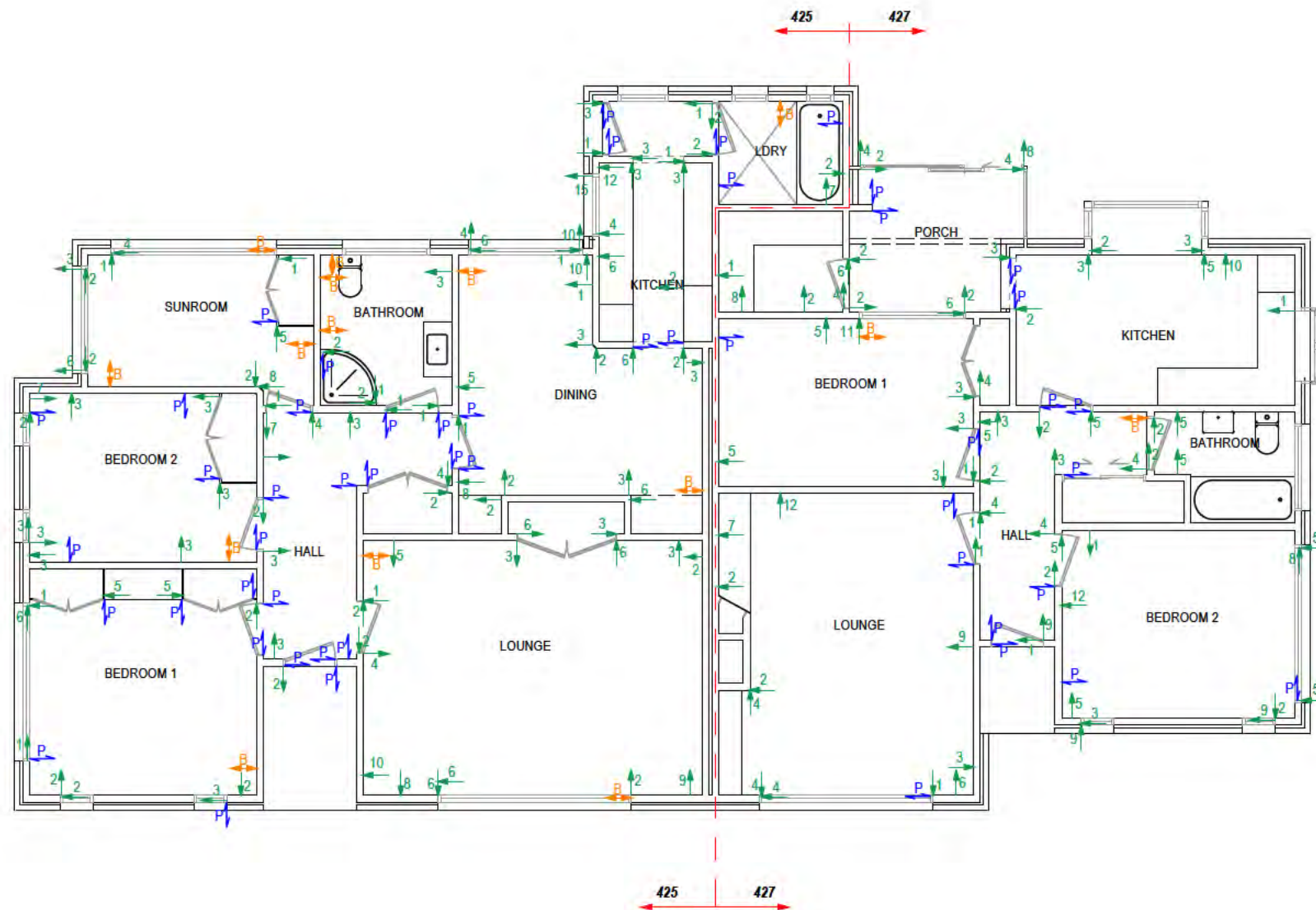
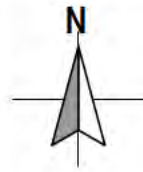


**DWELLING CONTOURS PLAN**  
SCALE 1:100

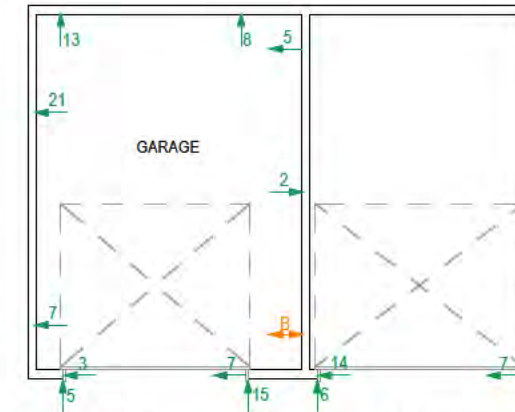


SHEET TITLE CONTOURS PLAN	SCALE @ A3 1:100
ADDRESS: 425 & 427 ARMAGH STREET, LINWOOD, CHRISTCHURCH 8011	DATE 26/02/2025 DRAWING NO. SK2





**DWELLING VERTICALITIES PLAN**  
SCALE 1:100



**GARAGE VERTICALITIES PLAN**  
SCALE 1:100



**LOCATION PLAN**

SCALE: NTS



**KEY:**

- DISPLACEMENT AND DIRECTION (mm)
- PLUMB
- BOWED

**NOTES:**

- MEASUREMENTS SHOWN ARE IN mm UNLESS STATED OTHERWISE
- LEVELS RECORDED WITH A BOSCH DNM 120L DIGITAL LEVEL
- PLANS TO BE PRINTED IN FULL COLOUR



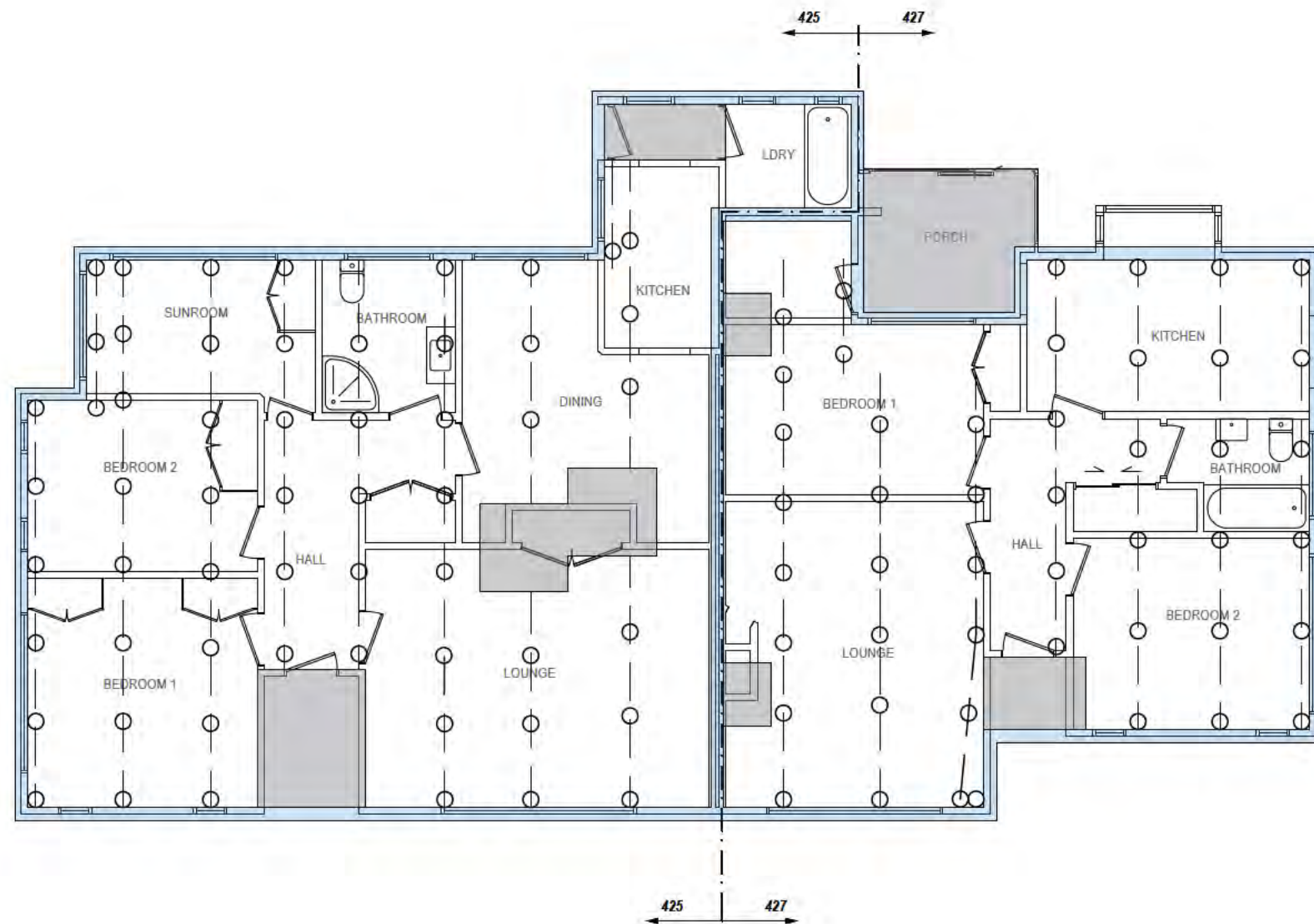
SHEET TITLE  
VERTICALITIES PLAN

ADDRESS:  
425 & 427 ARMAGH STREET, LINWOOD,  
CHRISTCHURCH 8011

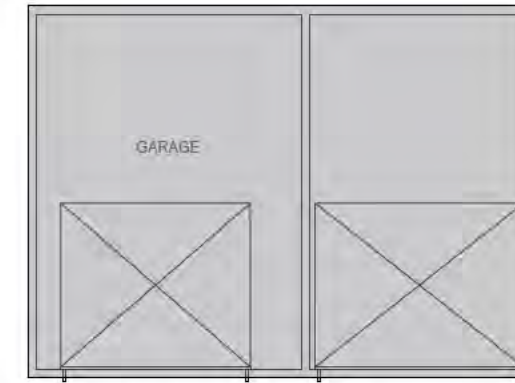
SCALE @ A3  
1:100

DATE  
26/02/2025

DRAWING NO.  
SK3



**DWELLING FOUNDATION PLAN**  
SCALE 1:100



**GARAGE FOUNDATION PLAN**  
SCALE 1:100



**LOCATION PLAN**  
SCALE: NTS



**KEY:**

- CONCRETE PERIMETER WALL FOUNDATION
- CONCRETE SLAB
- BEARER LINE
- PRECAST CONCRETE PILE



SHEET TITLE  
FOUNDATION PLAN

ADDRESS:  
425 & 427 ARMAGH STREET, LINWOOD,  
CHRISTCHURCH 8011

SCALE @ A3  
1:100

DATE  
26/02/2025

DRAWING NO.  
SK4





# Appendix C

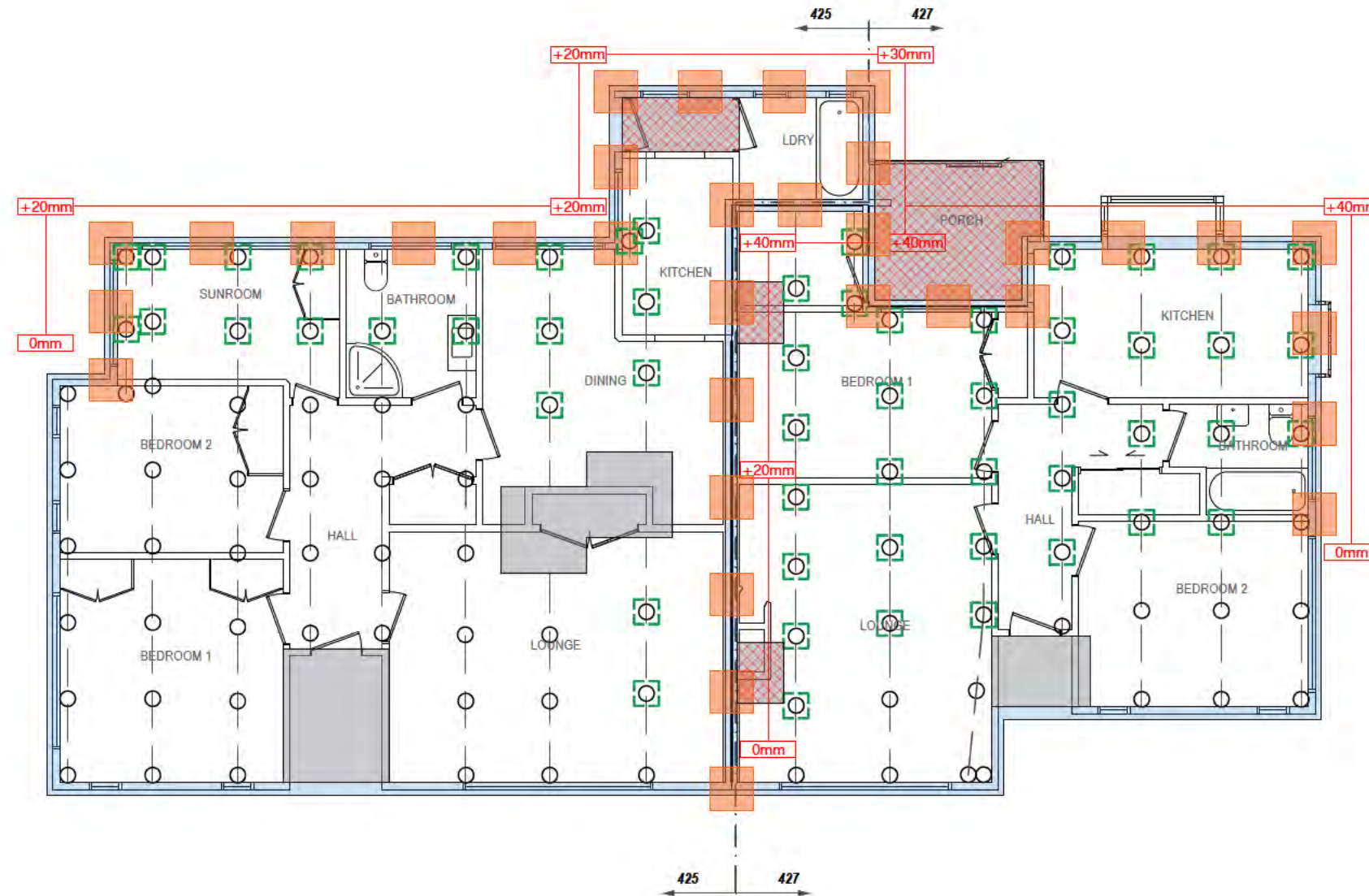
## Conceptual Repair Plan

**CONCEPTUAL REPAIRS:**

-  UNDERPIN THE PERIMETER FOUNDATION BY  $+XXmm$  OFF CONCRETE PADS @ 1.5 CENTERS MAX. UNDERPINS TO BE 800mm DEEP AND 600mm SQUARE SUBJECT TO GEOTECHNICAL ENGINEERING APPROVAL AT THE DESIGN STAGE.
-  RELEVEL THE INTERNAL SUSPENDED TIMBER FLOORS BY PACKING BETWEEN THE PILES & BEARERS.
-  REMOVE SLABS. REPLACE THE PORCH SLAB IN 427 ARMAGH STREET AFTER THE FOUNDATION LIFT IS COMPLETE.



**LOCATION PLAN**  
SCALE: NTS

**KEY:**

-  CONCRETE PERIMETER WALL FOUNDATION
-  CONCRETE SLAB
-  BEARER LINE
-  PRECAST CONCRETE PILE

**CONCEPTUAL REPAIR PLAN**  
SCALE 1:100



SHEET TITLE  
CONCEPTUAL REPAIR PLAN

ADDRESS:  
425 & 427 ARMAGH STREET, LINWOOD,  
CHRISTCHURCH 8011

SCALE @ A3  
1:100

DATE  
26/02/2025

DRAWING NO.  
SK5





# Appendix D

## Shallow Geotechnical Investigations



Test locations are approximate (scaled and aligned using aerial imagery)  
Aerial imagery obtained from [Canterburymaps.govt.nz](http://Canterburymaps.govt.nz)



- - - MBIE (2012): 200kPa geotechnical Ultimate Bearing Capacity
- - - >300kPa UBC (indicative bearing capacity is based on MJ Stockwell's "Determination of Allowable Bearing Capacity Under Small Structures" and converted to an uncorrected Ultimate Bearing Capacity (UBC))



## NZ CIVIL &amp; STRUCTURAL ENGINEERS LTD



## SHALLOW GEOTECHNICAL INVESTIGATIONS

NZCSE.COM

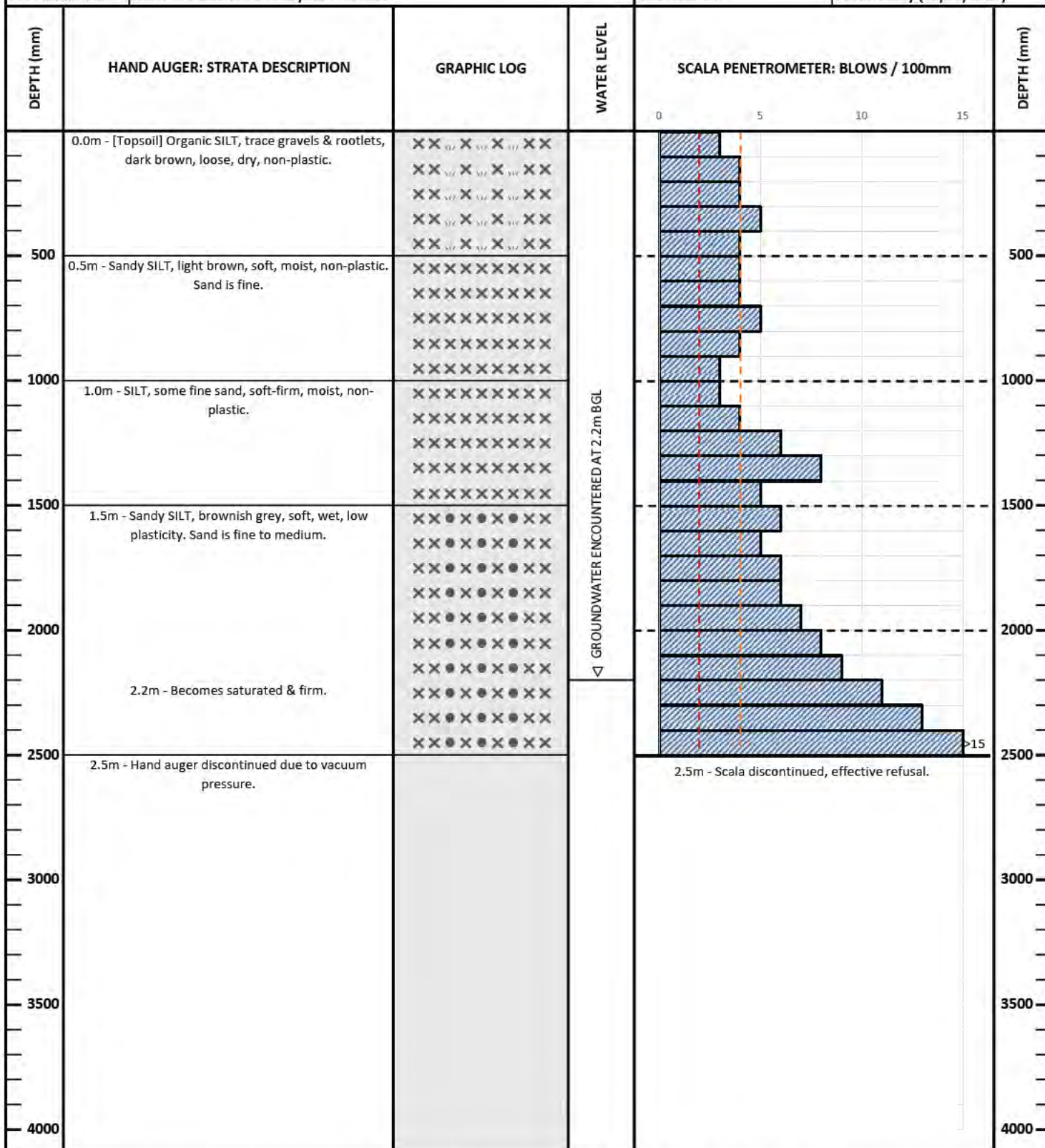
10/31-33 Tyne Street, Addington Christchurch 8011

admin@nzcse.com

COMBINED HAND AUGER AND SCALA PENETROMETER

HA/SC 02

PROJECT:	425 & 427 Armagh Street, Linwood, Christchurch 8011	TESTED / SUPERVISED BY:	J. Gill & M.Christie
CLIENT:	Natural Hazards Commission Toka Tū Ake	DATE:	29/01/2025
TEST LOCATION:	Refer to Attached Site Layout Plan S2.0	CHECKED BY:	J McCloskey (03/03/2025)



Soil classification has been carried out in line with 'Field Descriptions of Soils and Rock' by NZ Geotechnical Society Dec. 2005. Scala penetrometer testing has been performed in accordance with NZS4402 Test 6.5.2:1988 - Determination of the Penetration Resistance of a Soil. Shallow investigations give an indication of the ground condition at the location of the tests only. While they are representative of the conditions at the site, they do not identify variations in the ground away from the test location

- MBIE (2012): 200kPa geotechnical Ultimate Bearing Capacity
- - - >300kPa UBC (indicative bearing capacity is based on MJ Stockwell's "Determination of Allowable Bearing Capacity Under Small Structures" and converted to an uncorrected Ultimate Bearing Capacity (UBC))





## Appendix E

### Relevant Third-Party Documents

#### Contents:

	DOCUMENT TITLE	SOURCE	DATE
1.	Relevant Property File Extracts	Christchurch City Council	Various
2.	Underfloor Inspection	Cavity Critter	20/02/2025



# Appendix E

Christchurch City Council Property File Extracts



## CITY OF CHRISTCHURCH

CITY ENGINEER'S DEPARTMENT

P.O. BOX 237, CHRISTCHURCH, NEW ZEALAND

Mr Bergh,  
425 Armagh Street,  
CHRISTCHURCH



8 September 1977

re Building Application No. 702 BU/1/2

B7/7

Mr O'Malley

Dear Sir/Madam, your application for permission to

enclose carport to form garage at 425 Armagh Street

has now been approved. Before work is commenced the undermentioned fees must be paid and a building permit uplifted from this office.

Vehicle Crossing .....	\$
Builders Water Supply .....	
Water Connection Charge .....	
Building Permit Fee .....	3.00
Building Research Levy .....	
Street Damage Deposit .....	
	<u>3.00</u>

The Building Permit Application is approved subject to the following conditions:

1. The stormwater being connected to the existing disposal system and piped to the street side channel.

If the permit is not uplifted within three months of this date the application will be cancelled and the plans disposed of.

Yours faithfully

for Deputy General Manager and City Engineer

c.c. Mr Hart,  
425 Armagh Street,  
CHRISTCHURCH

LIN 3

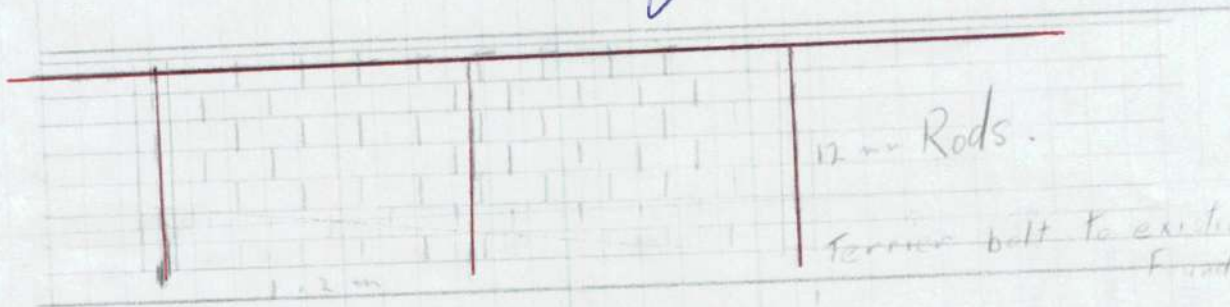
425 ARMAGH ST  
ENCLOSE CARPORT

*[Signature]*

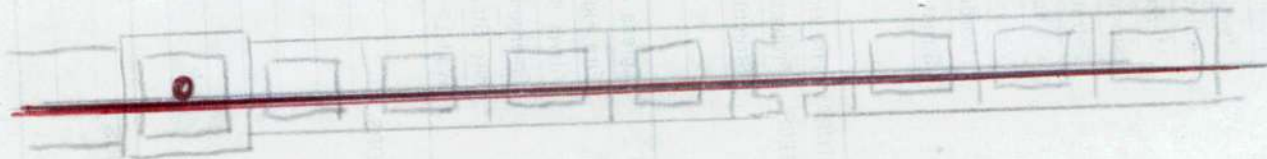
LIN

77-1580





2 4 m



BUILDING INSPECTORS	Fire Zone and Resistance		
	Siting (By laws)		
	Light and Ventilation		
	Room Sizes and Stud Ht.		
	Heating and Storage		
	Toilet and Laundry Accommod.		
	Mezzanine Floors		
	Storm Water and Section Levels		
	Entrance Levels		
	Projections over Street		
	Verandahs		
	Hoardings		
	Street Numbers		
STRUCTURAL ENGINEERS	Fire Resistance Requ.		
	Projections over Street		
	Structural Stability		
EGRESS OFFICER	Egress and Exit Signs		
	Fire Fighting Equipment		
	Alarm Systems		
	Emergency Lighting		
	Fire Stops		
HEALTH INSPECTORS	Wall Linings		
DANGEROUS GOODS INSPECTORS			
WATER INSPECTOR			



#25 Armagh St

12 mm Rod

12 mm Rod 1-2

Shamrock Road

Site of Proposed Block fence  
to be built on existing concrete wall.



Fence 6" Block.  
8" Block Columns  
7 Courses High  
Tensar Bolt 1/2" x 12"  
Top Courses.  
bond beam with  
1/2" rod concrete filled

Armagh Street

CCC 702.

3/48/33

Mr M. Hart.

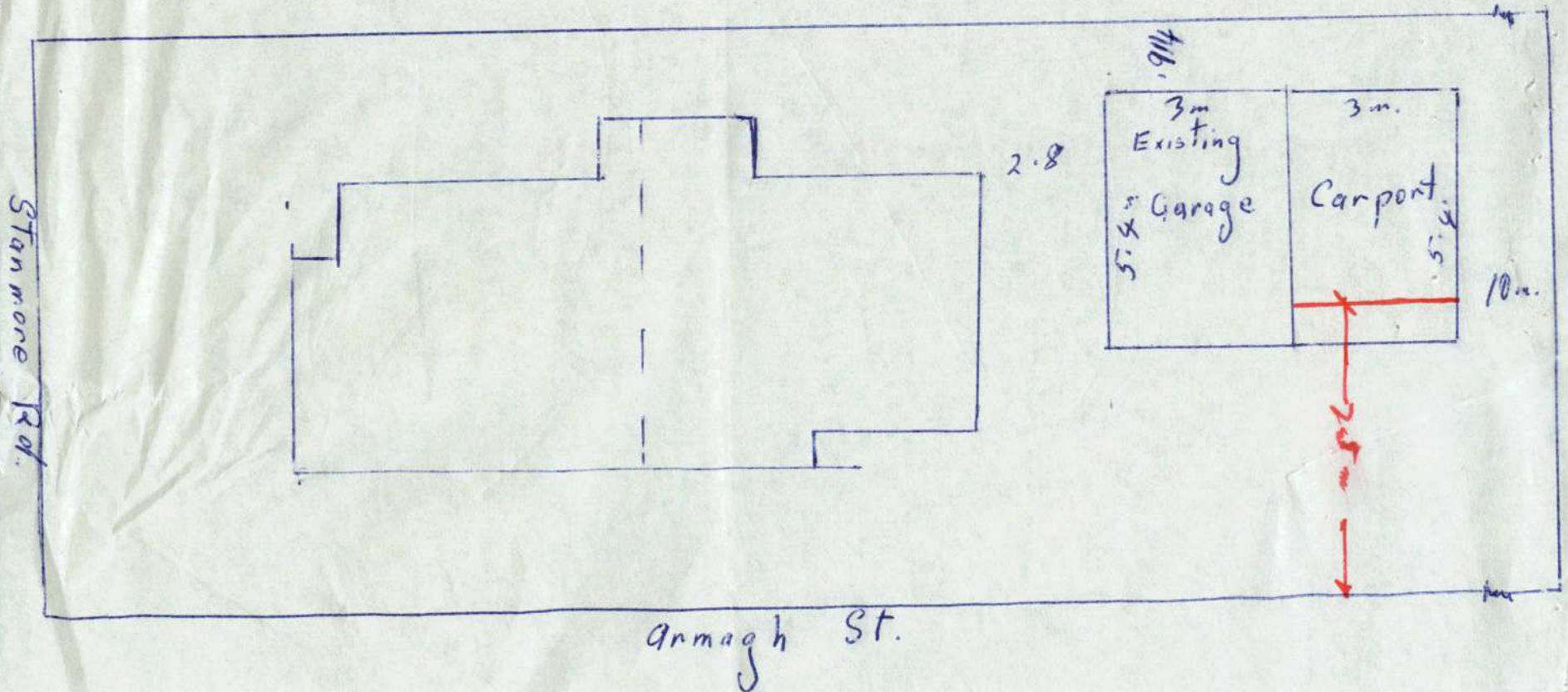
425 Armagh St.

Enclose existing report as  
garage.

Sewer not involved on this plan.

CHRISTCHURCH	
PLAN No. <u>13</u>	
LETTER REF. _____	
J.H.S.	<u>16</u>
INSP.	<u>3/5/77</u>
DATE _____	
DRAINAGE BOARD	





LIN-77-1580



Details of Carport

425 Armagh St.

100 x 50  
4 x 2 Plates125 x 50  
5 x 2 Rafters75 x 50  
3 x 2 Purlins150 x 50  
6 x 2 Trimmer through front opening

Studs Setting 400 - Dwangs at 600.

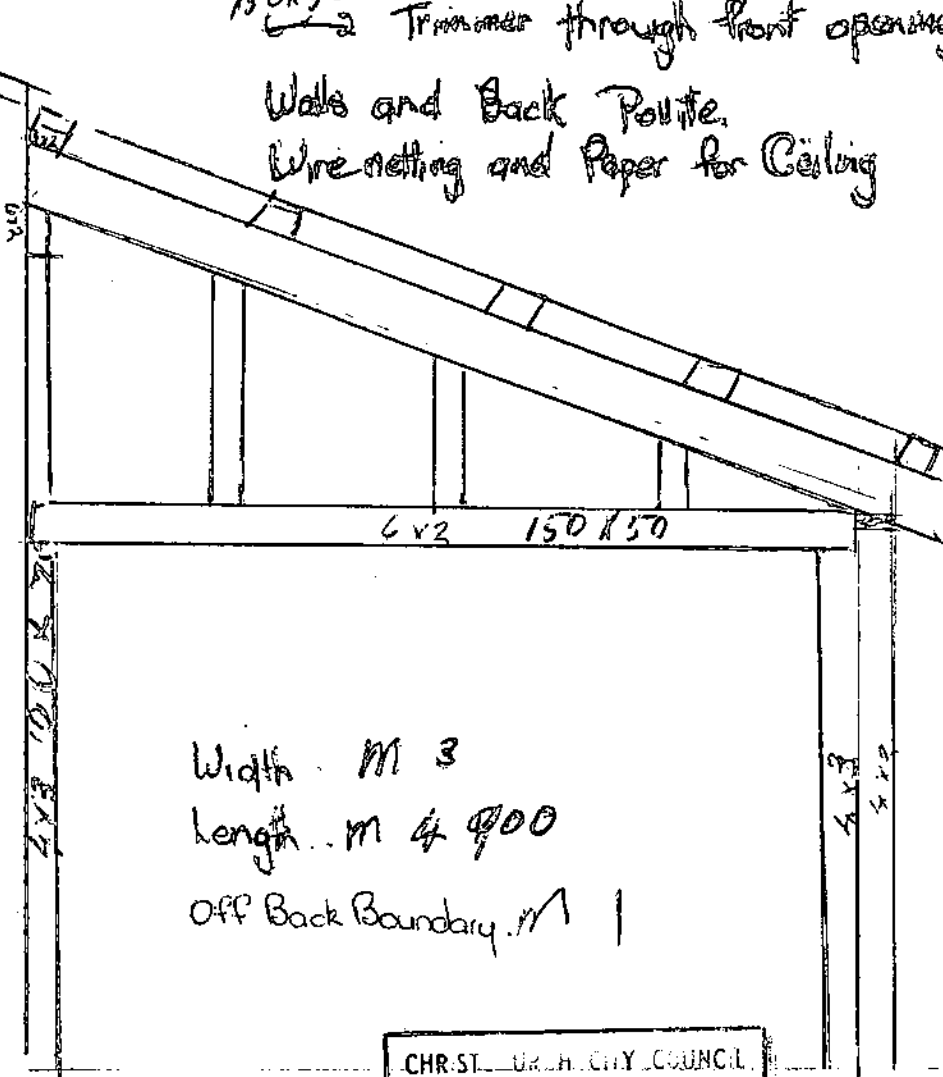
Settings 750.

Setting 750.

Walls and Back Poutie.

Wire netting and Paper for Ceiling

Existing Garage..



CHRISTCHURCH CITY COUNCIL

Approved Subject to the By-Laws

8 SEP 1977

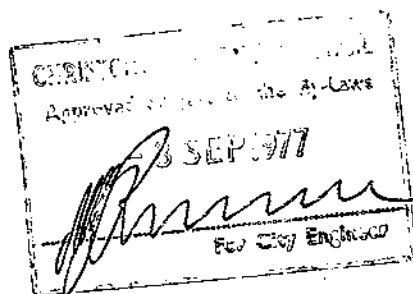
For City Engineer

S P E C I F I C A T I O N

FOR Garage AT 1425 Arroyo St.  
 OWNER M. B. Hart  
 FOUNDATIONS Concrete

CLASS OF TIMBERSPACING

Sleepers	<u>/</u>	
Floor Joists	<u>/</u>	
Flooring	<u>Concrete</u>	
Plates	<u>4X2</u>	
Studs	<u>4X2</u>	<u>18"</u>
Bracings	<u>4X2</u>	<u>2 per Wall</u>
Rafters	<u>4X2</u>	<u>3 ft</u>
Purlins	<u>4X2</u>	<u>2 ft</u>
Wall Covering	<u>Plite</u>	
Roof Covering	<u>Iron</u>	





DEPT.	APPLICATION NO.	PERMIT NO.	Initial
TOWN PLANNING	Zoning	R/2.	
	Siting (ordinances)	Dir Cont Bldg. Check dwelling	
	Coverage	or flat	
	Density		
	Height		
	Outbuildings (height area)		
	Signs		
SURVEYOR	Building Restrictions		
	C.D.B. Widening		
	C.D.B. Clearance		
	Cash in lieu of Reserve		
	D.P. or Title Amalgamation		
	Unit Title		
TRAFFIC ENGINEERS	Access		
	Off Street Loading		
	Off Street Parking		
	Turning Space		
	Motorway		
	Street Works		
STREET- WORKS	Vehicle Barriers		
	Sealing of Areas		
	Location of Gully Traps etc.		
	Culverts and Accesses	existing 3-6 bay	
	Drainage		
BUILDING INSPECTORS	Fire Zone and Resistance		
	Siting (By laws)		
	Light and Ventilation		
	Room Sizes and Stud Ht.		
	Heating and Storage		
	Toilet and Laundry Accommod.		
	Mezzanine Floors		
	Storm Water and Section Levels		
	Entrance Levels		
	Projections over Street		
	Verandahs		
	Hoardings		
	Street Numbers		
	Insulation		
	Access for Handicapped		
Unit Title			
STRUCTURAL ENGINEERS	Fire Resistance Requ.		
	Projections over Street		
	Structural Stability		
EGRESS OFFICER	Egress and Exit Signs		
	Fire Fighting Equipment		
	Alarm Systems		
	Emergency Lighting		
	Fire Stops		
	Wall Linings		
HEALTH INSPECTORS			
DESIGN OFFICE			
DANGEROUS GOODS INSPECTORS			
WATER INSPECTOR			

Specis coming.

14/5.  
OK by TE: HQ









# Appendix E

Cavity Critter Subfloor Report – 20/02/2025



# Cavity Critter

## Under floor Inspections

[www.underfloorinspections.co.nz](http://www.underfloorinspections.co.nz)

106 Raddens Road

Ohoka

RD2 Kaiapoi 7692

021 343156

[gideon@underfloorinspections.co.nz](mailto:gideon@underfloorinspections.co.nz)

**Report prepared for: NZCSE**

**Property address: 427 Armagh Street, Linwood**

**Date: 12 February 2025**

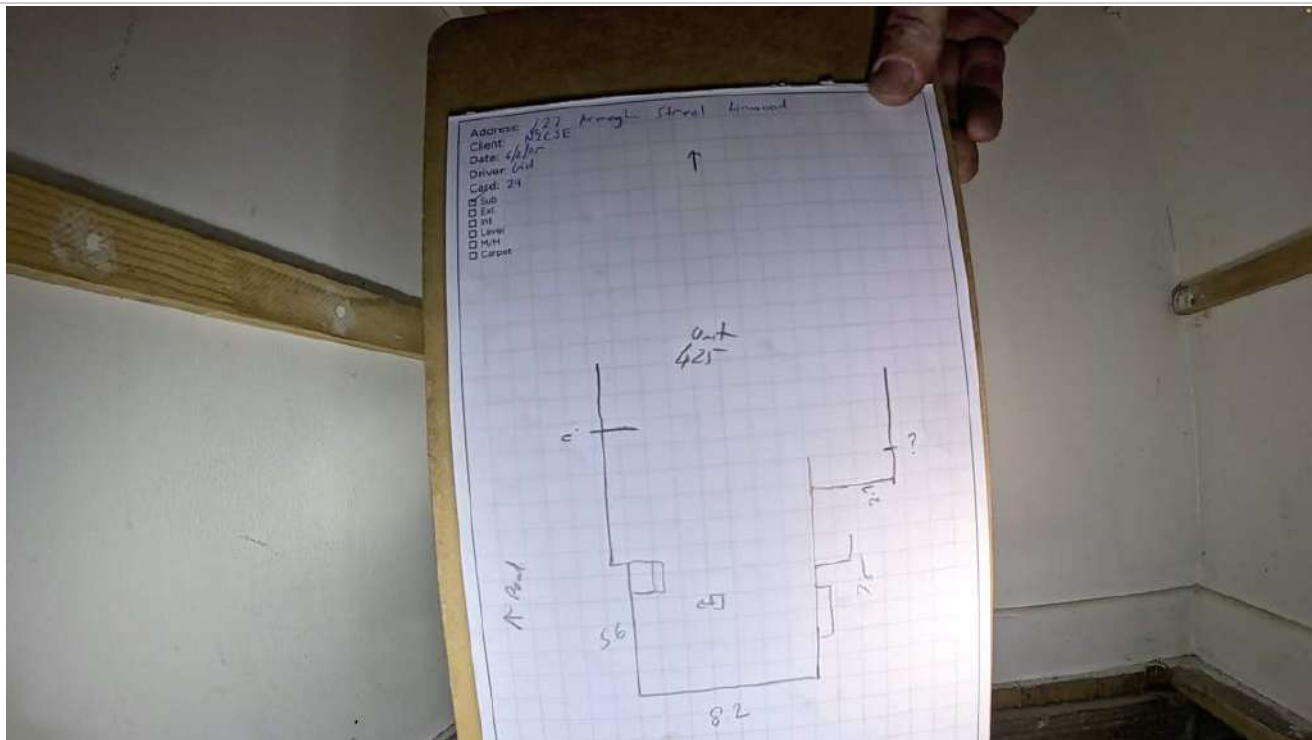
**Prepared by: Gideon Couper LBP Site 2 100074**

**Numbers corresponded to floor layout plan. Arrows represent which direction the photo was taken from.**



# Cavity Critter

1: Photo for legal purposes, showing who did the job and when.



2: The foundations are average quality type "B" foundations. There is a lack of fine sand and cement along with spider webs in some areas, making it hard to discern finer cracks, if they exist. There is also a high level of borer in some of the subfloor timber, as seen here.





3: View along party wall foundation.



4: View of foundation.



5: There are a lot of services and batts that have been pulled down that obstructed our access.



6: The home has precast concrete piles. These maybe concreted into the ground but the polythene obscures this. They are not connected to the bearers. None appear damaged or to have moved from their original positions although this does not preclude changes in height.





7: Precast concrete pile with no connection.



8: Precast concrete pile with no connection.



9: Precast concrete pile with no connection.



10: Precast concrete pile with no connection.





11: I think that there is a concrete base here, but I am not completely sure of the layout.



12: View of foundation.



13: Precast concrete pile with no connection. It is important to note that rodents have been using the insulation for nesting. The yellow marks represent their urine, and they have also caused many of the batts to fall down.



14: View of bearer meeting concrete base.





15: Precast concrete pile with no connection.



16: Precast concrete pile with no connection.



17: Precast concrete pile with no connection.



18: Precast concrete pile with no connection.





19: Precast concrete pile with no connection.



20: View of concrete base with pile to the left.



21: Precast concrete pile with no connection.



22: We couldn't get into this area.





23: View of piles.



24: View of foundation.



25: Precast concrete pile with no connection.



26: Precast concrete pile with no connection.





27: Precast concrete pile with no connection.



28: Precast concrete pile with no connection.





29: View of bearer meeting concrete base.



30: View of concrete base.





31: Precast concrete pile with no connection.



32: There are some non-compliant issues with the wiring seen in this home. They could also be a significant hazard to anybody operating under the floor. This relates specifically to unclipped wires. An electrical inspector could be consulted regarding this. The communication cables have also not been laid in a compliant manner and would easily be damaged by people accessing the subfloor.





33: Precast concrete pile with no connection. Here we see a heat pump drain. It is discharging to ground but should be vented to the outside.



34: View of concrete base.





35: Precast concrete pile with no connection.



36: View of ring foundation with concrete base to the right.



37: Precast concrete pile with no connection.



38: Precast concrete pile with no connection.





39: Precast concrete pile with no connection.



40: Precast concrete pile with no connection.



41: Precast concrete pile with no connection.



42: Precast concrete pile with no connection.





43: Precast concrete pile with no connection and the pile leans to the right.



44: The ground level appears to drop in this area.



45: Precast concrete pile with no connection and the pile leans to the right.



46: View along ring foundation with services.





47: Precast concrete pile with no connection.



48: Precast concrete pile with no connection.



49: Precast concrete pile with no connection.



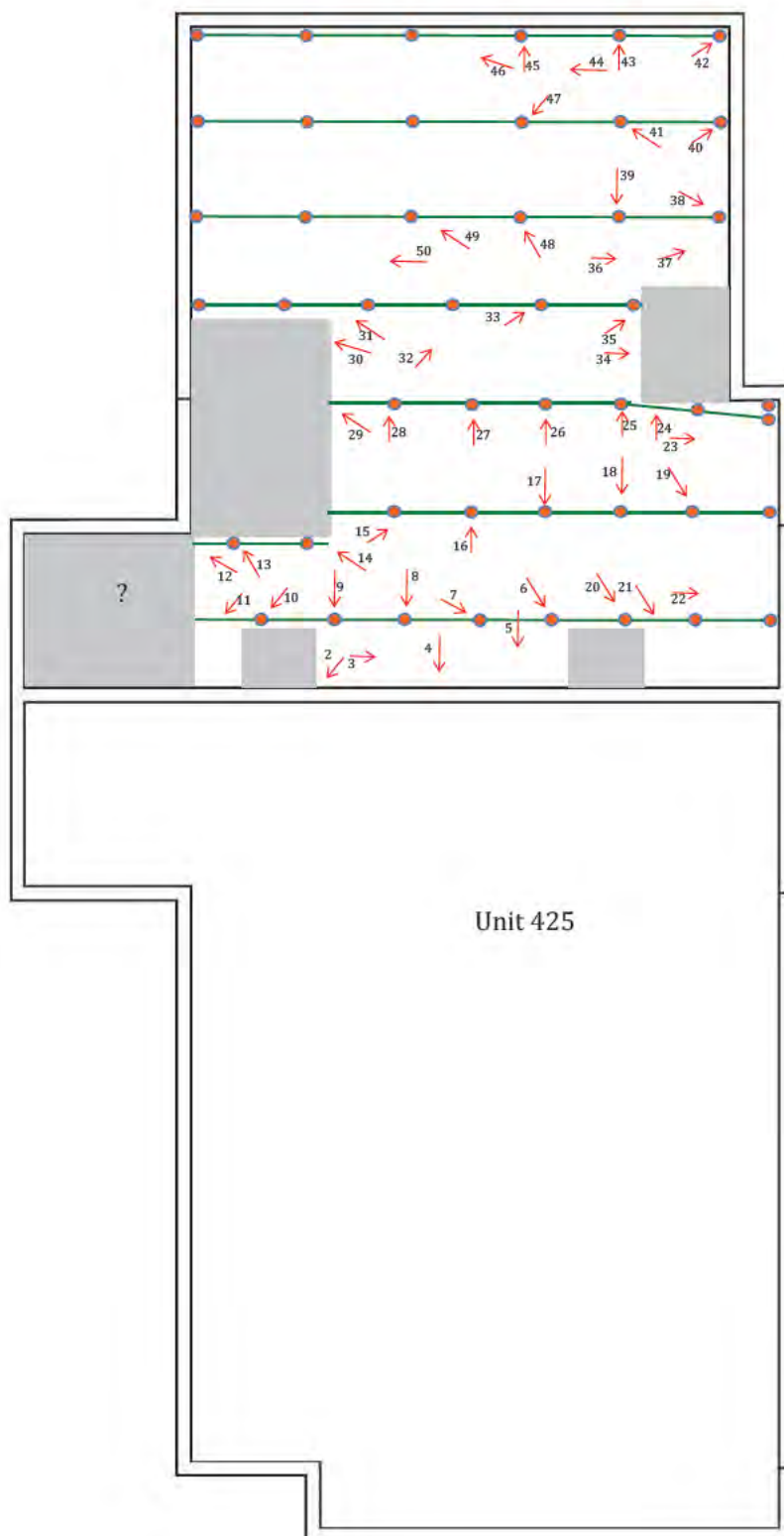
50: We were unable to proceed any further.





House floor plan

**Numbers corresponded to floor layout plan. Arrows represent which direction the photo was taken from. Plan is also supplied as a separate file to assist with reading of the report.**



Subfloor plan 427 Armagh Street, Linwood

This report has been prepared in accordance with and is subject to our document Cavity Critter – Terms Of Trade. Our Terms of Trade include information on the service provided, the limitations of the service, and a limitation of liability. This report must be read in conjunction with our Terms of Trade. A copy will be made available upon request

Some customers will request us to provide the report, either without any commentary or with a limited commentary (on the basis that those customers will be making their own assessment of the photographs provided). Our report needs to be read in conjunction not only with our Terms of Trade but also with the instructions (particular to each report) provided by the customer.

Under no circumstances will we accept liability for the contents of this report to anyone other than the original customer. If you are not the original customer for this report, then (unless you have our specific written permission) you may not rely on its contents for any purpose.





**Natural Hazards  
Commission**  
Toka Tū Ake



## **Canterbury Claims – Assessment Report**

### **Site Visit**

**Claim Number:** 2011/122912

**Property Address:** 427 Armagh Street,  
Linwood,  
Christchurch, 8011

**Customer:** A & G Calje Family Trust

**Date:** 02.12.2024

**Author:** M. Wright

**Title:** Technical Specialist

**Version:** V1



## Canterbury Claims – Assessment Report

**Property Address:** 427 Armagh Street, Linwood, Christchurch, 8011.

**Attendance on Site:** Suzanne A. (NHC SS), Esther Calje (Customer) & myself

**Site Visit Date:** 18 November 2024

**Reason for visit:** To review home regarding adequacy of previously settled EQ damage.

### Discussion with Customer:

A site visit to assess the dwelling was suggested after exterior damage was noted during a recent visit to discuss drainage damage with the Drainlayer.

### Property Description:

- A circa 1950's, ~100m² two-bedroom unit, one of two adjoining homes (*1) constructed with a conventional timber frame supporting a heavyweight tile roof and brick exterior wall cladding. The structure rests on a type B2 foundation (concrete ring foundation & piles). Interior wall & ceiling linings are plasterboard & flooring is T&G timber.

(*1 Note: the abutting flat, 425 Armagh Street is commonly referred to as the adjoining unit or flat throughout this report)

- The Land is classified as TC2.

### Claim History – Canterbury Earthquake Sequence:

- Two EQC Scope of Works (SOW) assessments were completed on the home, both being paper assessments. The first was undertaken on 14 February 2011, and the second on 23 May 2011 for the September 2010 and February 2011 events, respectively.

The following summarises the damage included in each SOW:

#### 14 February 2011:

**Interior:** Wall & ceiling linings cracks in the Kitchen/Dining room and Entry Hallway; wall lining cracks in the Lounge, Bedrooms 1 & 2, and the Bathroom; cornice cracking in the Lounge and Bedroom 1; tile grout cracking (walls) in the Kitchen & Bathroom and floor tiles in the Kitchen (1x cracked tile). The Bedroom 1 door was noted as binding and damage recorded in the Rear entry (conservatory) included 1.8m² of mortar cracking and soffit/fascia separation.

**Exterior:** 1.0m of mortar cracking was recorded on the East (E) elevation (plus the cracking recorded in the rear porch (above)) and plaster cracking in the front porch; 1.0m of ring



## Canterbury Claims – Assessment Report

foundation cracking; 15m of Roof ridge tile mortar cracking and; cracking to the Chimney top plaster.

**23 May 2011:** Additional damage to that recorded in the January SOW was as follows:

**Interior:** The ceiling was added in the Lounge & Bedrooms 1 & 2 and: walls added for painting in the Conservatory (Rear porch). The Bedroom 2 door was noted as binding.

**Exterior:** plaster cracking (top of walls) was included on the E elevation plus 1 broken brick; 0.4m of mortar cracks, plaster cracking (similar to E elevation) and 2 broken bricks on the N elevation, and stucco damage only on the S elevation; Roof ridge mortar cracking was reduced to 2m, but the chimney was recorded as structurally damaged above the roof.

Possible drainage damage was recorded as under review by the customer's plumber.

- In March 2011, the customer had the damaged chimney top removed, and roof secured under EQC's Emergency Works (EQ) provisions.
- The property changed hands in early 2012.
- The customer applied to opt out of the PMO repair program in early 2012. EQC's subsequent cash settlement of the claim was then based upon a customer provided Spence Consultants Ltd. quotation, paid on invoice.
- A bump in the wall in the neighbouring unit (425 Armagh Street) was raised with EQC in March 2015. This was assessed by EQC in January 2016 and concluded as not EQ-related.
- The property changed hands again in February 2018.

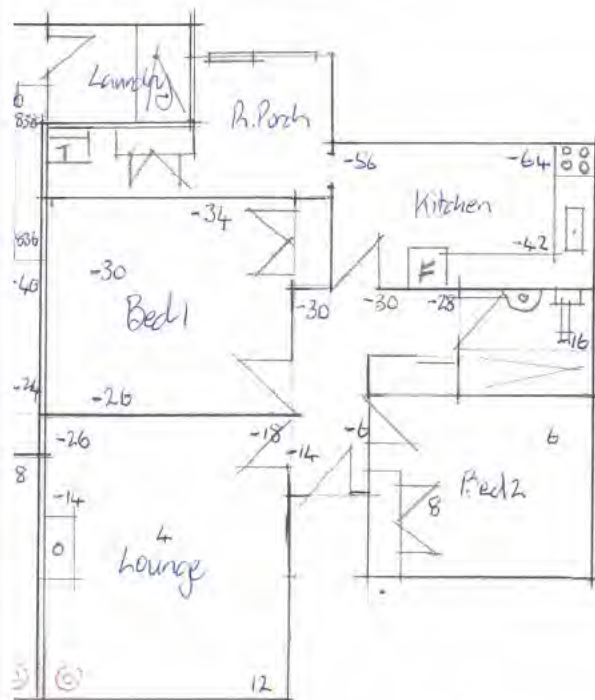


## Canterbury Claims – Assessment Report

**Observations:**

## Foundation Dislevelment

The level survey undertaken on site is reproduced in part below (the full plan is included in the Appendix).



The plan records global dislevelment of 76mm with the high point on the floor locating in the SE corner of the lounge and low point in the NE corner of the Kitchen.

This dislevelment exceeds MBIE guidance tolerance recommendations for releveling (50mm).

The building presents a general tilt to the North (N) and the floor also falls towards the party/fire wall between the two flats.

Similarly, localised slopes are shown to exceed MBIE's guidance tolerances in some areas, this issue presenting similarly in both flats. 425 Armagh Street additionally presents a similar global tilt albeit recording a lesser variance.

The following has been considered in relation to the dislevelment presenting:

- 1) Limited measures were taken on benchtops, windowsills etc. in the flat due to contents constraints, but measures taken were generally reflective of the corresponding floor slopes. Some measures in the neighbouring flat were shown to be contradictory, particularly the E Kitchen bench which measured a 2mm rise against a 14mm fall (opposing slope) on the floor beneath.

Such measures confirm a degree of as-built and/or age-related settlement has occurred over time. This would be expected given the heavy nature of the building's construction.

- 2) Generally, heavyweight homes of this era present a floor level pattern where levels taken close to the perimeter ring foundation are lower than those measured away from the exterior walls. This is often most noticeable in the centre of rooms and is known as crowning.

Crowning results from an imbalance in weight or load distribution to the foundations. Foundation elements beneath or near the load bearing walls



## Canterbury Claims – Assessment Report

	(ring foundation &amp; piles) typically settle to a greater degree than those lesser-supporting elements (such as the piles in the centre of rooms) over time.   Crowning is evident in this dwelling, but this historical pattern fails to explain the tilt measured. Soft or poor bearing ground beneath the ring foundation can facilitate localised settlement, but the tilt noted here appears too uniform to be related to this type of static settlement.   3) Review of EQC claim and other available documents, although the former records fundamentally cosmetic repairs only, revealed the following:       a) Neither EQC SOW notes floor dislevelment.     b) Two doors (Bedrooms 1 &amp; 2) were noted for easing.       The extent of door and window binding can be an indicator of the degree of EQ related floor dislevelment or structural racking resulting from EQ shaking. Typically, EQ related foundation damage is reflected in doors and windows binding.   Both doors in this instance lie in the direction of the main tilt on the structure. Similarly, a door eased in the adjoining flat also lies in this plane.       c) The fascia/frame separation noted in the conservatory may have resulted from structural movement.     d) Although showing no signs of repair by the customer's contractor, EQC's repair strategy for the ring crack damage is deficient in that it fails to include a crack repair component.     e) Similarly, discrepancies between the two EQC scopes (e.g., the Lm of ridge tile damage) do not appear to have been resolved prior to settlement.       4) No land damage was recorded in the EQC land assessment undertaken on 6 September 2011, but minor land damage (undulations) was settled for the neighbouring flat (425 Armagh Street).   No liquefaction was observed on this TC2 site, but it was recorded on land two plots North of the subject along Stanmore Road.   The property is in an area classified as prone to medium Liquefaction Vulnerability under EQ shaking.   <b>To conclude</b>, although the home presents some evidence of age &amp; build-related (pre-EQ) dislevelment, there is a lack of evidence to support the conclusion that
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## Canterbury Claims – Assessment Report

	the tilt measured is entirely pre-existing. Additionally, a similar pattern of dislevelment is noted to the adjoining flat.   It is thus recommended that the home be referred for an Engineering assessment to confirm the cause of the dislevelment measured - <i>Possible EQ</i>.   Given the adjoining nature of this unit &amp; 425 Armagh Street, the Engineering review &amp; assessment will need to consider the performance of the entire building.   (Note: Pending the outcome of the recommended Engineering assessment, the following remains outstanding:       1) Drainage     2) Ring crack remediation)
<b>Relevant Documents:</b>	• EQC 2010 SOW 14.02.2011     • EQC 2011 SOW 23.05.2011     • EQC Land Assessment 06.09.2011     • Spencer Consultants Ltd Quotation 16.01.12

### Summary:

- A level survey has been undertaken across the entire building (425 & 427 (the subject) Armagh Street.
- The EQC SOWs have been reviewed for completeness.

### Conclusions:

- Floor dislevelment across the home exceeds MBIE guidance tolerances both on a global and localised basis and as the cause of the global tilt is not clear, this dislevelment should be assessed by an appropriately qualified Engineer.
- Ring foundation crack repairs, although not undertaken by the customers contractor, were inadequately scoped by EQC and will thus require remediation.
- Drainage issues on the property remain unresolved at the time of this report.

### Next Action:



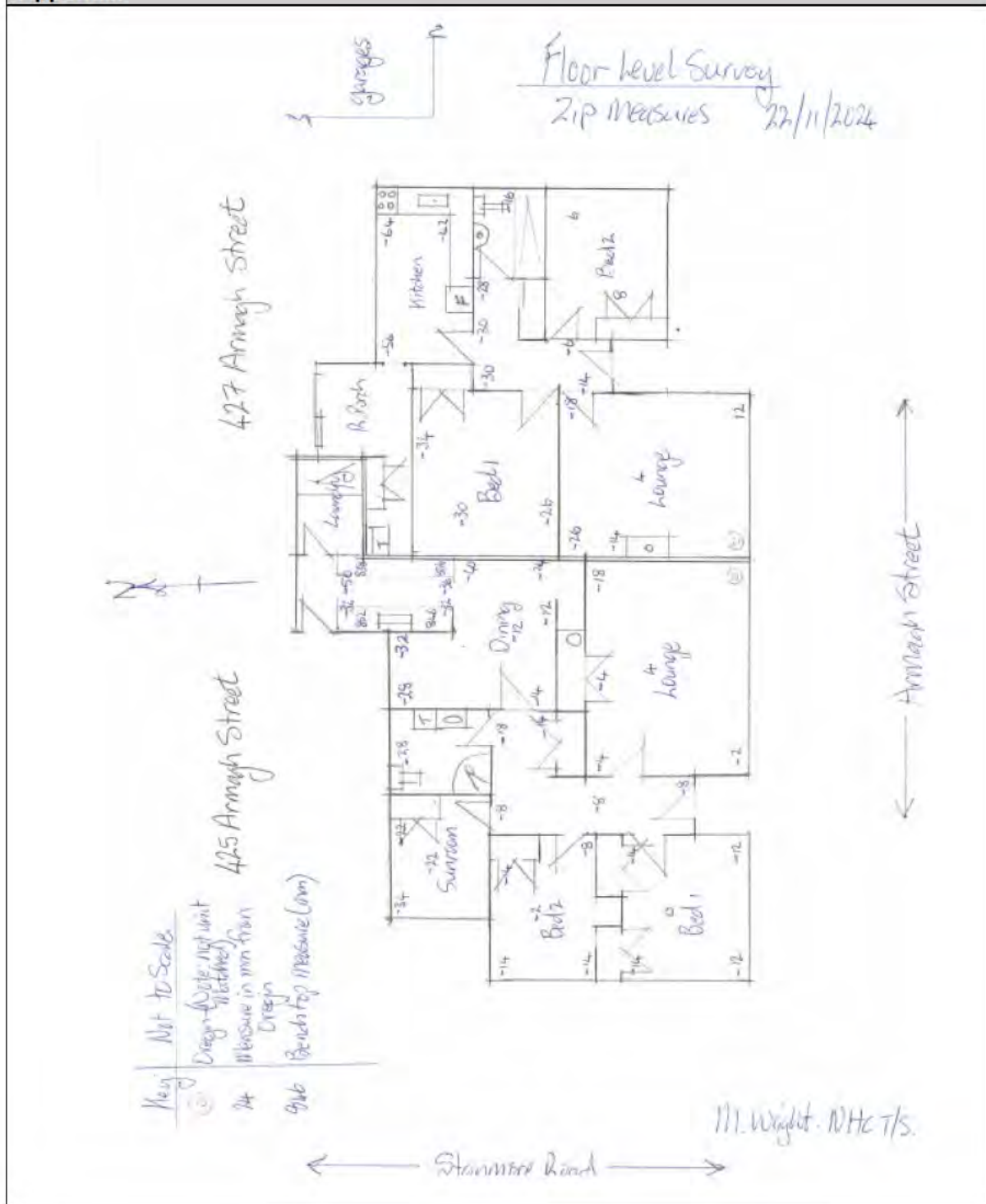


**Natural Hazards  
Commission**  
Toka Tū Ake

## Canterbury Claims – Assessment Report

- The SS is to advise the customer of the findings of this report and provide any necessary assistance for the engagement of a suitably qualified Engineer to review the foundation damage.

### Appendix





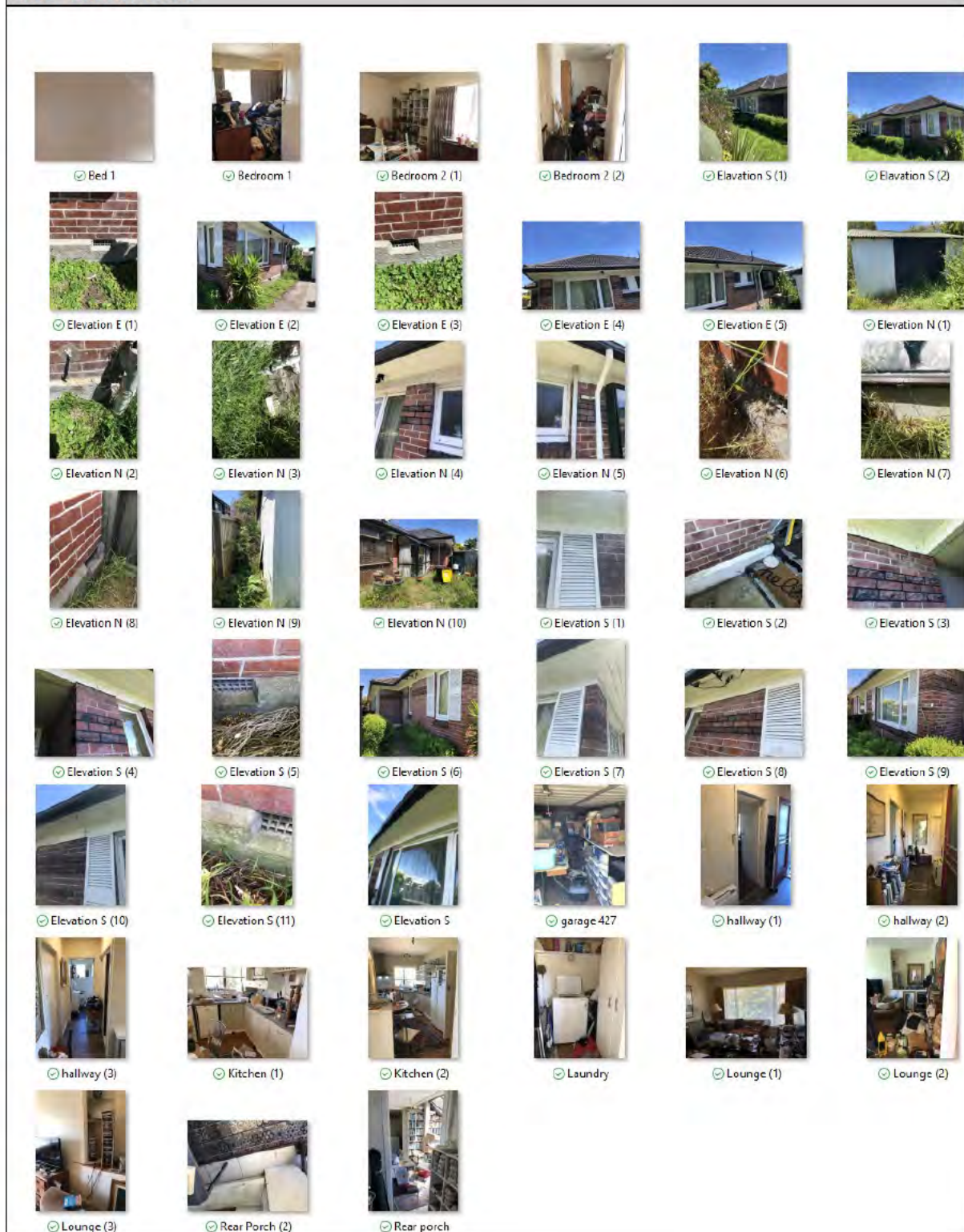
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## Canterbury Claims – Assessment Report



## Canterbury Claims – Assessment Report

### Site Visit Photos



# Cavity Critter

Roof Inspection **Internal**

[www.underfloorinspections.co.nz](http://www.underfloorinspections.co.nz)

106 Raddens Road

Ohoka

RD2 Kaiapoi 7692

021 343156

[gideon@underfloorinspections.co.nz](mailto:gideon@underfloorinspections.co.nz)

**Report prepared for: Amsworth Builders**

**Property address: 427 Armagah Street. Linwood**

**Date: 2 June 2025**

**Prepared by: Gideon Couper LBP Site 2 100074**

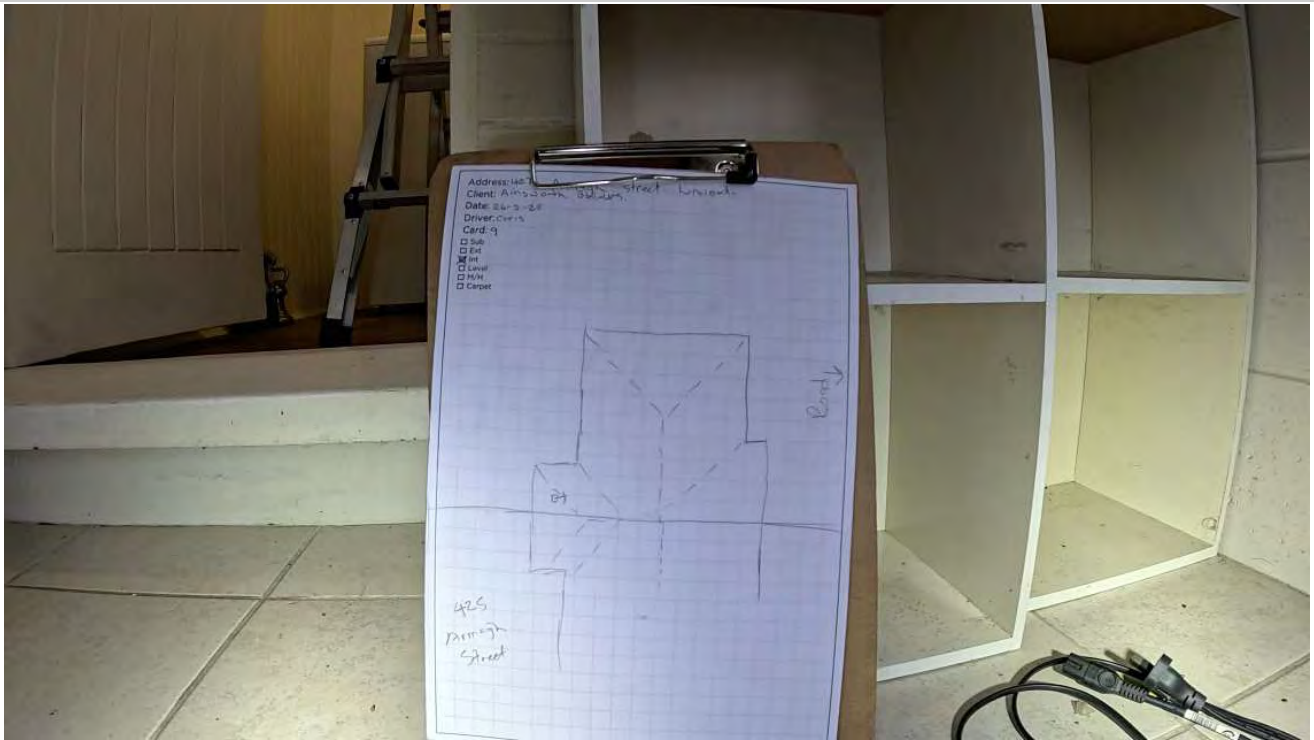
**Numbers corresponded to roof layout plan. Arrows represent which direction the photo was taken from.**



**Cavity Critter**



1: Photo for legal purposes, showing who did the job and when.



2: Look down view of the roof.





3: This is the fire wall between the units with the other unit's bathroom being on the other side. Although the fire wall is covered with spider webs, it does appear to be okay, and I could find no evident cracks on this side.



4: The ceiling in lower in this area.





5: View of firewall.



6: View of firewall.





7: View of firewall.



8: View of firewall.





9: View along firewall with the header tank. The header tank is poorly supported and unrestrained.



10: View along roof.





11: View of valley board with a water leak causing rot.



12: The support structure we see in this roof is fairly typical of a roof of this period but does leave some areas vulnerable to sagging.





13: This header tank represents a large, poorly supported and unrestrained weight which could easily come through the ceiling.



14: View of firewall.





15: View along roof.



16: View of valley join with ridge.





17: There are indications that the left side rafters may have moved around 7mm away from the ridge. Most of them appear to have this gap.



18: View along under purlin with propping.





19: We do see some dislodged and broken tiles, as we see here.



20: There are two broken tiles here.





21: Generally, every second or third tile is wired off to a batten or rafter although there appears to be a few missing here.



22: Here we see the gap between the rafters on both sides of the ridge.





23: Here we see a broken tile and another that has dropped down.



24: View across roof.





25: View along under purlin with propping.



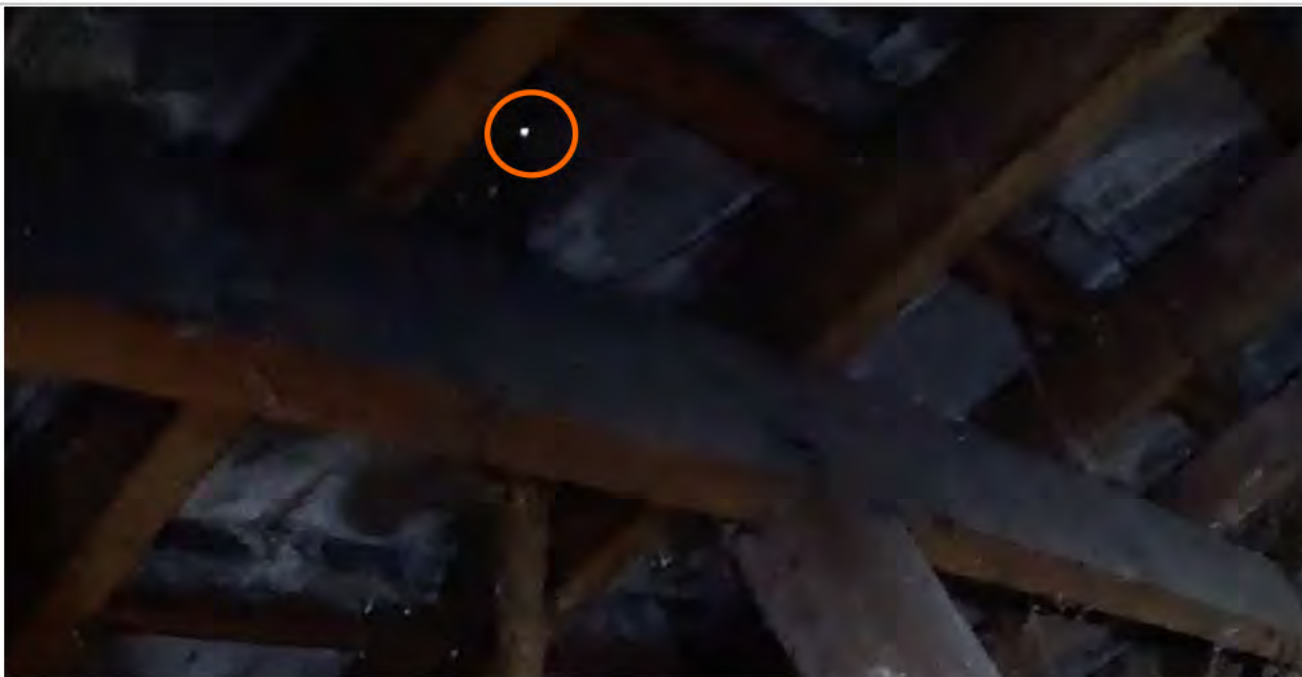
26: View along under purlin and note the lack of support.



27: View of the join of hips and ridge.



28: There is a broken tile.





29: View across roof.



30: View along under purlin with propping.





31: The ceiling is lower in this area.



32: Here we see damage to the ridge join and the right side has moved towards the back of the home





33: The ridge has moved at the bottom here.



34: View of valley board.





35: View across roof.



36: View across roof.





37: View of firewall.



38: This is a chimney has been reduced to rafter height and it has cracked down all sides.





39: View of chimney with cracking. The prop is a latter addition.



40: View of chimney with cracking.





41: View of chimney with new framing.

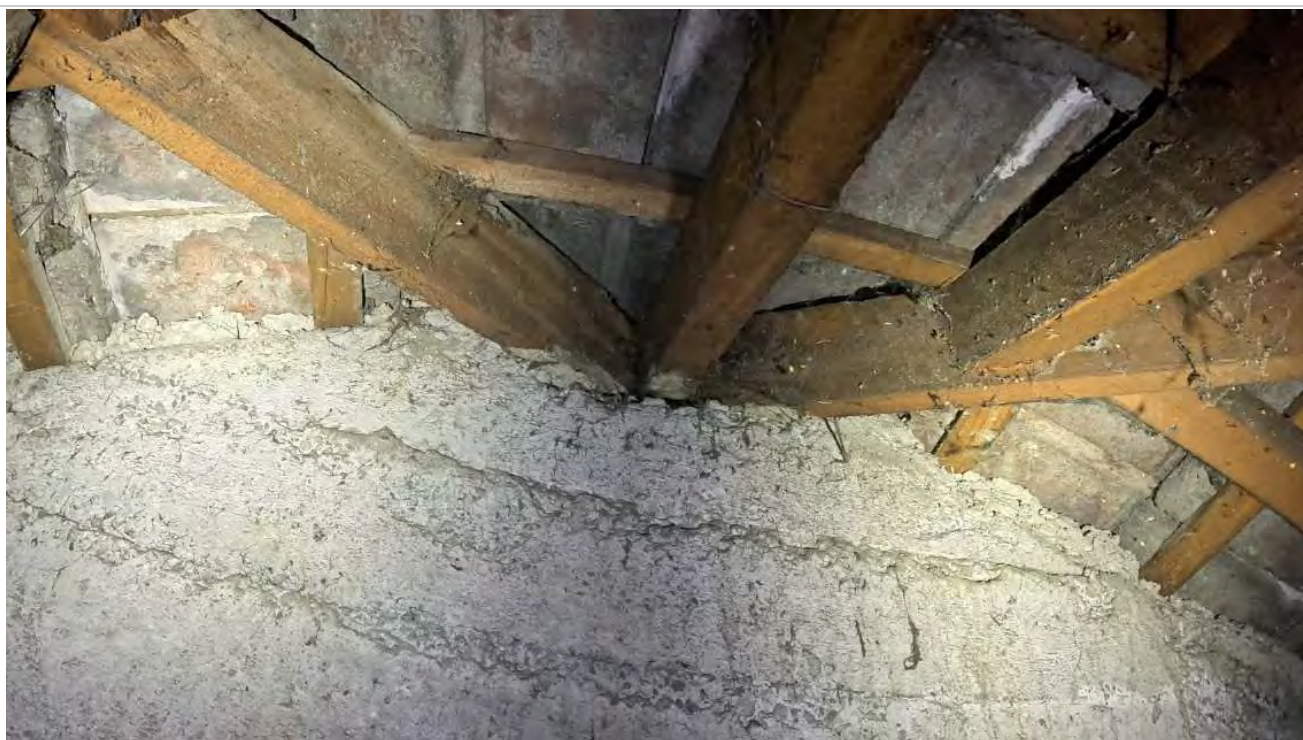


42: View of vent pipe.

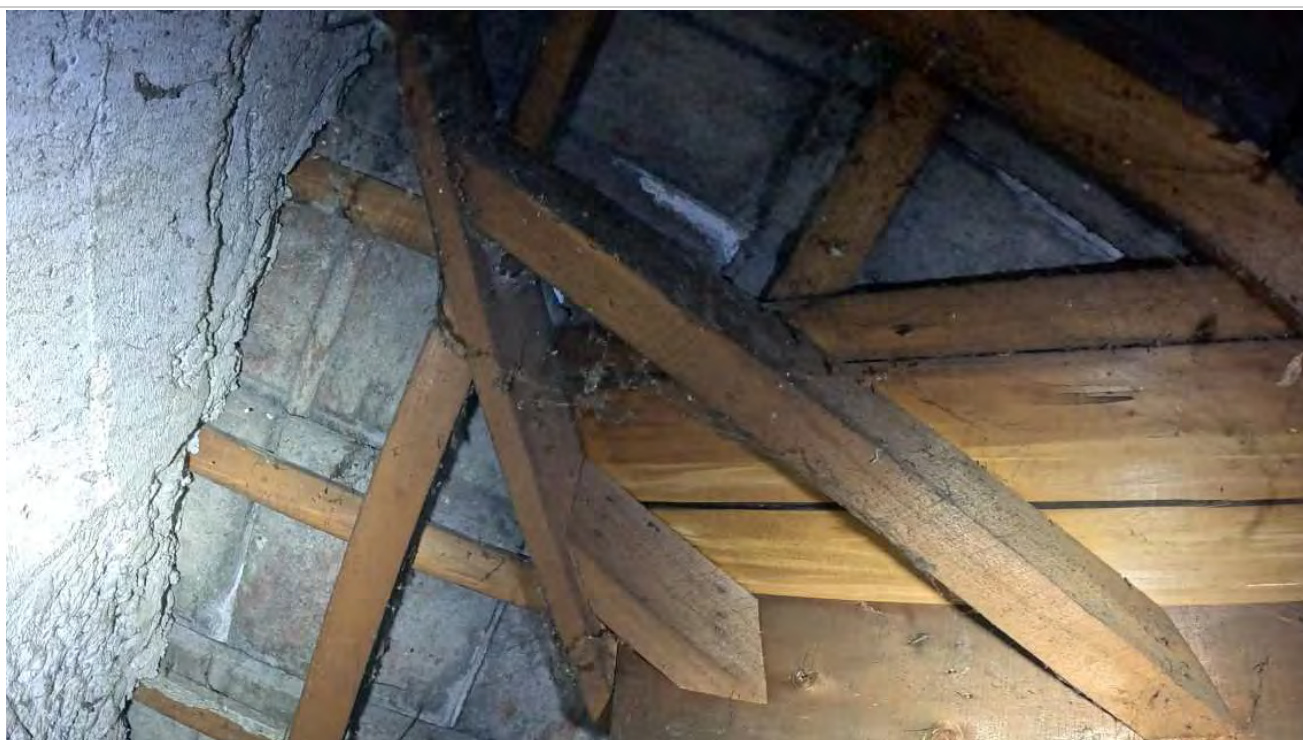




43: View of firewall with hips.



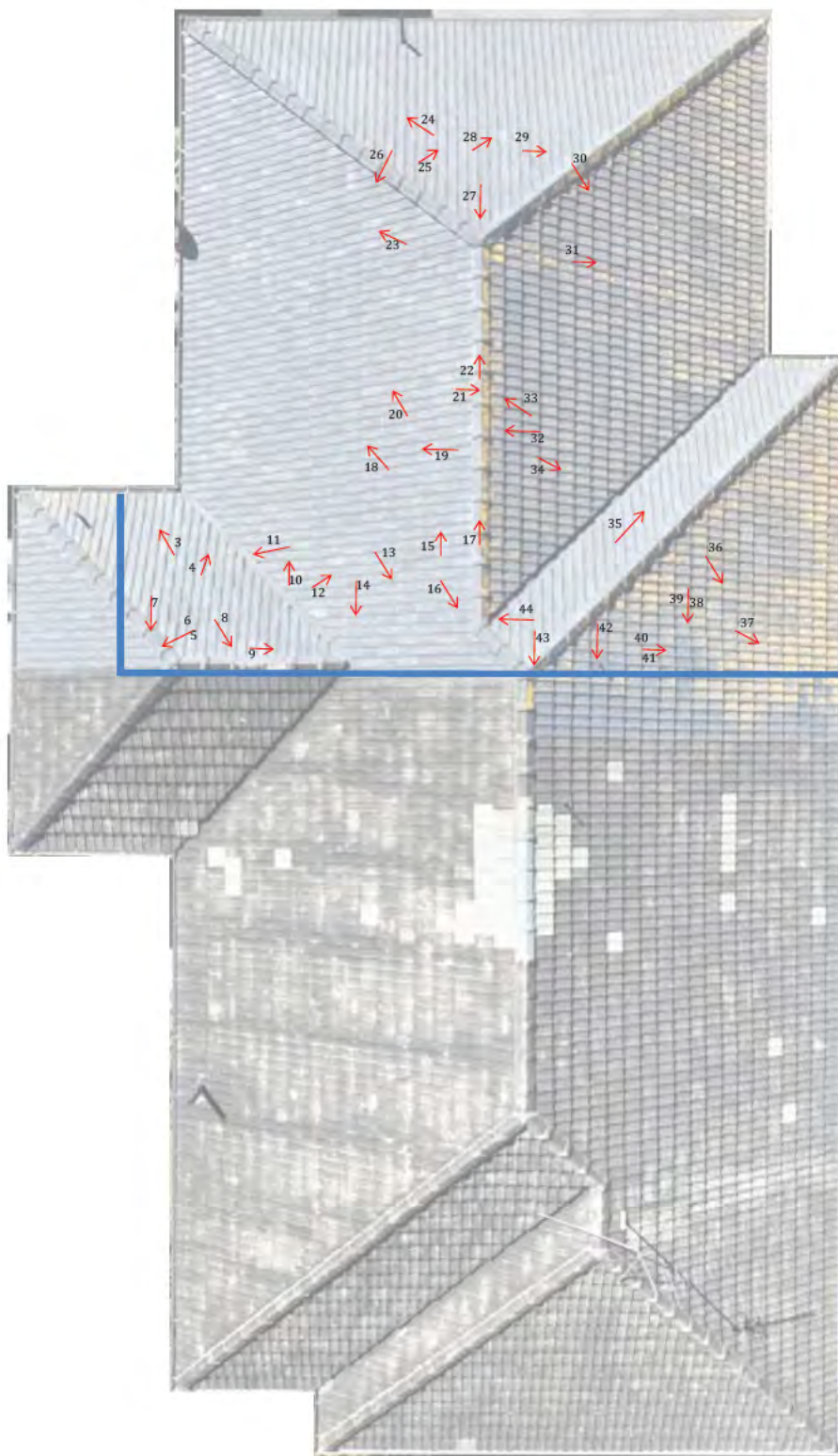
44: View of valley join with hip.





## Building roof plan

**Numbers corresponded to floor layout plan. Arrows represent which direction the photo was taken from. The roof plan is also supplied in a separate file.**



Internal roof plan 427 Armagh Street, Linwood

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