

**BCN/2019/6015****Exemption from building consent****13/09/2019**

**Notwithstanding any drawings or specifications accepted herein, all building work must comply with the New Zealand Building Code.**

**BUILDING  
PROJECT  
CERTAINTY**

30 August 2019,

Ms Rochelle Ainsworth,  
1/126 Halswell Junction Road,  
Halswell,  
**CHRISTCHURCH.**

Dear Ms Rochelle,

### **STRUCTURAL REPAIR STRATEGY – 1/126 HALSWELL JUNCTION ROAD**

Further to your request, we have considered the required scope of works to bring the existing building at the above address to a suitable standard to ensure compliance with the New Zealand Building Act 2004.

#### **Existing Dwelling**

The dwelling is a single-storey timber framed structure with a tiled roof, brick cladding and a Type C<sup>1</sup> concrete floor.

A level survey has been undertaken prior to works commencing and the results are shown on the attached drawings. A maximum height difference across the building of 30mm was recorded with a maximum floor slope of 1°.

The concrete floor has sustained some minor damage with crack widths of up to 20 mm as shown in the attached drawings. All the major cracks are in the construction joints and one minor crack in the foundation slab.

The cladding generally appears sound and there are only minor visible cracks around the perimeter of the building.

#### **Repair Strategy**

The site is classified as Technical Category 3. Part A and Part C of MBIE Guidelines dated December 2012 provide recommendations as to the appropriate foundation repair strategy.

The requirement to rebuild or relevel foundations is not strictly a structural engineering matter, as a dwelling can be completely safe structurally even though it is out of level. The MBIE guidelines can be used to assist in the determination of when various types of works are recommended.

<sup>1</sup> Ministry of Business, Innovation & Employment "Guidance: Repairing and Rebuilding houses affected by the Canterbury earthquakes" Version 3, December 2012 (Released 31 January 2013)

POSTAL ADDRESS:  
PO Box 36 258  
Merivale  
Christchurch 8146

CONTACT:  
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**E:** roy@procerto.co.nz

**www.procerto.co.nz**

Table 2.3 of the MBIE guidelines confirms that "No foundation relevel necessary" as the overall variation in level over the floor plan is less than 50mm.

According to Canterbury-Guidance Part C Section 14.2.2, for Type C foundations foundation releveling and local repairs can proceed in accordance with Part A, section 4.3.

As shown in Procerto drawings sheet A.1.04, some cracks need to be cut out and recast locally as slope is greater than 1 in 200 and crack width is 20mm and in other areas, cracks need to be grouted as the crack widths are < 20 mm and there are no vertical displacement:- according to Part A – Appendix A4.4.3 Repair processes-floor slabs.

Sika InjectoCem – 190 can be used for grouting the cracks on concrete slab.

### Proposed Scope of Works

Category	Description of Work
CCo10000 Preliminaries	<ol style="list-style-type: none"> <li>1. Fees</li> <li>2. Site Establishment</li> <li>3. Temporary Services</li> </ol>
CCo20000 Demolition	<ol style="list-style-type: none"> <li>1. Remove all damaged floor carpets</li> </ol>
CCo30000 Excavation	
CCo40000 Underpinning	
CCo50000 Piling	
CCo60000 Concrete Work	<ol style="list-style-type: none"> <li>1. Repair the cracks up to 10 mm width with Sikaflex – 11FC.</li> <li>2. Repair the crack of 0.2mm width with Sikadur-52.</li> <li>3. Repair widest cracks by cutting back the slab, 100 mm each side of the crack, repair the DPC if required, epoxy starter bars, repour concrete slab.</li> </ol>
CCo70000 Sprayed Concrete	
CCo80000 Precast Concrete	
CCo90000 Reinforcing Steel	
CCo10000 Structural Steel	
CCo11000 Mastic Asphalt	
CCo12000 Brickwork	<ol style="list-style-type: none"> <li>1. Repair all cracks in the claddings.</li> </ol>
CCo13000 Blockwork	
CCo14000 Stone Masonry	
CCo15000 Metalwork	
CCo16000 Metal Windows and Doors	
CCo17000 Carpentry	<ol style="list-style-type: none"> <li>1. Ease and straighten all windows and doors</li> </ol>
CCo18000 Laminated Timber	
CCo19000 Joinery	
CCo20000 Proprietary Partitions	
CCo21000 Insulating Panel Systems	

CCo22000 Roofing	
CCo23000 Plumbing and Gas Fitting	
CCo24000 Drainage	1. Repair or replace sewer and stormwater drains as required.
CCo25000 Mechanical Services	
CCo26000 Fire Protection	
CCo27000 Lifts and Escalators	
CCo28000 Electrical Services	
CCo29000 Solid Plaster	
CCo30000 Plasterboard Linings	1. Repair minor cracks in the plasterboard as required.
CCo31000 Grid Suspended Ceilings	
CCo32000 Tiling	
CCo33000 Terrazzo Work	
CCo34000 Floor Coverings	1. Repair or replace all of the damaged carpet.
CCo35000 Painting and Specialist Finishes	1. Stop and paint new Gib board linings
CCo36000 Glazing	
CCo37000 Site works	1. Repair the cracked pavement near the entrance to the house as required.
CCo38000 Included Sums	

Please contact the undersigned if you have any queries regarding the above.

Yours faithfully



**ROY HAMILTON**

B.E. Civil, CPEng, CMEngNZ, Int P.E.  
Manager | Director | Engineer

Level 1, 182 Papanui Road, Merivale, Christchurch.  
PO Box 36258, Merivale, Christchurch

03 669 3349  
021 968 613

[roy@procerto.co.nz](mailto:roy@procerto.co.nz)  
[www.procerto.co.nz](http://www.procerto.co.nz)

6 September 2019

Ms R Ainsworth  
1/126 Halswell Junction Road  
Oaklands  
**CHRISTCHURCH 8025**

Attention: Ms R Ainsworth

Dear Rochelle

**ENGINEERING INSPECTIONS – 1/126 HALSWELL JUNCTION ROAD**

Further to the provision of our Design Producer Statement (PS1) for the works above, we advise that the following inspections will be required to allow us to establish that the works have been constructed in accordance with our design proposals and that any design assumptions that we have made are appropriate. The inspections will be required before we can issue the Construction Review Producer Statement (PS4) for inclusion with the application for the Code Compliance Certificate for the works.

The required inspections include:

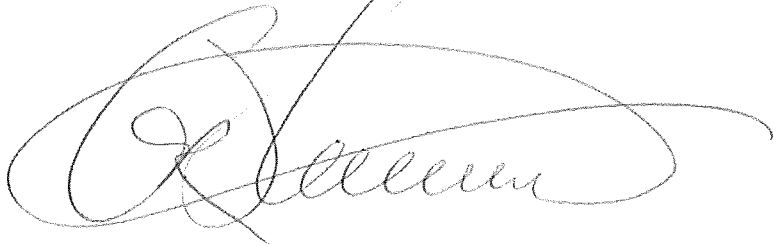
1. An inspection during the floor slab crack repair work after the joints have been prepared and before any infill has been placed.
2. A final inspection before floor coverings are laid.

Please ensure that we are advised of the status of the works at least three days in advance of the above activities occurring to allow us to book the required inspections into our schedule.

Please contact the undersigned if you have any queries regarding the inspection schedule above.

Yours faithfully

**PROCERTO GROUP LIMITED**



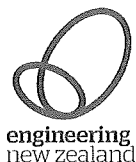
**ROY HAMILTON**  
Director

Cell 021 968 613  
[roy@procerto.co.nz](mailto:roy@procerto.co.nz)

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New Zealand  
Institute of Architects  
Incorporated



Building Code Clause(s) **B1/VM1**

## PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at [www.engineeringnz.org](http://www.engineeringnz.org))

ISSUED BY: **Procerto Group Limited**

(Design Firm)

TO: **Ms R Ainsworth**

(Owner/Developer)

TO BE SUPPLIED TO: **Christchurch City Council**

(Building Consent Authority)

IN RESPECT OF: **Floor slab crack repairs**

(Description of Building Work)

AT: **1/126 Halswell Junction Road**

(Address)

Town/City: **Christchurch**

(Address)

LOT

DP

SO

We have been engaged by the owner/developer referred to above to provide:

Structural engineering design and construction monitoring services for the waffle slab foundation.

(Extent of Engagement)

services in respect of the requirements of Clause(s) **B1/VM1** of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

☒ Compliance Documents issued by the Ministry of Business, Innovation & Employment **B1/VM1** or  
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule.

The proposed building work covered by this producer statement is described on the drawings titled:

**Procerto Group, 126 Halswell Junction Road Residential Repair** and numbered **A.0.00 - S.5.01 Rev A** together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

Refer attached inspection schedule

- (i) Site verification of the following design assumptions
- (ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☒ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, **Graeme Roy Hamilton** am: ☒ CPEng **127491** # ☐ Reg Arch #  
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: **BE (Civil)**

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000\*.

The Design Firm is a member of ACENZ: ☐

SIGNED BY **Graeme Roy Hamilton**

(Name of Design Professional)

(Signature) **Roy Hamilton (Procerto)** Digitally signed by Roy Hamilton (Procerto) Date: 2019.09.08 15:12:15 +1200

ON BEHALF OF **Procerto Group Limited** Date **06.09.2019**  
(Design Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000\*.

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.  
THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA



## Photographs



Fig 1: Front side of the house



Fig 2: Cracks in the pavement – near the entrance

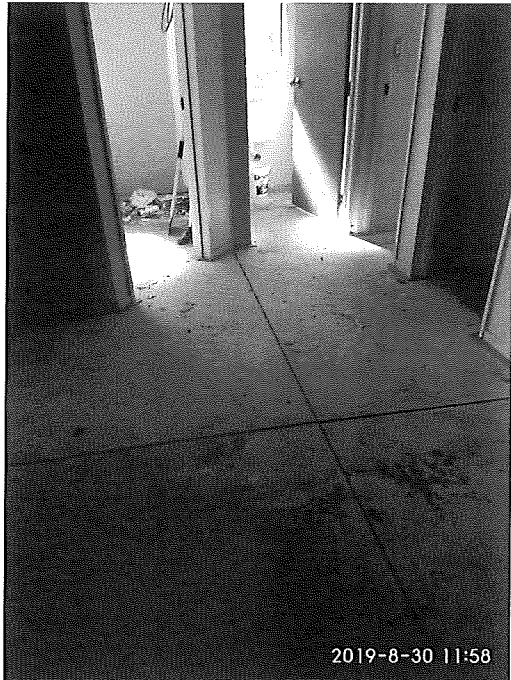


Fig 3: Crack in concrete block southwest of the house



Fig 4: 20mm crack in living area





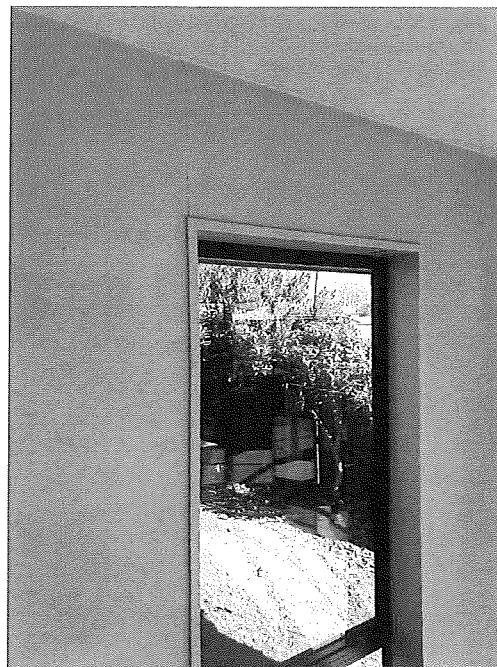
**Fig 5: Cracks in hallway**



**Fig 6: Crack in room 3(refer to Procerto drawings)**



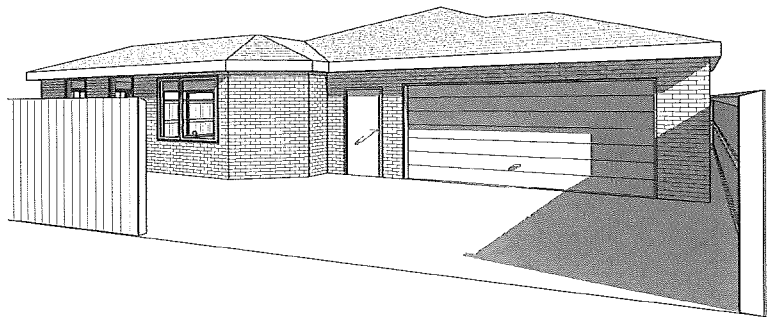
**Fig 7: Crack in perimeter foundation**



**Fig 8: Crack in wall lining at top left corner of window**

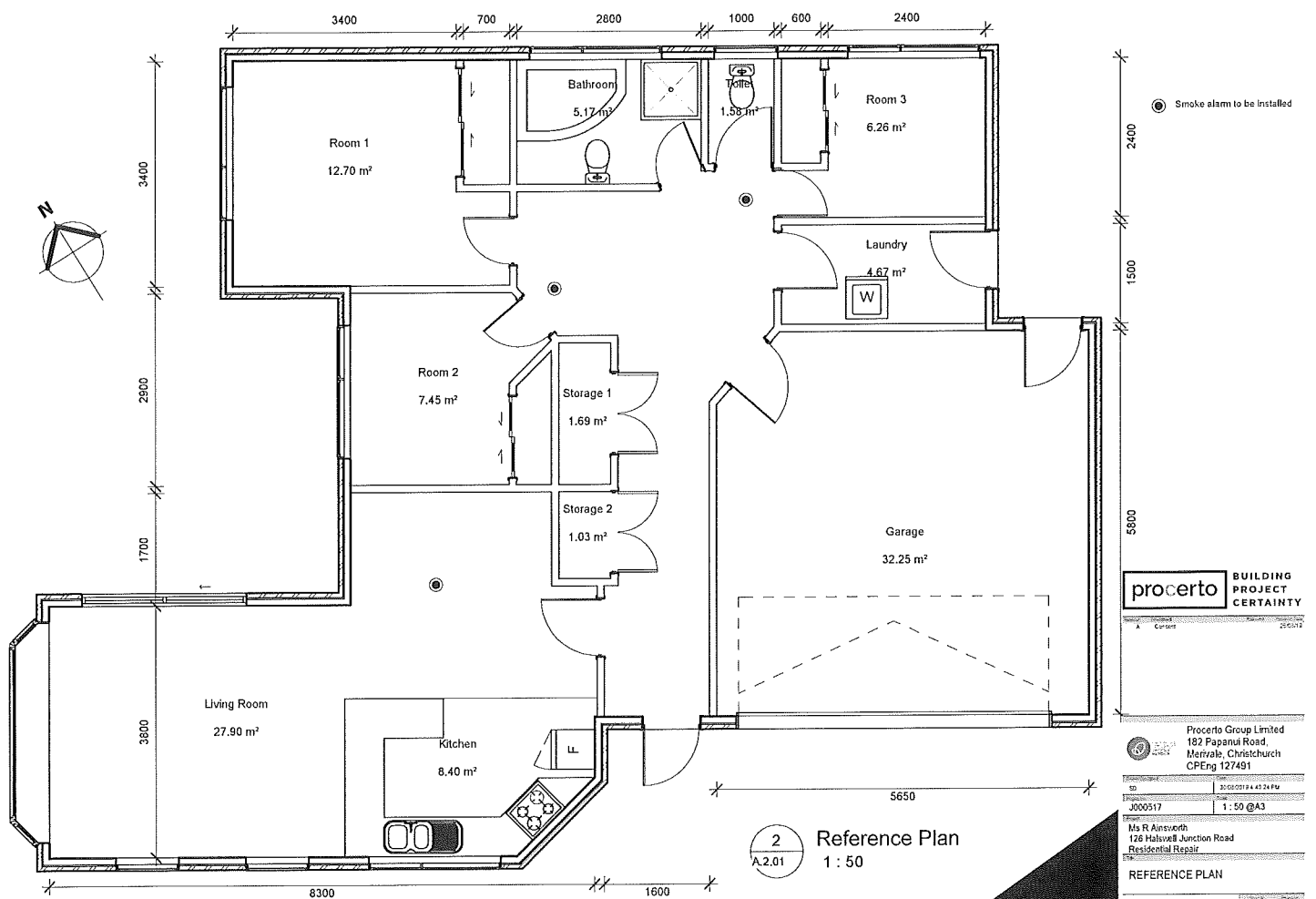
STRUCTURAL REPAIR  
FOR EXISTING DWELLING  
AT  
1/126 HALSWELL JUNCTION ROAD

SHEET LIST		
Number	Name	Revision
A.0.00	COVER SHEET	A
A.1.01	REFERENCE PLAN	A
A.1.02	SITE PLAN	A
A.1.03	FLOOR LEVEL PLAN	A
A.1.04	FOUNDATION PLAN - CRACKS	A
A.1.05	WALL LINING REPAIR	A
A.2.01	ELEVATIONS	A
A.2.02	ELEVATIONS	A
A.5.01	FOUNDATION DETAILS	A
S.0.01	STRUCTURAL NOTES	A
S.0.02	STRUCTURAL NOTES	A
S.0.03	STRUCTURAL NOTES	A
S.5.01	DETAILS	A

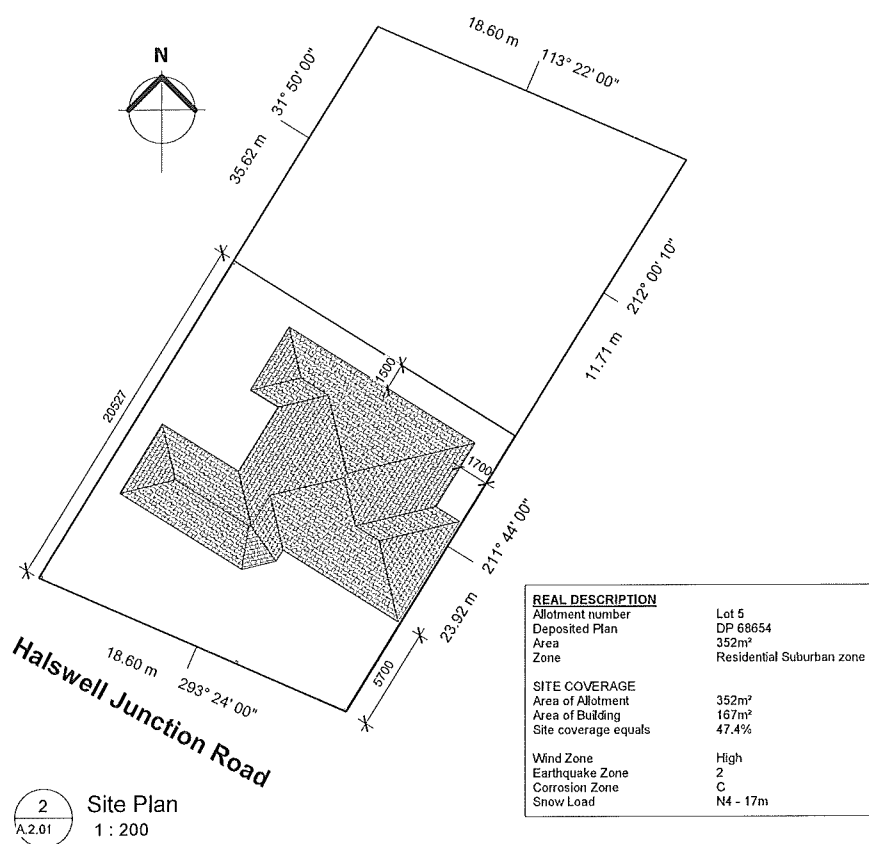


Procerto Group Limited 182 Papanui Road, Merrivale, Christchurch CPEng 127491	
Project No.	127491
Drawn	J000517
Scale	@A3
Client	Ms R Ainsworth 126 Halswell Junction Road Residential Repair
COVER SHEET	
For Consent	A.0.00 Rev A





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## GENERAL NOTES

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES TO BE RAISED WITH THE DESIGNER / ARCHITECT

All work shall comply with the NZBC, all relevant Local Authority bylaws, NZS 3604, and all relevant standards

All work to be carried out in accordance with drawings and specification provided

All work to be undertaken to be best trade practice for each respective trade. Any substandard work or building material defects shall be the Contractors responsibility to remove, repair or replace at no extra cost to the contract

The Contractor shall ensure that all rubbish is removed from site during and at the end of the contract works

The Contractor shall provide the appropriate temporary fencing, hoarding, guardrails and signage as necessary to protect the public and others during the contract works and to meet the requirements of the Local and Territorial Authorities

All timber shall be H1.2 treated graded SG-8 unless stated otherwise

Refer to the Roof Truss Manufacturers drawings and specification.



Procerto Group Limited  
182 Papanui Road,  
Blenheim, Christchurch  
CPEng 127491

1000517 As Indicated @A3

Ms R. Anscombe  
126 Halswell Junction Road  
Residential Repair

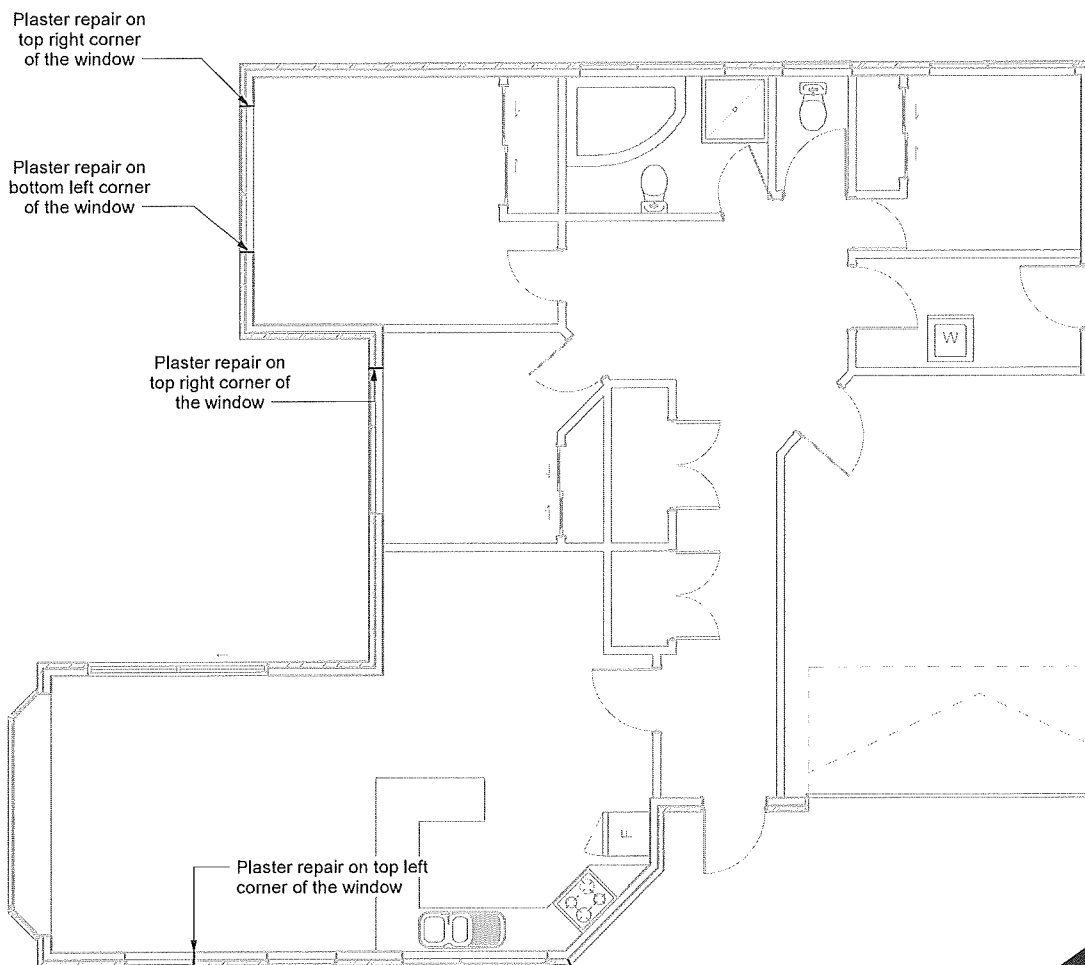
**SITE PLAN**

For Consent A.1.02 Rev A









**Wall lining**  
1 : 50

Repair all other minor cracks in the wall lining

**procerto** BUILDING PROJECT CERTAINTY

Project: 1000517 | Date: 20/05/19

Procerto Group Limited  
182 Papanui Road,  
Merivale, Christchurch  
CPEng 127491

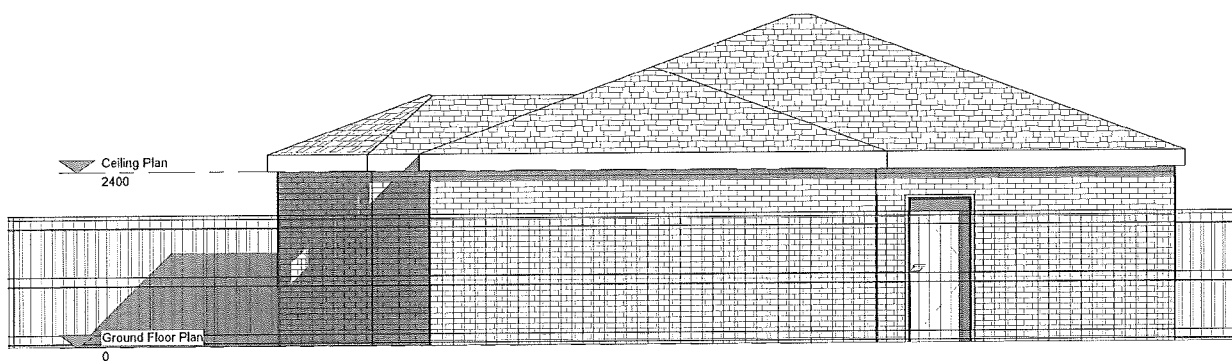
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Ms R Ainsworth  
125 Halswell Junction Road  
Residential Repair

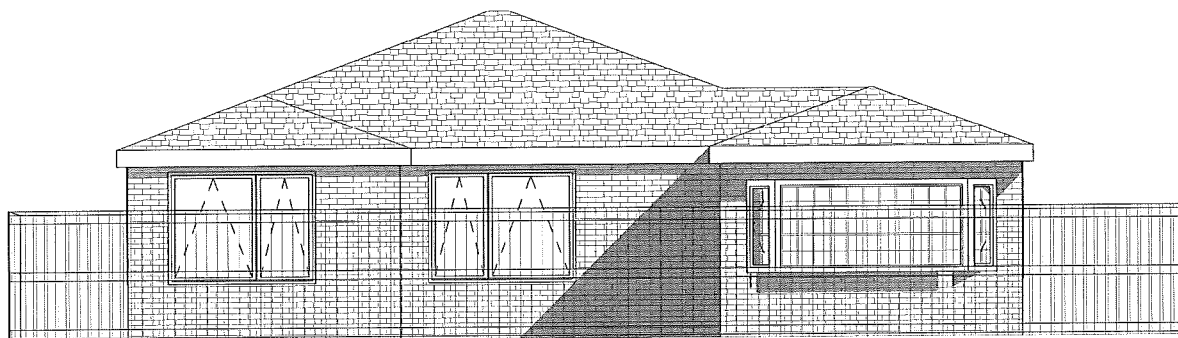
**WALL LINING REPAIR**

www.procerto.co.nz

For Consent | A.1.05 | Rev A




1 East Elevation  
1 : 50



2 West Elevation  
1 : 50

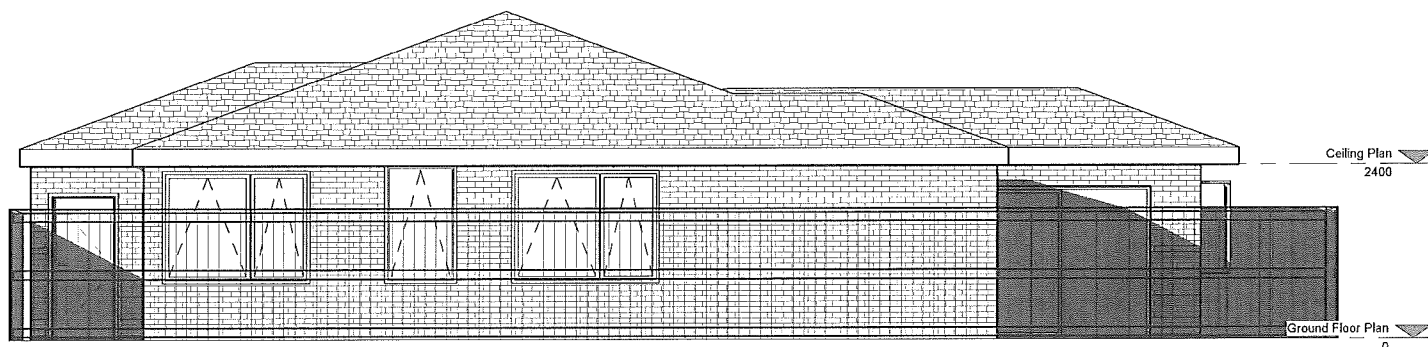


 <b>Procerto Group Limited</b> 182 Papanui Road, Mariri, Christchurch CPEng 127491		
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J000517	1:50 @A3	
Ms R Ainsworth 120 Halswell Junction Road Residential Repair		
<b>ELEVATIONS</b>		
For Consent	A.2.01	Rev A

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1 North Elevation  
1 : 50



2 South Elevation  
1 : 50



Procerto Group Limited  
182 Papanui Road,  
Methven, Christchurch  
CPEng 127491

Project: J000517 Date: 20/09/2019 4:40:28 PM

Scale: 1:50 @A3

Mr R. Ansell  
126 Halswell Junction Road  
Residential Repair


ELEVATIONS

For Consent A.2.02 Rev A

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Christchurch City Council | Exemption from building consent | BCN/2019/6015 | 13/09/2019 | Page 16 of 19



 <b>Procerto Group Limited</b> 182 Papanui Road, Merivale, Christchurch CPENG 127491			
(Contract Number) ID		375500191 + 40 32 PW	
J000517		1 : 5 @A3	
<b>Ms R Ainsworth</b> 126 Harehale Junction Road Residential Repair			
Title			
<b>DETAILS</b>			
<b>For Consent</b>		S.501	Ref A



**13.2 MASONRY WALL CONTROL JOINTS**  
 a. Provide control joints at a maximum of 5.0m centres.  
 b. Standard masonry control joint (4.5)

1) standard course:  
 a) Reinforcement to control joint as per standard course.  
 b) R300E16 lap bar, 800mm long plate  
 c) central about control joint. Wrap top end  
 in dense tape or approved equivalent.  
 d) Horizontal reinforcement terminated each  
 side of control joint.  
 e) Distort each side of masonry as per standard  
 course.  
 f) Masonry surface in a smooth control joint.

13.3 PENETRATIONS  
a. Allow for making all necessary penetrations and embedment of all necessary conduits and things in masonry walls.

Penetration shall generally be formed in walls rather than cut throats.

#### 14.1 GENERAL

<b>14.1 GENERAL</b>	
a.	UFO on the project drawings the construction work shall comply with IZS 3004 2011.
b.	All dimensions shall be verified on site by the contractor before commencement of work.
c.	Structural drawings to be read in conjunction with the drawings of other disciplines. (e.g. architect, mechanical, building services, electrical, etc.)
d.	These standard details are not complete in themselves and reference shall be made to specific details within the contract drawings.
e.	Unless otherwise specified on the project drawings, these standard details and notes

## Green | 2

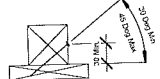
Green grained and dry dressed timber

- a. Width (b)  $+40.5 \text{ mm}$
- b. Depth (d)  $+40.5 \text{ mm}$
- c. Length (l)  $+40.5 \text{ mm}$  per 1000 mm when length is a critical factor
- d. Bow  $(L/500) \times 10 \text{ mm}$
- e. Crook  $(L/500) \times 10 \text{ mm}$
- f. Twist  $(L/300 \times 5) \text{ mm}$  per mm width of face of timber as per NZS 3631
- g. Cup

a. All roads shall be flattened type 170.

- b. Hairs shall be fully drawn.
- c. Saw nails shall be as follows:

*Journal of Management Education* 36(7) 809–824

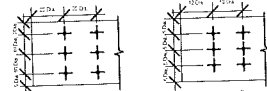
☒

d. The minimum penetration of a nail into the piece of timber receiving the point of the nail should be 0.5 times the length of the nail to achieve maximum effect. Penetration should be at least 0.4 times the length of the nail.

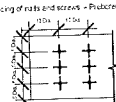
e. The minimum penetration of a screw into the piece of timber receiving the screw point should be 7 times the shank diameter to achieve maximum effect. Penetration shall not be less than 0.4 times the length of the shank.

14.4 EDGE DISTANCES FOR NAILS, SCREWS AND BOLTS:

a. Minimum spacing of rails - No pre-tensioning

[illegible]

	All timber except Radiata pine	Radiata pine only
1990	100	100
1991	100	100
1992	100	100
1993	100	100
1994	100	100
1995	100	100
1996	100	100
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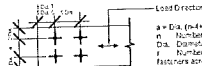


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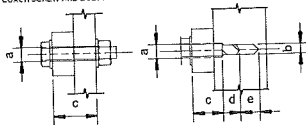
P. Dutton, H. Gray, W. Smith, M. R. Anscombe, 002317 • 126 Hatwell Junction Road • Structural Design Services Private • 000517 • 126 Hatwell Junction Road

Load Director



4.5000	
--------	--

12-in diameter		diameter		diameter	
Spacing (B)	Spacing (A)	Thickness (B)	Spacing (A)	Thickness (B)	Spacing (A)
47	45	47	48	47	54
69-144	60	69	65	69	68
		94-144	60	94	82
				119-144	100



Remainders show intent of pre-deceased holder

a. Hole diameter (bolt diameter + 2mm)

c. Length of shrimp

d. Length of broad to thin axis  
e. 2 x root diameter

## REFERENCES

Provide mild steel washers between bolt head and

22

TABLE 1. D. Whitehead's list of fish 6/24

TABLE 1. *Continued*

Marbitt dia. mm	Min. washer size
8	25 x 25 x 1.5 mm
12	50 x 50 x 3 mm
20	65 x 65 x 5 mm
GREATER THAN 20	75 x 75 x 8 mm

