

Building Operations Unit

Residential* application for a building consent and/or project information memorandum

Section 33 or section 45, Building Act 2004

FORM 2 - BUILDING (FORMS) REGULATIONS 2004

About this Form

- *Residential buildings for the purposes of this application are either levels Residential 1, 2, or 3 type buildings as defined by National BCA Competency Assessment System which can be found on Ministry of Business, Innovation and Employment Building and Housing Group's website at www.dbh.govt.nz/bca-competency-assessment-system-update#top
- A project information memorandum (PIM) is a report issued by the Council prior to or in conjunction with a building consent. A PIM report provides information known to the Council which is relevant to your building proposal.
- Please check that the forms that you are using are current at the time of application as they are subject to change without notice.
- General information can be found on our website at www.ccc.govt.nz/homeliving/buildingplanning/index.aspx
- A building consent is the formal approval issued by a Building Consent Authority (BCA) to ensure certain works meet the requirements of the Building Act 2004, Building Regulations and New Zealand Building Code.

1. Application Type (select type appropriately)

If you have an existing application number relating to this building please note the number beside the application type:

I request that you issue:

☐ project information memorandum (PIM) only:☒ building consent only:☐ building consent with a PIM:☐ staged building consent:☐ amendment to building consent:☐ national multi-use approval number:

If yes provide copies of MultiProof certificate, plans and specifications

Was there a pre-application meeting prior to this application being made? ☐ Yes ☐ No

Pre-application meeting reference number if applicable:

Earthquake related work	Is this application earthquake related?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
	If yes, is it coordinated by an insurance company via a project management organisation (PMO), e.g. Arrow, Fletchers, Hawkins etc?	<input type="checkbox"/> yes	<input type="checkbox"/> no
	If yes, name of PMO: <i>Fletchers Tech Hub 2011/042891</i>		

I wish to receive my building consent/PIM and approved documentation in the following format:

☐ Electronically via Online Services☒ Electronically via Build Express (Aconex)☐ on CD☐ Hard copy (additional costs apply)The CD or Hard Copy documents are to be collected from [*select*]

2. The Building (project location)

Street address of building: *34 Carters Road, Aranui, Christchurch.*

(For structures that do not have a street address, state the nearest intersection and the distance and direction from that intersection)

Legal description of land where building is located: Lot No: *8* DP: *24238*

State legal description as at the date of application and, if subdivision is proposed include details of relevant Lot numbers and subdivision consent.

Building name: (where applicable) *n/a*Location of building within site/block number: (include nearest street access) *Cartes... Road. & 187 Shortland, ST.*

Number of levels: (including ground level and any levels below ground) 1

Level/Unit number: (if applicable) n/a

Area: (floor area measured over external walls) Existing floor area: 86.5msq New floor area: n/a Total floor area: 86.5msq

Current, lawfully established, use: (include number of occupants per level and per use if more than 1 level) Single story dwelling.

Year first constructed: (insert year, approximate date is acceptable, e.g. c1920s or 1960-1970) 1961-1980

3. The Owner (must be completed for all applications and all details must be the owner's)

Name of Owner: Craig Williamson

(Include preferred form of title, e.g. Mr, Mrs, Ms Miss, Dr if an individual and the contact person's name if a company, trust or similar)

Contact person (must have a New Zealand address): Craig Williamson

Email: craigtw.online@gmail.com

Mailing address: Box/Street Name: 34 Suburb/Lobby: Aranui

City: Christchurch Post Code: 8061

Street address/Registered office: ☐ If different than above

No and Street Name: Suburb:

City: Post Code:

Phone numbers: Landline: Mobile:

Fax: After hours:

The follow evidence of ownership (as appropriate to the circumstances) showing the full name of the legal owner(s) of the building is attached to this application:

☐ A recent copy of certificate of title(s), and where applicable the following:

☐ Lease ☐ Agreement for sale and purchase ☐ Licence or property management agreement

CT(s) available at Christchurch City Council for a fee. Required? ☐ Yes ☒ No

4. Agent (only required if application is being made on behalf of the owner)

AGENT – FIRST POINT OF CONTACT: (must be authorised by the owner to make this application)

Name of agent: Fletchers EQR Technical Hub

(Include the contact person's name if a company, trust or similar)

Contact person: (must have a New Zealand address) Patrick. Clark

Email: Patrick.Clark@eqr.co.nz Website: n/a

Mailing address: Box/Street name: 7 Deans ave , level 2 Suburb/Lobby: Addington

City: Christchurch Post code: 8011

Street address/Registered office: ☐ If different than above

No and street name: Suburb:

City: Post code:

Phone numbers: Landline: Mobile:

Fax: After hours:

Relationship to owner:

(state details of the authorisation from the owner to make the application on the owner's behalf)

Note: written authorisation must be provided where an application is made by an agent on behalf of an owner.

First point of contact (mark boxes as appropriate and provide details of any other points of contact for communications with Council/Building Consent Authority):

☒ Agent ☒ Owner ☐ Other: (if other specify whom and provide contact details as per above)

5. Signature / Billing / Declaration

[To be completed and signed by Owner / Agent.]

I / we understand that the fees charged at lodgement **are a deposit only**, and that the Council will charge me / us for all costs actually and reasonably incurred in processing this application. These will be paid before the consent is uplifted and the work started.

All of the included information on this form is, to the best of my knowledge, true and correct. I understand that all plans, documentation and reports submitted as part of an application are required to be kept available for public record, therefore the public (including business organisations and other units of the Council) may view this application, once submitted. All development contributions charges (where applicable) will be billed to the owner(s) as shown on page two.

I / we understand that no work is to commence until the building consent is uplifted.

Owner's / Agent signature: 

Date: 09/01/13

Print name: Patrick Clark

If you are signing this application on behalf of a company/trust/other entity (the applicant), you are declaring that you are duly authorised to sign on behalf of the applicant to make such an application.

By signing this application you are accepting responsibility to pay all actual and reasonable costs incurred by the Christchurch City Council.

PRIVACY INFORMATION:

If you would like to request access to, or correction of, your details, please contact the Council.

6. The Project

Description of the building work: (provide sufficient description of the building work to enable scope of work to be fully understood)

The concrete ring beam foundation re-leveled.

Will the building work result in a change of use of the building? ☐ Yes ☒ No

If yes, provide details of the new use:

Estimated value of the building work on which the building levy will be calculated (incl GST): \$20,000

(State estimated value as defined in section 7 of the Building Act 2004)

If an amendment application advise of the estimated value of amended work (incl GST): \$n/a

(Is this in addition to, or reduction from, what was stated with the original application?) ☐ Addition ☐ Reduction ☐ No change

Stage: _____ of an intended _____ stages

Intended life of the building if less than 50 years: _____ years

Does the work involve re-cladding the building? ☐ yes ☐ no

Is application subject to a claim under the Weathertight Homes Resolution Service scheme? ☐ Yes ☒ No

If yes, WHRS claim number:

Is application subject to a claim under the Financial Assistance Package scheme? ☐ Yes ☒ No

List the associated consents or memorandums previously issued for this project ☒ None ☐ Yes - provide details.

Building/PIM:

Resource:

Subdivision:

ECan:

Geotechnical report

If information has been uploaded or down loaded from Canterbury Geotech Data Base (Project Orbit) please provide the unique report reference number. The Geotechnical report number from project orbit is needed for all Geotechnical land assessment reports). Please note: your building consent can not be processed if a land assessment Geotechnical report is needed and the project orbit report number has not been included. **Report Number:** n/a

7. Site Issues and Project Information Memorandum

The following matters are involved in the project:

<input type="checkbox"/> Subdivision (building or land)	<input type="checkbox"/> New or altered access for vehicles
<input type="checkbox"/> Alterations to land contours	<input type="checkbox"/> Building work over or adjacent to any road or public place
<input type="checkbox"/> New or altered connection to public utilities	<input type="checkbox"/> Building work over any existing drains or sewers or in close proximity to wells or water mains
<input type="checkbox"/> New or altered locations and/or external dimensions of building(s)	<input type="checkbox"/> The building or site has cultural or heritage significance, or is a marae, please specify: <i>n/a</i>
<input type="checkbox"/> The site subject to natural or created hazards such as erosion, subsidence, flooding, slips, cut and fill or contamination please specify: <i>n/a</i>	
<input type="checkbox"/> Potable water supply other than council supply: eg private supply well/bore or rain water storage tank. Please specify type and location: <i>n/a</i>	
<input type="checkbox"/> Disposal of storm water and wastewater. For methods other than council systems please specify type and location: <i>n/a</i>	
<input type="checkbox"/> Other matters known to the applicant that may require authorisation from the appropriate territorial authority, please specify: <i>n/a</i>	

8. Attachments *(The following documents are attached to this application)*

- ☐ Proof of Ownership
- ☒ Plans and Specifications
- ☒ Completed relevant application checksheet(s)
- ☒ Memoranda from licensed building practitioner(s) who carried out or supervised any design work that is restricted building work
- ☐ Water supply connection Form WS1 (required where connections are 20mm dia or greater)
- ☐ Copy of MultiProof certificate, plans and specifications
- ☐ Copy of Development Contribution Notice
- ☐ Copy of Project Information Memorandum
- ☐ Copy of Certificate (form 4) attached to Project Information Memorandum
- ☐ Copy of authorisations from other CCC units or Regional Authority (eg ECan)
- ☐ Copy of Fire Design
- ☐ Any other please specify:

9. Development Contributions

Information required for assessment of levies under the CCC 2009-2019 Development Contributions Policy.

The use of land or buildings for living accommodation purposes including residential units, serviced apartments and unit/strata development but excluding travellers accommodation such as hotels, motels, hostels.

Existing: Number of residential units: *n/a* **New total (Existing plus proposed):** Number of residential units:

Has a residential unit been demolished/removed from the site? ☐ Yes ☐ No Date: / /

The following section applies when there will be more than one residential unit on the site:

Gross floor area: *m²* Gross floor area of each unit: *m²*

The following section applies where there will be two or more **attached** residential units on the site:

Impervious surface area*: *m²* Impervious surface area*: *m²*

* Impervious Surface Area shall include the area of roofs, paving and gravel.

10. Effects on Existing Council Infrastructures and Street Scenes

A separate application is required for requests to alter Councils existing infrastructural assets; removal, trimming or planting of street trees; or alteration to any built structures or vegetation plots. Approval is required to use part of legal road for construction activities. Council is responsible for managing all works on roads. Roads include unformed roads, service lanes, pedestrian walkways and alleyways. Temporary Traffic Management must be provided for all work occurred on legal roads. **For further information refer to www.ccc.govt.nz or call 941 8999 and discuss with an Asset Protection Officer.**

It is highly unlikely that private requests will be identified in the Council's Long Term Council Community Plan; for this reason the applicant will have to fund the cost of the work. The costs may include consultations with stakeholders, together with Board or Council's decision making process if required. Other Council charges may apply, e.g. vehicle crossing inspection.

(a)	Is a water connection involved with this project?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Standard 15mm. Please make a separate application on Form WS1 for connections/alterations of 20mm dia and above.		
	If Yes: <input type="checkbox"/> New Connection (see *) <input type="checkbox"/> Relocated Connection (see *) <input type="checkbox"/> Existing Connection Removed <input type="checkbox"/> Other: * If more than one, how many are required?		
	Preferred location of connection and meter (looking from the street):		
	Distance: m from <input type="checkbox"/> Left Hand Boundary or <input type="checkbox"/> Right Hand Boundary		
	Corner Sites: Street on which connection is to be installed:		
(b)	Are new connections required for:		
	[New connections are where there no existing lateral provided to the property boundary from the council systems.]		
	Stormwater: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sewer: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	If Yes: <input type="checkbox"/> Stormwater to kerb <input type="checkbox"/> Stormwater to mains	If Yes: <input type="checkbox"/> Foul water to mains	
	Do you have consent/authorisation to discharge? <input type="checkbox"/> No <input type="checkbox"/> Yes - please provide a copy		
(c)	Is a new vehicle crossing required or an existing crossing altered for this project?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(d)	Are any of the following items affected by the development?		
	Street Furniture (Bus shelter, bicycle stand, bollards, regulatory and advisory traffic sign support barriers, safety fence, retaining surface, water and waste plants, utility boxes, power poles, and/or existing objects). For electrical, gas and Telco alterations contact utility owner.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Street trees – Trimming, removal, new planting or excavation within drip line	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Landscaped areas or berms	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	If yes, has Council staff been consulted, their advise given and a report prepared by them for the community board?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Utility Surface Boxes – Water and waste, Telco	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(e)	Are you proposing to change the existing pavement type (concrete, asphaltic concrete or interlocking blocks)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(f)	Are you proposing to change the existing footpath levels?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(g)	Are you proposing to change the existing carriageway/road levels?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(h)	Are there existing traffic measures that would be affected/changed by the development?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	(e.g. Parking restrictions, regulatory signs, road narrowing, road, hump, platform, parking spaces, pedestrian refuge, traffic signals, texturised pavement, bus stop, speed limits, school crossing.)		

Other information and requirements are available from our website (www.ccc.govt.nz): Public Places Bylaw 2008, Traffic and Parking Bylaw 2008, Policies on Streets Roads and Pavements, Temporary Use of Legal Road for Construction Activities Application, Water Discharge on Road Application.
www.mfe.govt.nz/laws/standards/contaminants-in-soil

**THE PROJECT INFORMATION MEMORANDUM ONLY SECTION ENDS HERE.
ONLY COMPLETE THE BALANCE OF THIS FORM IF APPLYING FOR A BUILDING CONSENT**

11. Compliance

The building work will comply with the building code as follows:

Please ensure that any details of the listed compliance elements are shown on drawings and/or specifications.

Clause	Means of Compliance	Proposed Inspections
Which of the following clauses will be involved in the proposed work?	Refer to the relevant compliance document(s) or details of alternative solution on separate sheet	State means of inspection. Note PS4's Certification may be required where PS1 has been provided. Note: in some situations where onsite engineers supervision is proposed Council inspections may still be required.
<input checked="" type="checkbox"/> B1 Structure	<input type="checkbox"/> B1/AS2 <input checked="" type="checkbox"/> NZS3604 <input type="checkbox"/> NZS1170 <input type="checkbox"/> NZS4229 <input checked="" type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> B2 Durability	<input type="checkbox"/> B2/AS1 <input type="checkbox"/> NZS3101 <input type="checkbox"/> NZS3602 <input type="checkbox"/> NZS3604 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> C1-6 Fire	<input type="checkbox"/> Acceptable Solution <input type="checkbox"/> VM2 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> D1 Access Routes	<input type="checkbox"/> D1/AS1 <input type="checkbox"/> NZS4121 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> D2 Mechanical Installations for Access	<input type="checkbox"/> D2/AS1 <input type="checkbox"/> NZS4332 <input type="checkbox"/> EN81 <input type="checkbox"/> EN115 <input type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> E1 Surface Water	<input type="checkbox"/> E1/AS1 <input type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> E2 External Moisture	<input type="checkbox"/> E2/AS1 <input type="checkbox"/> Specific design and testing <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify] PS3: Construction to be provided
<input type="checkbox"/> E3 Internal Moisture	<input type="checkbox"/> E3/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F1 Hazardous Agents on Site	<input type="checkbox"/> F1/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F2 Hazardous Building Materials	<input type="checkbox"/> F2/AS1 <input type="checkbox"/> NZS4223 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F3 Hazardous Substances, etc.	<input type="checkbox"/> F3/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F4 Safety from Falling	<input type="checkbox"/> F4/AS1 <input type="checkbox"/> FSP Act <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F5 Construction and Demolition Hazards	<input type="checkbox"/> F5/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F6 Lighting for Emergency	<input type="checkbox"/> F6/AS1 <input type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F7 Warning Systems	<input type="checkbox"/> F7/AS1 <input type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> F8 Signs	<input type="checkbox"/> F8/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G1 Personal Hygiene	<input type="checkbox"/> G1/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G2 Laundering	<input type="checkbox"/> G2/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G3 Food Preparation and Prevention of Contamination	<input type="checkbox"/> G3/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G4 Ventilation	<input checked="" type="checkbox"/> G4/AS1 <input type="checkbox"/> AS1668.2 <input type="checkbox"/> PS: Design (PS1) <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G5 Interior Environment	<input type="checkbox"/> G5/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]

Clause	Means of Compliance	Proposed Inspections
Which of the following clauses will be involved in the proposed work?	Refer to the relevant compliance document(s) or details of alternative solution on separate sheet	State means of inspection. Note PS4's Certification may be required where PS1 has been provided. Note: in some situations where onsite engineers supervision is proposed Council inspections may still be required.
<input type="checkbox"/> G6 Airborne and Impact Sound	<input type="checkbox"/> G6/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G7 Natural Light	<input type="checkbox"/> G7/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G8 Artificial Light	<input type="checkbox"/> G8/AS1 <input type="checkbox"/> NZS6703 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G9 Electricity	<input type="checkbox"/> G9/AS1 <input type="checkbox"/> Other: [specify]	By Certification only
<input type="checkbox"/> G10 Piped Services	<input type="checkbox"/> G10/AS1 <input type="checkbox"/> NZS5261 <input type="checkbox"/> Other: [specify]	By Certification only
<input type="checkbox"/> G11 Gas as an Energy Source	<input type="checkbox"/> G11/AS1 <input type="checkbox"/> Other: [specify]	By Certification only
<input type="checkbox"/> G12 Water Supplies	<input type="checkbox"/> G12/AS1 <input type="checkbox"/> G12/AS2 <input type="checkbox"/> AS/NZS3500.1 <input type="checkbox"/> AS/NZS3500.5 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G13 Foul Water	<input type="checkbox"/> G13/AS1 <input type="checkbox"/> G13/AS2 <input type="checkbox"/> AS/NZS3500.2 <input type="checkbox"/> BS5572 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Engineer (PS: Construction review to be provided) <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G14 Industrial Liquid Waste	<input type="checkbox"/> G14/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> G15 Solid Waste	<input type="checkbox"/> G15/AS1 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]
<input type="checkbox"/> H1 Energy Efficiency	<input type="checkbox"/> H1/AS1 <input type="checkbox"/> NZS4218 <input type="checkbox"/> NZS4243 <input type="checkbox"/> ALF Design Manual <input type="checkbox"/> NZS4214 <input type="checkbox"/> Other: [specify]	<input type="checkbox"/> Council <input type="checkbox"/> Other: [specify]

PS = Producer Statement

Waivers and modifications:

Is a waiver / modification to New Zealand Building Code required?

☒ No

☐ Yes - 1) Specify parts of the code:

2) Supporting documentation must be attached.

12. Compliance Schedule (Inspection, maintenance and reporting procedures)

Specified systems are defined in the Building (specified systems, change the use, and earthquake-prone buildings) Regulations 2005.

Is there a cable car associated with this building work?

☐ Yes (a compliance schedule is required, continue completing this section of the form)

☐ No (If there are no cable car, move on to No 13)

The following specified system(s) are existing, being altered, added to, new, or removed in the course of the building work.	Existing	New	Altered	Removed	Inspection Performance standards	Maintenance performance standards	Reporting Frequency
Cable Car	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
If an existing cable car, please state the Building Warrant of Fitness Number:							

For further information on specified systems prescribed by the Building Act 2004 please refer to the Ministry of Business, Innovation and Employment Building and Housing Group's *Compliance Schedule Handbook*.

13. Restricted Building Work (provide all details where relevant)

Will the building work include any restricted building work? ☒ Yes ☐ No

If Yes, provide the following details of all Licensed building Practitioners who will be involved in carrying out or supervising the restricted building work. If these details are unknown at the time of the application, they must be supplied before the building work begins.

For more information on Licensed Building Practitioners please visit the Ministry of Business, Innovation and Employment Building and Housing Group's website at www.dbh.govt.nz/lbp. To download the Designer Certificate and Record of Work forms please visit www.dbh.govt.nz/UserFiles/File/Publications/Building/rbw/memorandum-record-of-building-work.pdf

Designer or Architect:		
Business / Name:		
Licensing Class:	Registration or LBP number:	Certificate of design work attached <input type="checkbox"/> Yes
Particular work carried out or supervised:		

Structural Engineer:		
Business / Name: <i>Fletchers EQR Tech Hub (Tim Day)</i>		
Licensing Class:	Registration or LBP number:	Certificate of design work attached <input type="checkbox"/> Yes
Particular work carried out or supervised:		

Fire Safety Engineer:		
Business / Name:		
Licensing Class:	Registration or LBP number:	Certificate of design work attached <input type="checkbox"/> Yes
Particular work carried out or supervised:		

Other eg Engineer (identify practice college):		
Business / Name:		
Licensing Class:	Registration or LBP number:	Certificate of design work attached <input type="checkbox"/> Yes
Particular work carried out or supervised:		

Owner Builder:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

Head Contractor / Site Manager:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

Builder / Carpentry work:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

Foundation work:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

Bricklaying:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

Block laying:		
Business / Name:		
Licensing Class:	LBP number:	
Particular work carried out or supervised:		

External Plastering:			
Business / Name:			
Licensing Class:		LBP number:	
Particular work carried out or supervised:			

Roofing:			
Business / Name:			
Licensing Class:		LBP number:	
Particular work carried out or supervised:			

Plumber:							
Business / Name:							
PO Box / Street Name:				Suburb / Lobby:			
City:				Post Code:			
Email:							
Phone:		Day:		Mobile:		A/H:	
						Fax:	
Licensing Class:				Registration Number:			

Drainlayer:							
Business / Name:							
PO Box / Street Name:				Suburb / Lobby:			
City:				Post Code:			
Email:							
Phone:		Day:		Mobile:		A/H:	
						Fax:	
Licensing Class:				Registration Number:			

Electrician:							
Business / Name:							
PO Box / Street Name:				Suburb / Lobby:			
City:				Post Code:			
Email:							
Phone:		Day:		Mobile:		A/H:	
						Fax:	
Licensing Class:				Registration Number:			

Gas fitter:							
Business / Name:							
PO Box / Street Name:				Suburb / Lobby:			
City:				Post Code:			
Email:							
Phone:		Day:		Mobile:		A/H:	
						Fax:	
Licensing Class:				Registration Number:			

Note: Continue on another page if necessary

14. Information

GENERAL INFORMATION:

- **Building consent fees:** The latest schedule of fees (form B-301) is available on our website or from one of our Service Centres.
- Guidance sheets and information booklets produced by the Council and the Ministry of Business, Innovation and Employment Building and Housing Group are available at all Service Centres.
- For general enquiries please phone (03) 941 8999 or email info@ccc.govt.nz

SUBMITTING AN APPLICATION:

Online Services applications:

- You can submit your application online at onlineservices.ccc.govt.nz
- You will need to register to use Online Services. You can register at onlineservices.ccc.govt.nz.

Build Express (Aconex) applications:

- As part of our Build Express service for earthquake repairs and rebuilds, the Christchurch City Council is using the Aconex online collaboration system. Aconex is used widely within the construction industry and allows organisations to share information instantly and efficiently.
- To register to use Aconex or to find out more about this service please send an email request to buildingapprovals1@ccc.govt.nz and we will reply with instructions.

An application can also be lodged via the following methods:

- Post (*additional costs apply*) your application to: Christchurch City Council, Building Approvals Office, PO Box 73013, Christchurch 8154
- Hand delivered (*additional costs apply*) to Civic Offices, 53 Hereford Street, Christchurch Central where technical assistance is available. Applications can also be dropped off and uplifted at the Service Centres listed on our website at www.ccc.govt.nz/thecouncil/contactus.aspx, however no technical assistance is available.

All applications will be checked for completeness prior to acceptance. Please ensure that you have compiled your documents carefully and completed the checksheet to avoid delays in accepting your application. If your application is incomplete it will not be accepted and the statutory processing timeframe will not start until the missing information has been provided.

Form 2A

Memorandum from licensed building practitioner: Certificate of design work
Section 30C or section 45, Building Act 2004

The building

Street address of building:

34 Carters Road, Aranui

The owner

Name: Craig Williamson

Address: 34 Carters Road

Telephone number:

Email address:

Identification of design work that is restricted building work

I carried out or supervised the following design work that is restricted building work:

Design work that is restricted building work	Description	Carried out/ supervised	Reference to plans and specifications
<i>[Tick]</i>	<i>[If appropriate, provide details of the restricted building work]</i>	<i>[Specify whether you carried out this design work or supervised someone else carrying out this design work]</i>	<i>[If appropriate, specify references]</i>

Primary structure

Foundations and subfloor framing	(x)	<i>EQ repairs</i>	(x) Carried out () Supervised	Refer S.01
Walls	()		() Carried out () Supervised	
Roof	()		() Carried out () Supervised	
Columns and beams	()		() Carried out () Supervised	
Bracing	()		() Carried out () Supervised	
Other	()		() Carried out () Supervised	

External moisture management systems

Damp proofing	()		() Carried out	
---------------	-----	--	-----------------	--

		() Supervised	
Roof cladding or roof cladding system ()		() Carried out () Supervised	
Ventilation system () (for example, subfloor or cavity)		() Carried out () Supervised	
Wall cladding or wall cladding system ()		() Carried out () Supervised	
Waterproofing ()		() Carried out () Supervised	
Other ()		() Carried out () Supervised	

Fire safety systems

Emergency warning systems, evacuation and fire service operation systems, suppression or control systems, or other ()		() Carried out () Supervised	
--	--	-----------------------------------	--

Note: The design of fire safety systems is only restricted building work when it involves small-to-medium apartment buildings as defined by the Building (Definition of Restricted Building Work) Order 2011.

Note: continue on another page if necessary.

Are waivers or modifications of the building code required? () Yes (x) No

If Yes, provide details of the waivers or modifications below:

Clause	Waiver/modification required
<i>[List relevant clause numbers of building code]</i>	<i>[Specify nature of waiver or modification of building code]</i>

Note: continue on another page if necessary.

Issued by

Name: Sam Richards of Richards Consulting Engineers Limited

LBP or registration number: #228315

The practitioner is a: () Design LBP () Registered architect (x) Chartered professional engineer

Mailing address: RD2 Darfield

Street address or registered office: 1365 Leaches Road

Phone number: Landline: 03 4201906

Mobile:

Daytime:

After hours:

Fax number:

Email address: sam.richards@rcengineers.co.nz

Website:

Declaration

I Sam Richards on Behalf of Richards Consulting Engineers Limited, LBP state that I have applied the skill and care reasonably required of a competent design professional in carrying out or supervising the Restricted Building Work described on this form and that based on this I also state that the RBW

a) complies with Building Code Clauses identified on this form

b) complies with the building code subject to any waiver or modification of the building code recorded on this form.



Signature:

Date: 20/8/2012



GARAGE

T₁

T₂

4m

4m

0.5m

34 CARTERS RD

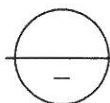
2m

T₄

2m

T₃

CARTERS ROAD



Test Location - Plan

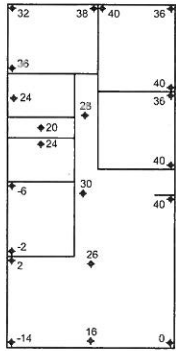
Note to Scale or Proportion

Notes:

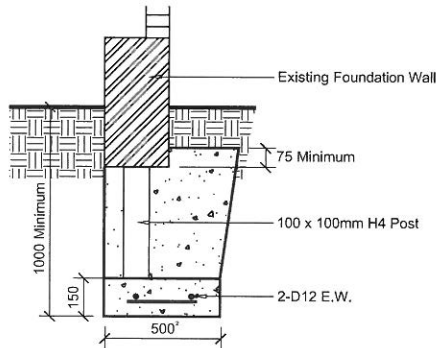
1. This plan has been produced to for the purpose of providing a reference. This is a sketch plan and is not to scale and only to approximate proportions.
2. The test locations are approximate only.

NOTES:

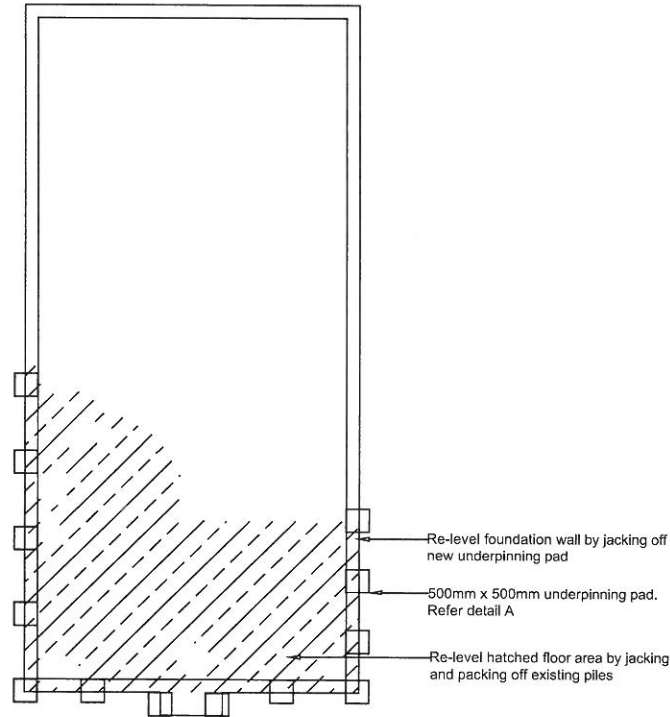
1. FLOOR LEVELS MEASURED WITH ZIP LEVEL ON 24/04/12



FLOOR LEVEL SURVEY & DAMAGE AREAS
SCALE 1:200



Section - Underpin Pile
SCALE 1:20



FOUNDATION REPAIRS PLAN
SCALE 1:100

NOTES:

1. Engineer to verify 200kPa ground bearing.
2. Foundation to be re-leveled by:
 - Jacking foundation wall to be level by concurrently raising jacks.
 - Prop foundation off pad with post and wedge tight.
 - Removes jacks and excavation with concrete.
3. Lift jacks in 3mm increments.
4. Use 20mPa concrete.

SCOPE OF WORKS

The scope of works for the foundation repairs includes:

- Re-level the internal floor area and perimeter foundation wall in areas shown on plan.
- Make good damage caused by re-levelling works.

SPECIFICATION NOTES:

1. The Contractor is expected to inspect the subfloor and foundations before submitting tender to confirm access and methodology.
2. The Contractor shall have a documented health and safety procedure for the proposed lifting methodology.
3. If at any time prior to Practical Completion, the Contractor should become aware of any signs of distress, excessive settlement or deflection, conflict of components or any other indications whatsoever of actual or potential damage to the Contract Works or any part thereof, he shall forthwith notify the Engineer, and confirm such notice in writing as soon as is practicable.
4. The Contractor shall re-level the floor by both jacking the perimeter foundation wall and jacking onto of the existing piles. All lifting shall be undertaken concurrently using a series of jacks to achieve a planar floor.
5. The piles shall then be packed with timber.
6. Levels shall be measured with a laser level to ensure finished levels meet the following tolerances before reattaching bearers to piles:
 - a. Slopes in the floor between two points greater than 2m apart shall not exceed 0.5%.
 - b. The total floor height variation shall be less than 30mm.
9. The packing up of the timber floor shall be undertaken as follows:
 - a. Packers to consist of un-cracked 100mm (minimum) H5 treated timber packers.
 - b. No more than three packers to be used per pile.
 - c. Place Damp proof course between concrete and packers and secure packers with skew nails (pre-drilled if required)
 - d. Re-use existing fixings to attach piles and foundations to bearers and plates.
 - e. New fixings shall be installed where this is not possible. New fixings shall consist of proprietary nail plates with epoxied in M10 anchors or 4mm wire stapled to timber bearers and plates.
10. Contractor shall make good any cracked floor tiles, linings, windows, flooring and trim as the result of the re-levelling including easing of doors, draws and cupboards.
11. Contractor to provide PS3 for the re-levelling and epoxy application. The PS3 should include a plan showing the final levels.

DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWINGS

Restricted Building Work Notice



Date 9-01-13
Address 34 CARTERS ROAD ARANUI
Hub TECH 22

Claim Number 2011/042891
Engineer/QS TIM DAY

SCHEDULE OF INSPECTIONS;

Purpose:

The attached scope of work includes elements of restricted building work. This work is subject to standard quality assurance processes including inspection and approval by EQR Engineers.

Elements of restricted building work;

- New section of concrete perimeter foundation
- New area of concrete slab
- New connections between floor and foundation structure

Required Engineers Inspections;

- Excavations of foundations
- Reinforcing prior to casting slab and footings
- Final inspection to confirm required levels improvement has been achieved

Upon inspection and acceptance of the RBW the engineer will issue a site instruction that all elements of the work are in order and give approval for work to continue. A PS4 certificate will be issued against claim upon satisfactory completion of the works.

Contact:

Please contact Fletchers EQR Technical Hub on **03 741 8545** to arrange for an inspection by an engineer. 48 hours notice is required for all inspections.

Issued By 

Tim Day
Senior Structural Engineer



NEW ZEALAND INSTITUTE OF
ARCHITECTS
INCORPORATED



Building Code Clause(s)

PRODUCER STATEMENT – PS1 – DESIGN

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

ISSUED BY: Richards Consulting Engineers Limited
(Design Firm)

TO: The Fletcher Construction Company - EQR
(Owner/Developer)

TO BE SUPPLIED TO: Christchurch City Council
(Building Consent Authority)

IN RESPECT OF: Foundation Repair
(Description of Building Work)

AT: 34 Carters Road
(Address)

LOT DP SO B1

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

Refer attached structural report/assessment services in respect of the requirements of
Clause(s) B1 (Extent of Engagement)

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 Department of Building & Housing B1/VM1 & B1/VM4
(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

Refer attached structural report/assessment and numbered Refer attached structural report/assessment

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:

- (i) Site verification of the following design assumptions Refer attached structural report/assessment
- (ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds 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.

I, Sam Richards am: ☒ CPEng 228315 #
(Name of Design Professional)

☐ Reg Arch #

I am a Member of: ☒ IPENZ ☐ NZIA and hold the following qualifications: Be(hons)

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 ☐ YES ☒ NO

SIGNED BY Sam Richards ON BEHALF OF Richards Consulting Engineers Limited
(Design Firm)

Date (signature)

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.

GUIDANCE ON USE OF PRODUCER STATEMENTS

Producer statements were first introduced with the Building Act 1992. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suite of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

PS1 Design	Intended for use by a suitably qualified independent design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;
PS2 Design Review	Intended for use by a suitably qualified independent design professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;
PS3 Construction	Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2003 ¹ or Schedules E1/E2 of NZIA's SCC 2007 ²
PS4 Construction Review	Intended for use by a suitably qualified independent design professional who undertakes construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACENZ, IPENZ and NZIA to interpret the Producer Statement.

Competence of Design Professional

This statement is made by a Design Firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence-based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ) or the New Zealand Institute of Architects (NZIA), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent design professional".

* Professional Indemnity Insurance

As part of membership requirements, ACENZ requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI insurance minimum stated on the front of this form reflects standard, small projects. If the parties deem this inappropriate for large projects the minimum may be up to \$500,000.

Professional Services during Construction Phase

There are several levels of service which a Design Firm may provide during the construction phase of a project (CM1-CM5)³ (OL1-OL4)². The Building Consent Authority is encouraged to require that the service to be provided by the Design Firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Refer Also:

- ¹ *Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2003*
- ² *NZIA Standard Conditions of Contract SCC 2007 (1st edition)*
- ³ *Guideline on the Briefing & Engagement for Consulting Engineering Services (ACENZ/IPENZ 2004)*

www.acenz.org.nz
www.ipenz.org.nz
www.nzia.co.nz



Design underpinning pool

$G \Rightarrow$ 1.6m max spans

foundation wall	$= 0.5 \times 0.25 \times 24 \times 1.6m = 4.8$
Timber wall	$= 2.4m \times 0.3kPa \times 1.6m = 1.2$
WATER	$= 2.7m \times 0.07 \times 17 \times 1.6m = 5.1$
roof	$= 3.0m \times 0.3kPa \times 1.6m = 1.4$
Flow	$= 1.2m \times 0.4kPa \times 1.6m = 0.8$
	<u>13.3kN</u>

$Q \Rightarrow$ Flow $= 1.2m \times 1.5kPa \times 1.6m = 2.9$

$1.2G + 1.5Q = 28.3kN$

Check bearing on 450x450 pile

$q^* = \frac{28.3}{0.45 \times 0.45} = 139kPa$

$\phi Q = 0.8 \times 200kPa = 120kPa \not\geq 139kPa$

Try 500x500 pile

$q^* = 113kPa \leq 120kPa$ 0.11

Use 500x500 pile to support foundation wall

Project: 7152

23 August 2012



Fletchers EQR – Structural Investigation

PHONE 03 420 1906
EMAIL rce@rcengineers.co.nz
RD2 Darfield 7572

Property Address: 34 Carters Road, Aranui
Claim Number: CLM/2011/042891
EQR Hub: Aranui
Inspector: Sam Richards and Niall Thomson
Test Date: 24 April 2012
Project Supervisor: Noel Ryan
Report Type: Foundation Assessment & Site Soils Investigation

1.0 SUMMARY

With the exception of the settlement of the north-west corner of the house, the structure has suffered minimal damage from the recent Canterbury earthquake sequence.

To remedy the settlement of the foundations, we recommend that the foundations be re-levelled.

Based on previous jobs undertaken for Fletchers EQR, we understand that foundation wall releveling requires a Building Consent.

2.0 RECOMMENDED STRUCTURAL REPAIR

To repair the house foundations, we recommend that the following works be undertaken (the following works are also described on the attached structural drawings). Note that this is only a partial scope of work and it is expected that the following scope will be included in the full scope of repair work:

	PRE-CONSTRUCTION
1	Prepare documentation and apply for a Building Consent for the foundation releveling.
	CONSTRUCTION
2	Install jacking pads and jack off the existing concrete foundation wall back to level.
3	Jack and pack internal piles.
4	There is a section of veneer on the eastern side of the main entry door that has suffered in-plane displacement of approximately 4-5mm. We recommend that this be replaced if it is practicable to obtain matching bricks, or the bricks be realigned and the mortar joint filled with epoxy injection resin and then repointed to match the existing.



5	Make good damage to walls, landscaping and external concrete patios from re-levelling works.
QUALITY CONTROL	
6	<p>We envisage that the following inspections will be required as part of the works:</p> <ul style="list-style-type: none"> • Inspection of ground bearing below jacking pads by structural engineer. • Inspection of insitu pile reinforcing before concrete pour by structural engineer. • Inspection of jacking and packing and connections by Christchurch City Council building inspector.
7	Contractor to provide a PS3 for the relevelling. The Contractor should also provide a plan showing the finished floor levels.

Note these are structural repairs and non structural repairs should be referred to the EQR scope of work.

3.0 ASSESSMENT SCOPE

Richards Consulting Engineers Limited has been requested by Noel Ryan on behalf of the Aranui EQR Hub to assess the house and garage structure on the property and advise on appropriate structural repairs. The work has been undertaken in accordance with our agreement with Fletchers Construction Company Limited.

The scope of the assessment included:

- A visual walk around and inspection of the interior and exterior of the building. The sub-floor was inspected from the sub-floor hatch. The inspection did not involve any invasive testing.
- We undertook a measurement of the floor heights using a zip level.
- Determine site sub-soil properties.
- Advising of appropriate foundation strengthening and repairs.
- The inspection was undertaken at a point in time (24 April 2012) and if subsequent moderate aftershocks are experienced then further damage may occur which will require a re-assessment.

4.0 STRUCTURAL DESCRIPTION

There is a single storey house located on the property and a double garage located on the south-west corner.

The primary structure of the house consists of timber framing founded on a concrete perimeter foundation wall and internal concrete piles. The house is clad in a light corrugated iron roof and a brick veneer. There is a chimney located on the western edge of the western wall of the house (refer Photo 1).

The double garage is constructed with concrete block walls and light timber framed roof founded on a concrete slab. It appears that a slab from an historic single garage has been used in the construction of the double garage with a cold form join in the slab along the interface.



Photo 1 – Southern elevation of house

5.0 GROUND AND STRUCTURAL DAMAGE

We understand there was no liquefaction on site. However, there was liquefaction on the street adjacent to the property. We did not observe any significant damage to the ground. It was noted that there was differential settlement between the path and the house foundations in the north-west corner.

34 Carters Road is classified by CERA as being in the Technical Category 2 Zone (TC2 – yellow). TC2 is defined as having minor to moderate land damage from liquefaction being possible in future significant earthquakes. CERA considers the Department of Building and Housing document “Revised guidance on the repair of residential houses following the Canterbury earthquake sequence – November 2011” to be suitable for foundation repairs and new foundations on this site.

We inspected the primary of the house and did not observe any significant damage from the recent earthquakes. The chimney is squat and protrudes from the roofline a small distance - 200-300mm - and no damage to the bricks was observed with the exception of the collapse of the fire bricks (non structural) in the hearth.

The zip level survey showed that the floors are generally level with a settlement towards the north-west corner. There is a floor height variation in the lounge and kitchen of 54mm and floor slopes of up to 0.95%. Due to the evidence of differential movement between the path and foundation wall on the northwest corner (the painted foundation wall is below the level of the adjacent path) and the fact that the north gutter now slopes the wrong way, it is clear that the settlement of the house is due to the recent earthquake effects.

The Department of Building & Housing guideline document recommends that Type B foundations (concrete perimeter wall and internal piles) be releveled when the floor height variation exceeds

50mm or the floor slope exceeds 0.5%. Therefore, based on the DBH guidance and the settlement observed, we recommend that the west portion of the house be releveled (refer attached structural drawing S.01). We understand from contractors that it is pragmatic to lift a foundation wall with a brick veneer in place. We have therefore proposed a jacking methodology and underpinning piles on the attached structural drawing.

There are a number of areas in the brick veneer where there is evidence of stepped cracking due to settlement. In one area between the bedrooms on the southern wall, the upper section of brick panelling has displaced in plane approximately 4-5mm to the east. While we consider the wall to be stable, the mortar joint has been compromised. If it is possible to realign the bricks, we recommend injecting epoxy resin in between the horizontal cracked brick interface. This interface would then be repointed to match the existing. However, if it is not considered practicable by the contractor, we recommend that the upper 1.2m of the brick be removed and replaced with matching bricks.

The garage slab shows a differential settlement between the historical slab and new slab, estimated to be approximately 4-5mm vertical step which also shows in the garage door. We do not consider this affects the structural performance of the garage and recommend a cosmetic repair such as grinding and localised FLC in this area. At the time of the inspection there was a significant amount of storage items in the garage and we were unable to inspect the floor or assess the levels apart from along the door threshold.

6.0 BUILDING CONSENT REQUIREMENTS

We understand from previous job working for Fletchers Construction Company EQR that where a foundation wall is to be jacked and underpinned, that this work should be included in a Building Consent application.

7.0 SOILS SUMMARY

The site is mapped as Aranui aged, Christchurch formation dominantly sand of fixed and semi-fixed dunes and beaches.

Aerial imagery from 26 February 2011 shows evidence of liquefaction on the street adjacent to the property.

The investigations consisted of a visual walkover inspection of the site, four scala penetrometer probes and an auger test hole. The approximate test locations are shown on the attached site plan.

The Scala tests show that 200kPa geotechnical ultimate bearing capacity is not encountered until a depth of 1.0m below ground level.

The hand auger test showed that the subsoils consist predominantly of loose sand becoming medium dense at 1.4m depth. The water table was encountered at 1.6m depth. The test was terminated at 2.4 metres depth due to it not being possible to extract a sample due to the saturated material.

While it is desirable to extend the testing down to 4.0 metres depth, due to the minimal foundation work proposed we consider it pragmatic to rely on these results for the foundation design.

In summary we recommend any new foundations be founded at a minimum of 1.0m depth on 200kPa bearing.

8.0 DISCLAIMER

The recommendations in this report are based on our visual site walkover and the scala penetrometer investigations. Assumptions have been made about the continuity of subsoil properties between the test holes; due to the inherent variability of sub-soils this assumption cannot be guaranteed.

The report has been prepared for The Fletcher Construction Company Limited as agents for EQR. It is expected that the Christchurch City Council will also rely on this report. Other parties rely on this report at their own risk.

If there are any questions on this assessment please contact the writer.

Prepared by



Sam Richards
CPEng (Civil & Structural)

Attachment: Test location plan
Soil results
Structural Drawing S.01
Producer Statement (PS1-design)
Project memorandum certificate



GARAGE

T₁

T₂

4m

4m

0.5m

34 CARTERS RD

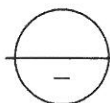
2m

T₄

2m

T₃

CARTERS ROAD



Test Location - Plan

Note to Scale or Proportion

Notes:

1. This plan has been produced to for the purpose of providing a reference. This is a sketch plan and is not to scale and only to approximate proportions.
2. The test locations are approximate only.

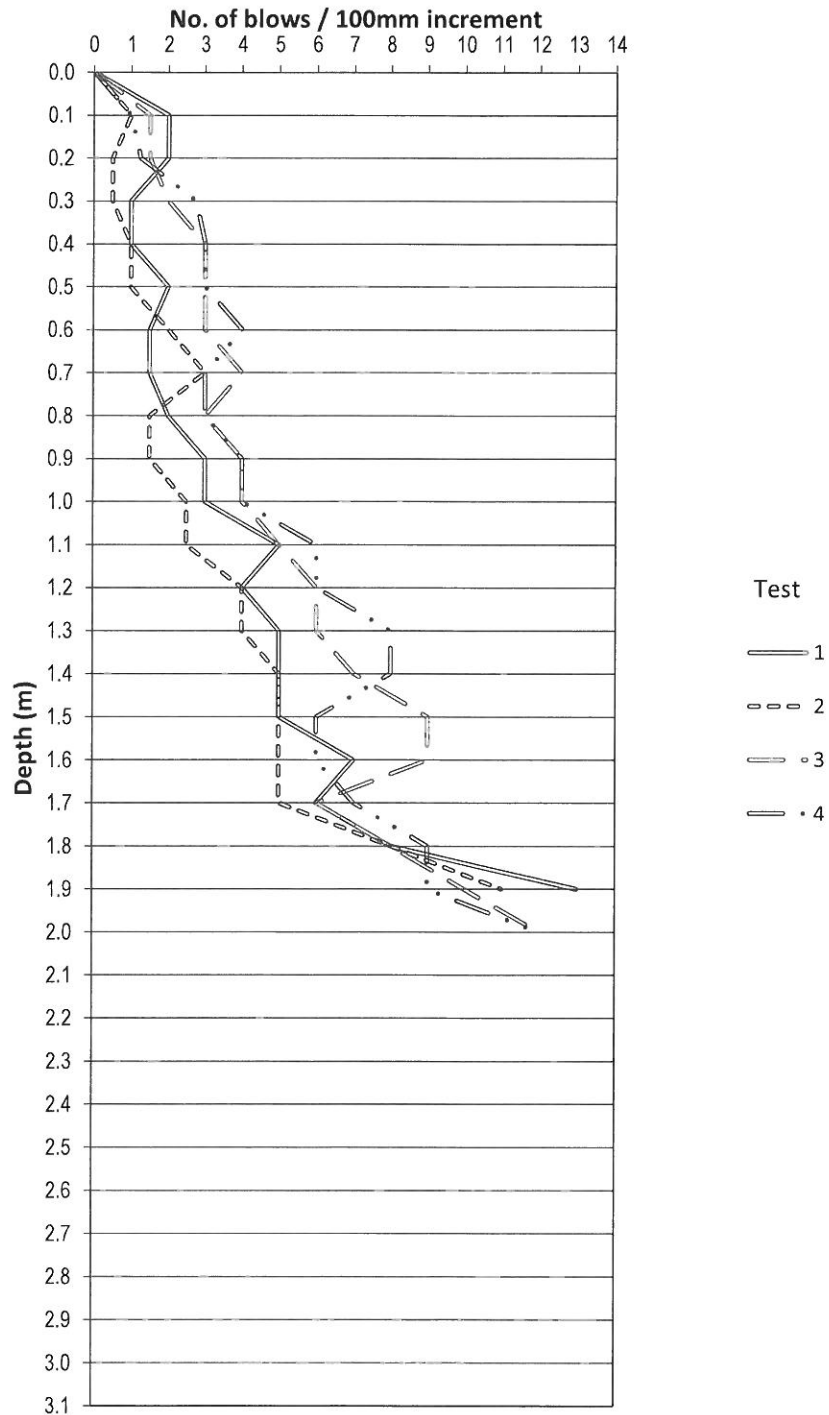
SITE SOILS INVESTIGATION

Project No.: 7152
Project: Fletchers EQC
Address: 34 Carters Road



Date tested: 13 April 2012

Combined Site Soil Penetrometer Test results



Test method used: NZS 4402:1988 Test 6.5.2

SITE SOILS INVESTIGATION

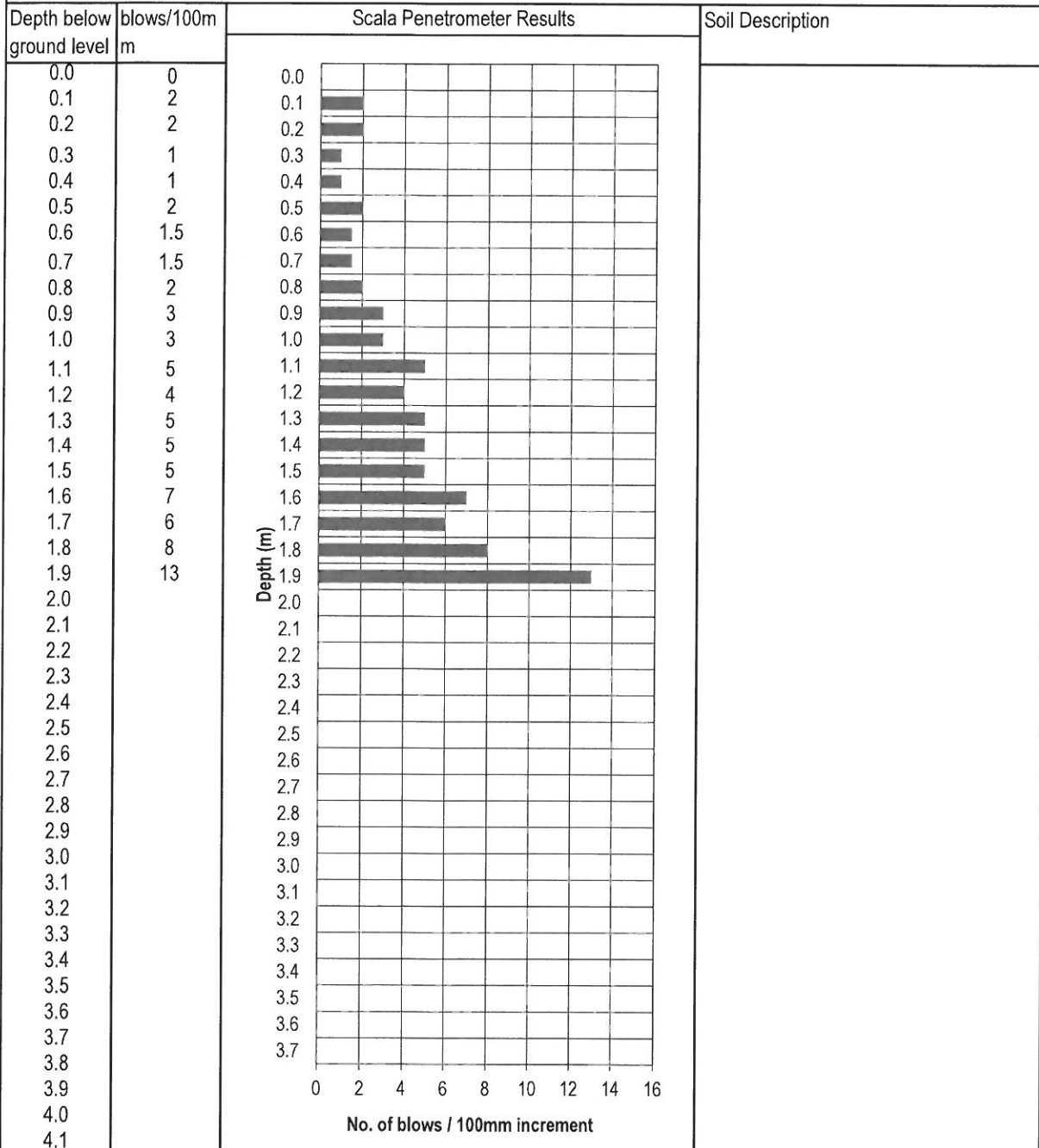
Project No.: 7152
Project: Fletchers EQC
Address: 34 Carters Road




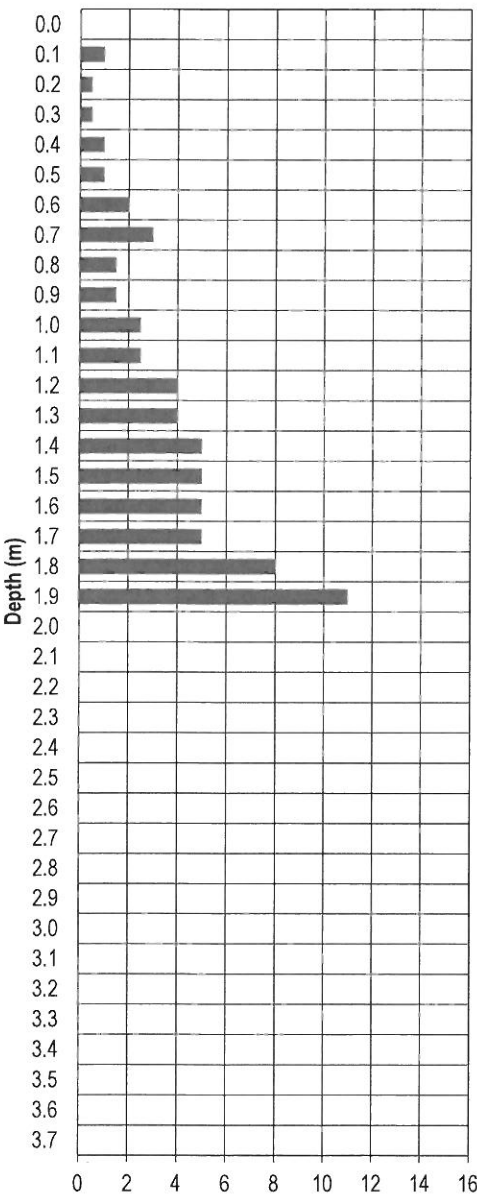
Date tested: 13 April 2012

Test ID: 1

Notes:



Test method used: NZS 4402:1988 Test 6.5.2

SITE SOILS INVESTIGATION			 RICHARDS CONSULTING ENGINEERS
Project No.: 7152			
Project: Fletchers EQC			
Address: 34 Carters Road			
Date tested: 13 April 2012		Test ID: 2	
Notes:			
Depth below ground level	blows/100m m	Scala Penetrometer Results	Soil Description
0.0	0		(200mm) Brown, CLAY, Homogeneous very Loose, Moist
0.1	1		
0.2	0.5		
0.3	0.5		
0.4	1		
0.5	1		
0.6	2		
0.7	3		
0.8	1.5		
0.9	1.5		
1.0	2.5		
1.1	2.5		
1.2	4		
1.3	4		
1.4	5		
1.5	5		
1.6	5		
1.7	5		
1.8	8		
1.9	11		
2.0			
2.1			
2.2			
2.3			
2.4			
2.5			
2.6			
2.7			
2.8			
2.9			
3.0			
3.1			
3.2			
3.3			
3.4			
3.5			
3.6			
3.7			
3.8			
3.9			
4.0			
4.1			
Test method used: NZS 4402:1988 Test 6.5.2			

SITE SOILS INVESTIGATION

Project No.: 7152

Project: Fletchers EQC

Address: 34 Carters Road



Date tested: 13 April 2012

Test ID: 3

Notes:

Depth below ground level	blows/100m	Scala Penetrometer Results	Soil Description
0.0	0	0.0	
0.1	1.5	0.1	
0.2	1.5	0.2	
0.3	2	0.3	
0.4	3	0.4	
0.5	3	0.5	
0.6	3	0.6	
0.7	4	0.7	
0.8	3	0.8	
0.9	4	0.9	
1.0	4	1.0	
1.1	5	1.1	
1.2	6	1.2	
1.3	6	1.3	
1.4	7	1.4	
1.5	9	1.5	
1.6	9	1.6	
1.7	6	1.7	
1.8	8	1.8	
1.9	10	1.9	
2.0	12	2.0	
2.1		2.1	
2.2		2.2	
2.3		2.3	
2.4		2.4	
2.5		2.5	
2.6		2.6	
2.7		2.7	
2.8		2.8	
2.9		2.9	
3.0		3.0	
3.1		3.1	
3.2		3.2	
3.3		3.3	
3.4		3.4	
3.5		3.5	
3.6		3.6	
3.7		3.7	
3.8			
3.9			
4.0			
4.1			

Test method used: NZS 4402:1988 Test 6.5.2

SITE SOILS INVESTIGATION

Project No.: 7152
Project: Fletchers EQC
Address: 34 Carters Road



Date tested: 13 April 2012

Test ID: 4

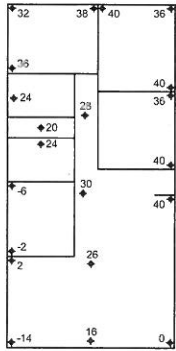
Notes:

Depth below ground level	blows/100m	Scala Penetrometer Results	Soil Description
0.0	0	0.0	
0.1	1	0.1	
0.2	1.25	0.2	
0.3	2.75	0.3	
0.4	3	0.4	
0.5	3	0.5	
0.6	4	0.6	
0.7	3	0.7	
0.8	3	0.8	
0.9	4	0.9	
1.0	4	1.0	
1.1	6	1.1	
1.2	6	1.2	
1.3	8	1.3	
1.4	8	1.4	
1.5	6	1.5	
1.6	6	1.6	
1.7	7	1.7	
1.8	9	1.8	
1.9	9	1.9	
2.0	12	2.0	
2.1		2.1	
2.2		2.2	
2.3		2.3	
2.4		2.4	
2.5		2.5	
2.6		2.6	
2.7		2.7	
2.8		2.8	
2.9		2.9	
3.0		3.0	
3.1		3.1	
3.2		3.2	
3.3		3.3	
3.4		3.4	
3.5		3.5	
3.6		3.6	
3.7		3.7	
3.8			
3.9			
4.0			
4.1			

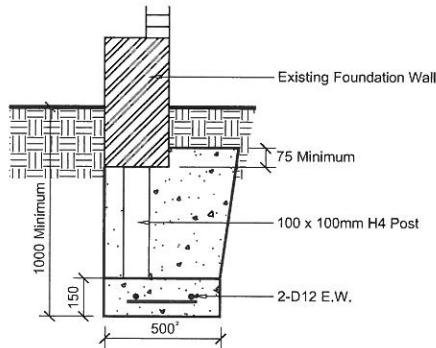
Test method used: NZS 4402:1988 Test 6.5.2

NOTES:

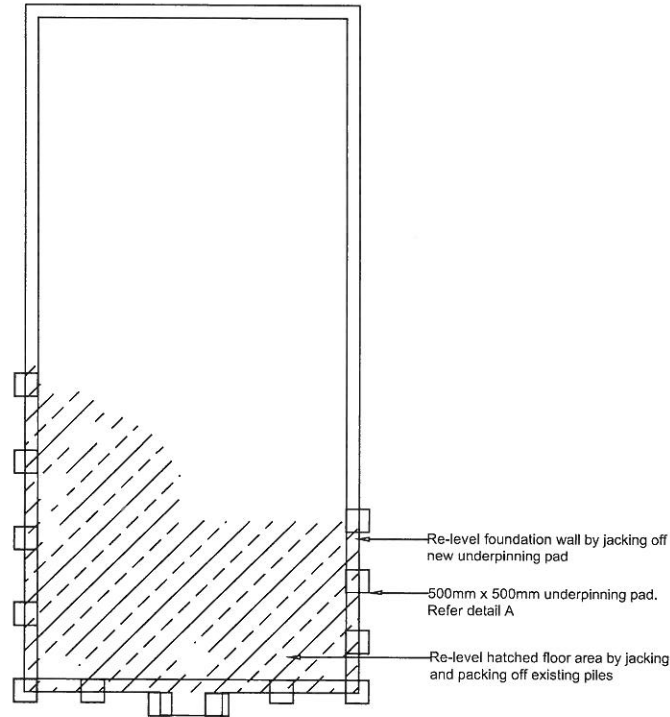
1. FLOOR LEVELS MEASURED WITH ZIP LEVEL ON 24/04/12



FLOOR LEVEL SURVEY & DAMAGE AREAS
SCALE 1:200



Section - Underpin Pile
SCALE 1:20



FOUNDATION REPAIRS PLAN
SCALE 1:100

NOTES:

1. Engineer to verify 200kPa ground bearing.
2. Foundation to be re-leveled by:
 - Jacking foundation wall to be level by concurrently raising jacks.
 - Prop foundation off pad with post and wedge tight.
 - Removes jacks and excavation with concrete.
3. Lift jacks in 3mm increments.
4. Use 20mPa concrete.

SCOPE OF WORKS

The scope of works for the foundation repairs includes:

- Re-level the internal floor area and perimeter foundation wall in areas shown on plan.
- Make good damage caused by re-levelling works.

SPECIFICATION NOTES:

1. The Contractor is expected to inspect the subfloor and foundations before submitting tender to confirm access and methodology.
2. The Contractor shall have a documented health and safety procedure for the proposed lifting methodology.
3. If at any time prior to Practical Completion, the Contractor should become aware of any signs of distress, excessive settlement or deflection, conflict of components or any other indications whatsoever of actual or potential damage to the Contract Works or any part thereof, he shall forthwith notify the Engineer, and confirm such notice in writing as soon as is practicable.
4. The Contractor shall re-level the floor by both jacking the perimeter foundation wall and jacking onto of the existing piles. All lifting shall be undertaken concurrently using a series of jacks to achieve a planar floor.
5. The piles shall then be packed with timber.
6. Levels shall be measured with a laser level to ensure finished levels meet the following tolerances before reattaching bearers to piles:
 - a. Slopes in the floor between two points greater than 2m apart shall not exceed 0.5%.
 - b. The total floor height variation shall be less than 30mm.
9. The packing up of the timber floor shall be undertaken as follows:
 - a. Packers to consist of un-cracked 100mm (minimum) H5 treated timber packers.
 - b. No more than three packers to be used per pile.
 - c. Place Damp proof course between concrete and packers and secure packers with skew nails (pre-drilled if required)
 - d. Re-use existing fixings to attach piles and foundations to bearers and plates.
 - e. New fixings shall be installed where this is not possible. New fixings shall consist of proprietary nail plates with epoxied in M10 anchors or 4mm wire stapled to timber bearers and plates.
10. Contractor shall make good any cracked floor tiles, linings, windows, flooring and trim as the result of the re-levelling including easing of doors, draws and cupboards.
11. Contractor to provide PS3 for the re-levelling and epoxy application. The PS3 should include a plan showing the final levels.

DRAWING IS TO BE READ IN CONJUNCTION WITH ARCHITECT'S DRAWINGS

SEDIMENT CONTROL

Sediment control to be controlled where foundations or roofing drainage are to be removed.

All sediment control to be compliant to NZBC-E1.

Straw-bales to be laid to all boundaries where run off may occur. Straw-bales to be placed in 200mm deep trench, tied together and anchored to ground with stakes.

A stabilised pad of aggregate on a woven geotextile base located at any point where traffic will be entering or leaving a construction site.

Clear the entrance and exit area of all vegetation, roots and other unsuitable material and properly grade it.

Lay woven geotextile; pin down edges and overlap joins;

Provide drainage to carry runoff from the Stabilised Construction Entrance to a sediment control measure;

Place aggregate to the specifications below and smooth it.

Surface Water Drainage work where any drainage pipes exist to be temporary disconnected and reconnected as soon as practical.

Contractor to oversee all sediment control.

Surplus Gravel to be contained behind sediment fences.