



KENSWAY

21st February 2018

Property Projects Ltd
2/225 High Street
Christchurch

Attn: Gareth Webber

RE: 46 Charles St, Christchurch 8011

Dear Gareth,

I can confirm that all items relating to the repairs at the above address have been completed and carried in accordance with the Building Code.

As this work has been carried out under an exemption for consent and in accordance with Part 3: Building work for which design is carried out or reviewed by a chartered professional engineer; These engineers must be registered with the Institution of Professional Engineers New Zealand (IPENZ).

No consent was required.

Cephas Rock the design Engineer has provided a repair strategy and CM2 monitoring.

Building Act Exemption inc PS1
PS4 has been received from Cephas Rock
PS3 has been received from A & A Coombes

Yours sincerely,

KENSWAY PROPERTY CONSULTANTS (SOUTHERN) LIMITED

Karl Gaskell
General Manager
karl@kensway.co.nz

7 February 2018

Cephas Rock Limited
PO Box 37174
Halswell
Christchurch 8245

Dear Sir/Madam

Building Act exemption: BCN/2018/608
46 Charles Street Waltham
Foundation Repairs

Building Act exemption approved

We have considered your application, under Schedule 1, clause 2(a) of the Building Act 2004, for exemption from the requirement to obtain building consent.

We are satisfied that the completed work is likely to comply with the building code, provided it is carried out in accordance with your proposal. Therefore, your application has been approved.

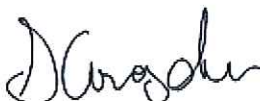
You can download stamped copies of your proposal documents from onlineservices.ccc.govt.nz. Please forward copies to the building owner.

Advice

- All building work must comply with the Building Act, building code, and all other applicable laws.
- This letter does not provide any approval that may be required, other than that stated.
- This approval is valid if the work is completed within two years of **7 February 2018**.

Please ensure all quality assurance procedures offered in the application are followed, including inspections and written sign off via producer statements and documentation provided to council to put on the property file.

Yours sincerely



Sarah Congdon
Building Control Officer Level 2
Building Certification & Exemption Team
Phone: 941 6776
Email: sarah.congdon@ccc.govt.nz

02 November 2017

Gareth Webber c/o- Karl Gaskell
karl@kensway.co.nz

Dear Gareth,



Job No: 17-536

RE: STRUCTURAL ASSESSMENT – 46 CHARLES STREET, WALTHAM, CHRISTCHURCH 8011.

We confirm that a structural assessment was carried out by Cephas Rock Limited on 26 October 2017 at the above property. Our assessment included a visual inspection of the exterior and interior of the building to determine the extent of any structural damage caused by the earthquakes from September 2010 up to the inspection date.

BUILDING DESCRIPTION

The building is a single storey timber-framed dwelling, situated on a flat site to the southwest of Charles Street in Waltham. The dwelling is believed to have been originally built in approximately 1950 and it has been relocated on above address in 1999. It has a suspended timber floor founded upon timber piles with concrete block perimeter foundation walls. The dwelling exterior is clad with using Summer hill stone veneer, and the roof is clad with heavy weight concrete tiles. The attached garage has concrete masonry block wall and its floor has slab on grade foundation with perimeter foundation walls.

The site is classified as “Green Zone, Technical Category 3, blue” area as given by the Canterbury Earthquake Recovery Authority (CERA). This means that moderate to significant land damage from liquefaction is possible in future significant earthquakes.

EQC liquefaction and lateral spreading observations show “no observation” in the area after September 2010 and “no lateral spreading but minor to moderate quantities of ejected material” in the area after February 2011 earthquake event. No site specific geotechnical investigation was undertaken as part of this assessment.

Council documents were received from the client and sighted as part of this assessment.

REPAIRS / OBSERVATIONS

Exterior of dwelling

Moderate mortar step cracks to the Summer hill stone veneer at southeast corner of the dwelling were observed. Except this, minor mortar step cracks to the Summer hill stone veneer were identified at a few locations around the dwelling. A single moderate separation in between concrete blocks of perimeter foundation wall was observed at southeast side of the building.

Interior

No apparent damages to the dwelling wall lining and ceiling were identified during our inspection. However, minor vertical sheet separations at corner of openings were observed at attached garage wall linings.

Floor

A floor level survey using Zip-Level Pro-2000 instrument of a typical accuracy of $\pm 3\text{mm}$ was carried out during the inspection and is presented in the Floor Level Plan attached in this report. It should be noted that the purpose of the floor level survey is to provide assistance in determining possible structural damage of the building and therefore should be treated as indicative only. Where a high-level dependence and an accurate and credible presentation of the survey information are required, a registered professional surveyor should be engaged to carry out the survey.

The overall floor level variations were measured to be approximately 70mm for dwelling timber floor and 86mm for garage concrete floor. The both floors level variations exceed 50mm tolerance for floor variation indicated in the MBIE Guidelines. The dwelling floor slopes are generally sloping from east to west of the dwelling with a few locations noticeably exceeding the local slope variation 1:200 (0.5%) MBIE tolerance. The garage concrete floor slopes are generally sloping from east to west of the garage with exceeding the local slope variation 1:200 (0.5%) MBIE tolerance. Hence, the dwelling timber floor and garage concrete floor fall within the “foundation re-level indicated” category.

Subfloor Space

Access to subfloor was limited at the time of inspection. The subfloors had a standard timber floor on timber piles with perimeter concrete block wall. There were steel strap connections identified at the pile-to-bearer interface. The timber internal piles appear to have performed well and have retained its structural integrity. No piles were observed to be leaning, and appeared to provide adequate support for the floor above.

Roof Space

A visual assessment of the roof was carried out from the exterior of the building. The roof appears to have no structural damages, including deflection of the ridge, valley and hip lines. Roof cavity was accessed through an access panel and visibility was limited through this. No apparent damages were observed to timber members and connections.

CONCLUSIONS

It was observed that the building sustained moderate structural damage. We consider that the current state of the buildings is able to provide sufficient structural integrity for immediate use. However, we recommend the following structural repairs to the dwelling for continued occupancy and tenancy:

- Timber floor re-levelling by jacking and packing internal piles as practicably level as possible. Adequate fixing of pile/packing to bearer connections and packing between foundation and superstructure elements following jacking and packing repairs should be installed as per MBIE guidelines. Our recommended target tolerances are within 25mm overall floor level variation with local floor slopes not exceeding 1:200. Replacement of

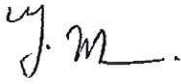
piles to be recommended if requiring more than 100mm packing to re-level or pile loose on footings or pile more than 15mm out-of-plumb.

- (Post re-level) Inspection of roof structure to be carried out by suitable qualified builder. Satisfactory evidences of roof structural integrity (Photos) to be provided to structural engineer for their review.
- As Summerhill stones veneer was moderately damaged, it is recommended to take them down and re-clad with appropriate fixing to timber walls where required.
- Rake out mortar along the minor crack lines of dwelling Summer hill stones veneer, and repointing with appropriate fixing to timber walls where required. Locally remove broken bricks and replace with new bricks.
- Rake out mortar along the moderate crack or missing mortar of perimeter foundation block wall, and repointing with appropriate fixing to timber walls where required. Locally remove broken bricks and replace with new bricks.
- Floor levelling compound may be used for garage concrete floor to re-level within MBIE tolerance with following of repair strategies recommended in our sketch attached (Refer to SK2) to the garage concrete floor. **NOTE:** Prior to proceeding repair works to garage concrete floor, inspection for neighbouring attached garage is recommended to confirm the both garage repair methodologies.
- (Post re-level) Where diagonal cracks from corners of openings are less than 50mm long and cracks or separations are typically along sheet joints, re-stop to wall (Fibafuse) and ceiling plasterboard.
- (Post re-level) Where diagonal cracks from corners of openings are exceeding 50mm length and panel fractured, replacement of wall and ceiling plasterboard with equivalent bracing elements (GIB Braceline) is recommended. Installation of new fasteners to be in a bracing pattern around the plasterboard sheet perimeter in accordance with manufacturer's guidelines.

Please refer to the MBIE guidelines and manufacturer's specifications for detailed repair methodologies. The suitability for occupancy must be re-assessed by a structural engineer after any future moderate earthquakes.

Inspection and Report by,

Checked and verified by,



Gulendrarajah Nerooshan

Structural Engineer
BEng (Hons) MEngNZ



Joshua Wong

Structural Engineer / Director
BEng (Hons) CEngNZ IntPE (NZ)

Disclaimer:

This report has been prepared on behalf of and for the exclusive use of Gareth Webber c/o- Karl Gaskell, and is subject to and issued in accordance with the provisions of the contract between Cephas Rock Limited and Gareth Webber c/o- Karl Gaskell. Cephas Rock accepts no liability or responsibility, whatsoever, for or in respect of any use or reliance upon this report by any third party.

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The above report does not constitute our confirmation that the building is “safe”, “earthquake resistant” or similar. We have not checked the level of actual structural compliance with the current Building Code, nor assessed the level of actual past seismic activity at the particular site on which the building is situated. We have carried out visual non-destructive inspection of readily accessible areas and have used our professional judgement to assess the extent of structural earthquake damage (if any) sustained from 4 September 2010 to date. We are unable to predict the severity of any future seismic activity on your site, and how the building and site may perform in such an event, or series of events. If engaged to do so, we can carry out further structural investigation (which may include invasive methods) and desktop analysis work to ascertain level of structural compliance of the building in its current state, and identify structural vulnerabilities (if any) that may compromise the building’s structural performance in the future.

The scope of any foundation re-leveling is to return the building foundations to as close to as reasonably practicable to its structural pre-earthquake condition (i.e. NZBC Section 112 repair). This clause states that the repair strategy does not have to improve the overall performance of the structure; rather it cannot be made any worse than it was prior to the earthquake sequence. The re-leveling of the foundations will not lead to any “betterment” of the existing foundation structure. Similar performance is likely to be observed, should we experience a further significant seismic event.

Reference

- Canterbury Earthquake Recovery Authority. My Property web page for land zone and technical category. <http://cera.govt.nz/my-property> (data retrieved dated 02 November 2017).
- Canterbury Geotechnical Database. Earthquake Commission (EQC) Liquefaction interpreted from aerial photography. (data supplied by Tonkin and Taylor for Canterbury Earthquake Recovery Authority)
- Google Map <https://maps.google.co.nz/>
- Ministry of Business, Innovation and Employment (MBIE). (2012). Repairing and rebuilding of houses affected by the Canterbury earthquakes – Technical Guidance (Part A). <http://www.dbh.govt.nz/guidance-on-repairs-after-earthquake> Wellington, New Zealand.
- QV.co.nz. (2017). Property Details for 46 Charles Street, Waltham, Christchurch 8011 <https://www.qv.co.nz/property/2-19-woodgrove-avenue-north-new-brighton-christchurch-8083/1257532>

Appendix



Photo 1. 46 Charles Street, Waltham, Christchurch (Google Maps).



Photo 2. Northwest elevation.



Photo 3. EQC liquefaction and lateral spreading observations show “no observation” in the area after September 2010 and “no lateral spreading but minor to moderate quantities of ejected material” in the area after February 2011 earthquake event.

Ground Surface Observations

- No observed ground cracking or ejected liquefied material
- Minor ground cracking but no observed ejected liquefied material
- No lateral spreading but minor to moderate quantities of ejected material
- No lateral spreading but large quantities of ejected material
- Moderate to major lateral spreading; ejected material often observed
- Severe lateral spreading; ejected material often observed
- No observations (uncoloured)



Photo 4. Moderate mortar step cracks to the Summer hill stone veneer at south east corner of the dwelling



Photo 5. Moderate separation in between the concrete blocks of perimeter foundation wall.



Photo 6. Minor mortar step cracks around the dwelling.



Photo 7. Dwelling wall lining



Photo 8. Dwelling wall lining and ceiling



Photo 9. Minor vertical sheet separation at corner of opening to garage wall lining.



Photo 10. Garage concrete block wall from interior view.



Photo 11. Sub floor space (View 1)



Photo 12. Sub floor space (View 2)



Photo 13. Sub floor space (View 3)



Photo 14. Roof space (View1)



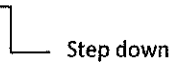
Photo 15. Roof space (View2)



Note :

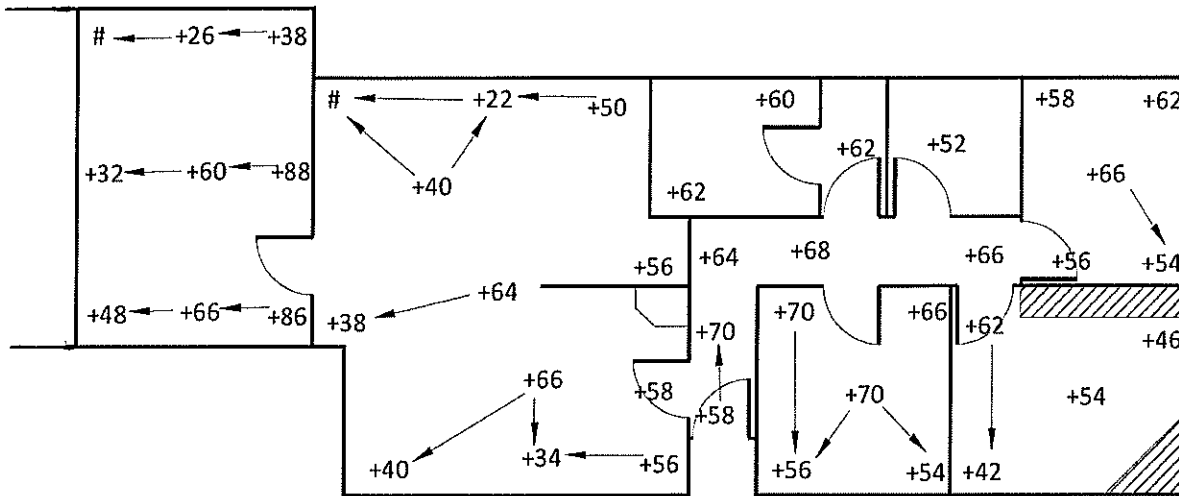
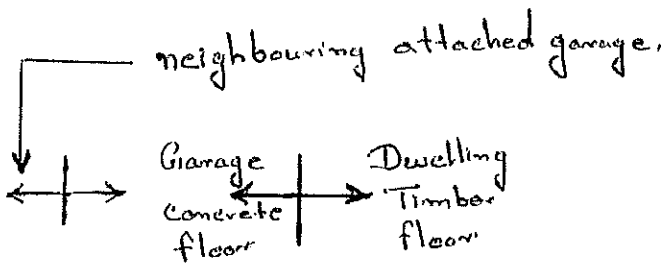
- 1) Measurements location are approximate and indicative only
- 2) Instrument used for measurement has a rated accuracy of +/- 3.0mm (ZIP level Pro 2000). Other sources of variation to the measurements can include construction tolerances, carpet, wear, and atmospheric temperature changes.

- 3) All measurements have been adjusted to the floor covering type at the datum. Adjustments made to raw measurements are indicated in sketch as follow :



Notes :

- 1) levels indicated are in millimeters.
- 2) Reference point zero millimeter denoted as "#".
- 3) Floor plan layout is indicative only and not to scale.
- 4) Floor levels relative differences between highest and lowest point are as follows:
 - 1) for dwelling's floor : 70 mm
 - 2) for garage : 86 mm
- 5) The Floor slope exceeded 1/200 tolerance denoted as " / " (indicative only).



DWELLING: FLOOR LEVEL PLAN

LEVEL SURVEY PLAN
(NTS)



Cephas Rock Limited
Structural Engineers

PO Box 37174, Christchurch 8425
P: (03) 338 5387, 0211031200
E: admin@cephasrock.co.nz

PROJECT : Structural Assessment

ADDRESS : 46 Charles Street, Waltham.

JOB NO : 17-536

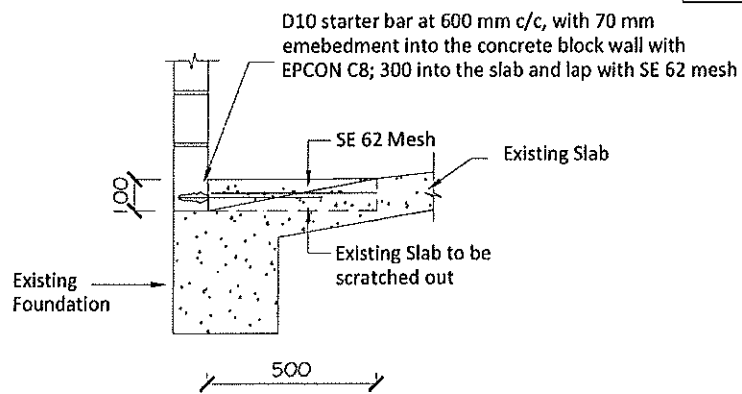
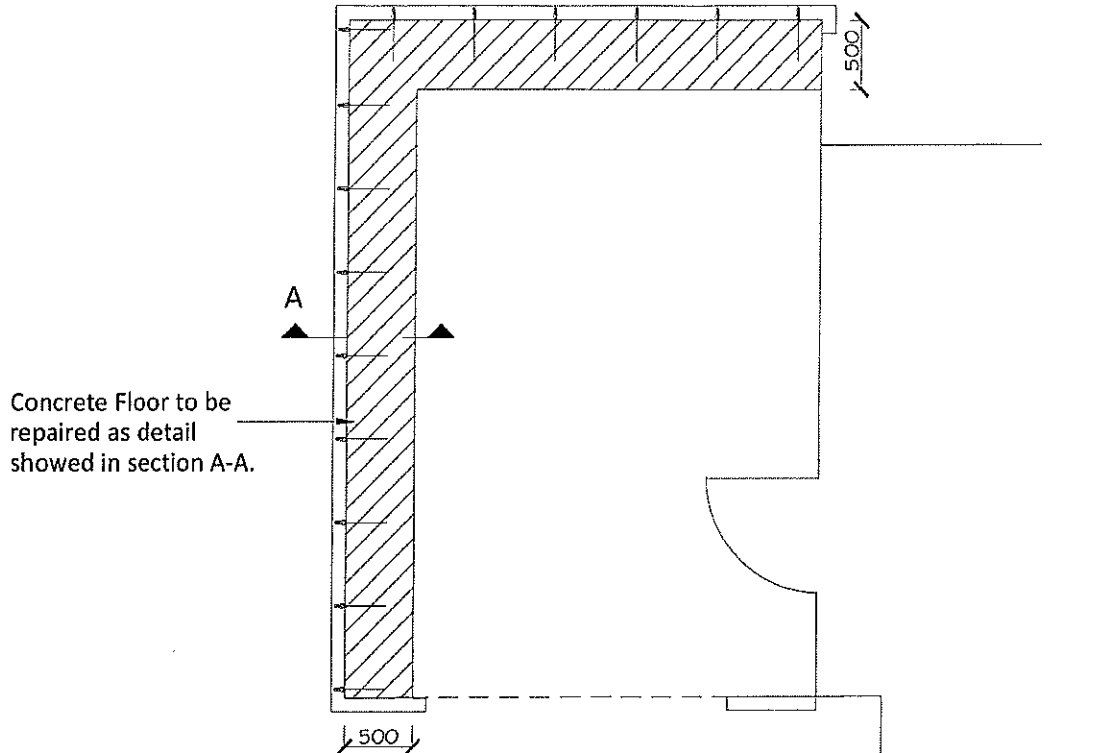
DRAWN BY : AEN

DATE : 24/10/2017

CHECK BY : JW

PAGE :

SK2



LEVEL SURVEY PLAN
(NTS)

03 November 2017

Job ref: 17-536

Gareth Webber c/o- Karl Gaskell
karl@kensway.co.nz

Dear Gareth,

**RE: STRUCTURAL ASSESSMENT – 46 CHARLES STREET, WALTHAM,
CHRISTCHURCH 8011.**

CONSTRUCTION MONITORING

For the structural assessment carried out, we recommend a construction monitoring level “CM2”. This is an audit of a sample of work, rather than a detailed inspection of every component. On this project, we propose the following inspections:

Proposed inspections for structural repairs at above property:

1. Inspection for neighbouring attached garage.
2. Pre-pour inspection to garage concrete floor and subfloor inspection after re-level the timber floor
3. Repair items (repair to brick veneer, repairs to concrete floor and foundation wall, repairs to wall lining and ceiling, and level survey post re-level)

The number of inspections for the above will depend on the contractor’s method of construction, concrete pour sequencing, etc. and shall be agreed with the contractor as the works progress.

A producer statement (PS4 Construction Review) could be issued once the above inspections have been completed.

We ask that the contractor notify us at least 24 hours in advance of all major items of work before they are concealed.

For any construction queries or inspection notifications, please contact our office.

Yours faithfully



Joshua Wong

BEng (HONS) CEngNZ IntPE (NZ)



Building Code Clause(s).....MBIE Guidelines

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on page 2)

ISSUED BY:.....CEPHAS ROCK LIMITED.....
(Design Firm)

TO: GARETH WEBBER C/O- KARL GASKELL.
(Owner/Developer)

TO BE SUPPLIED TO:...CHRISTCHURCH CITY COUNCIL
(Building Consent Authority)

IN RESPECT OF: ... REPAIR SCOPING TO EXISTING DWELLING- RE-LEVELLING BY JACKING AND PACKING TO INTERNAL PILES, GARAGE CONCRETE SLAB REPAIR AND RELEVEL, PERIMETER FOUNDATION BLOCK WALL REPAIR, AND SUMMER HILL STONE VENEER REPAIR.
(Description of Building Work)

AT: ...46 CHARLES STREET, WALTHAM, CHRISTCHURCH 8011...
(Address)
..... LOT DP SO

We have been engaged by the owner/developer referred to above to provide
... structural repair scoping, construction monitoring services in respect of the requirements of
(Extent of Engagement)
Clause(s) MBIE Guidelines 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, B1/AS1, B1/VM4...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
... CEPHAS ROCK LIMITED STRUCTURAL ASSESSMENT REPORT (Ref No. 17-536, dated 02/11/2017)..... and numbered; 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
- (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, ...JOSHUA WONG..... am: CPEng ... 1007291.....#
(Name of Design Professional) Reg Arch #

I am a Member of : IPENZ NZIA and hold the following qualifications:..BEng (HONS) CPEng IntPE CMEngNZ
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 BYJOSHUA WONG..... ON BEHALF OF ... CEPHAS ROCK LIMITED.....
(Design Firm)

Date... 24.1.18 (signature).....

1/2



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, IPENZ AND NZIA

2/2



Building Code Clause(s).....MBIE GUIDELINES.....

PRODUCER STATEMENT – PS4 – CONSTRUCTION REVIEW

(Guidance notes on the use of this form are printed on page 2)

ISSUED BY:CEPHAS ROCK LIMITED.....
(Construction Review Firm)

TO: GARETH WEBBER C/O KARL GASKELL.....
(Owner/Developer)

TO BE SUPPLIED TO: ...CHRISTCHURCH CITY COUNCIL.....
(Building Consent Authority)

IN RESPECT OF: STRUCTURAL REPAIRS TO EXISTING DWELLING – REPAIR TO SUMMER HILL STONE VENEER, GARAGE CONCRETE FLOOR, FOUNDATION BLOCK WALL REPAIR, AND JACK & PACK RELEVELLING REPAIR....
(Description of Building Work)

AT: ...46 CHARLES STREET, WALTHAM, CHRISTCHURCH 8011.....
(Address)
..... LOT..... DP SO

.....CEPHAS ROCK LIMITED.....has been engaged by GARETH WEBBER C/O KARL GASKELL
(Construction Review Firm)
To provide CM1 CM2 CM3 CM4 CM5 *(Engineering Categories)* or observation as per agreement with owner/developer
or otherservices
(Extent of Engagement)

in respect of clause(s) ..MBIE GUIDELINES... of the Building Code for the building work described in documents relating to Building Consent No. and those relating to Building Consent Amendment(s) Nos. issued during the course of the works. We have sighted these Building Consents and the conditions of attached to them.

Authorised instructions / variations(s) No. ...CEPHAS ROCK LIMITED REPORT (Ref No. 17-536 and 17-536-VO1).....
(copies attached)
or by the attached Schedule have been issued during the course of the works.

On the basis of this these review(s) and information supplied by the contractor during the course of the works and on behalf of the firm undertaking this Construction Review, I believe on reasonable grounds that All Part only of the building works have been completed in accordance with the relevant requirements of the Building Consent and Building Consent Amendments identified above, with respect to Clause(s) ... MBIE GUIDELINES ,of the Building Code.

I also believe on reasonable grounds that the persons who have undertaken this construction review have the necessary competency to do so.

I, ...JOSHUA WONG.....am: CPEng No. ...1007291.....
(Name of Construction Review Professional) Reg Arch No.

I am a Member of : IPENZ NZIA and hold the following qualifications: BEng (HONS) CPEng IntPE CMEngNZ.
The Construction Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000*.
The Construction Review Firm is a member of ACENZ :

SIGNED BY ...JOSHUA WONG..... ON BEHALF OF ...CEPHAS ROCK LIMITED.....
Date: 19-2-18 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*.

1/2

This form is to accompany **Forms 6 or 8 of the Building (Form) Regulations 2004** for the issue of a Code Compliance Certificate.

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PRODUCER STATEMENT PS4

October 2013

2/2

13 February 2017

Job No: 17-536-VO1

Gareth Webber c/o- Karl Gaskell
karl@kensway.co.nz

Dear Gareth,

**RE: STRUCTURAL REPAIR ASSESSMENT – 46 CHARLES STREET,
WALTHAM, CHRISTCHURCH 8011.**

We confirm that structural repair assessments were carried out by Cephas Rock Limited on 24 November 2017 and 29 January 2018 at the above property. The purpose of the assessments was to determine the structural integrity of the undertaken structural repairs for the dwelling, as recommended in our previous assessment report dated 02 November 2017. We note our assessment was visual only, and did not carry out any intrusive works.

STRUCTURAL REPAIRS

The structural repairs recommended for the dwelling in our previous assessments were inspected and are as follows.

Repairs to Summer hill stone veneer

The Summer hill stone veneer previously assessed to have moderate damage, has been taken down and re-cladded. The Summer hill stone veneer observed with minor mortar step cracks, has been repaired by raking out the mortar and repointing.

Repairs to perimeter foundation block wall

The block wall perimeter foundation wall observed with moderate separation at southeast side of the dwelling, has been repaired and plastered.

Local jacking and packing repairs to piles to re-level the building to within the recommended MBIE tolerances

Access to the subfloor was limited at the time of inspection. As per our observation, single timber packers fixed to the timber bearers were connected to existing timber piles with damp proof membrane, steel strap connections provided to the pile-to-bearer interface.

We have undertaken our level survey after jack and pack repairs. The overall floor level variation after jacking and packing repairs undertaken was found to be approximately 30mm for dwelling timber floor, with typically no local steep slopes exceeding 1V:200H identified during our assessment. Please refer to level survey plan attached.

Repairs to garage concrete floor to re-level the floor to within the recommended MBIE tolerances

We have undertaken pre-pour inspection as a construction monitoring process. (Please refer to the attached inspection note). The garage concrete floor was observed to have been partially replaced with SE62 mesh, D10 starter bars fixed into existing concrete foundation, and DPM.

We noted that we were not engaged to carry-out the inspection for the neighbouring attached garage prior to starting repair works to this property garage concrete floor.

We have undertaken our level survey after repair process. The overall floor level variation was found to be approximately 26mm for garage concrete floor, with typically no local steep slopes exceeding 1V:200H identified during our assessment. Please refer to level survey plan attached.

CONCLUSIONS

Overall, we confirm that structural repairs to the dwelling appear to have been carried out following our recommendations to the MBIE guidelines, and consider that the current state of the dwelling is able to provide sufficient structural integrity for long-termed occupancy. The suitability for occupancy must be re-assessed by a structural engineer after any future moderate earthquakes.

Inspection and Report by,



Gulendrarajah Nerooshan
Structural Engineer
BEng (Hons) MEngNZ

Checked and verified by,



Joshua Wong
Structural Engineer / Director
BEng (Hons) CPEng IntPE (NZ) CMEngNZ

Disclaimer:

This report has been prepared on behalf of and for the exclusive use of Gareth Webber c/o- Karl Gaskell and is subject to and issued in accordance with the provisions of the contract between Cephas Rock Limited and Gareth Webber c/o- Karl Gaskell. Cephas Rock accepts no liability or responsibility, whatsoever, for or in respect of any use or reliance upon this report by any third party.

This report is the copyright of Cephas Rock Limited. Except for the use of Gareth Webber c/o- Karl Gaskell and subject to the conditions in the agreement, no part of this publication may be copied without the express permission in writing from Cephas Rock Limited.

The above report does not constitute our confirmation that the building is “safe”, “earthquake resistant” or similar. We have not checked the level of actual structural compliance with the current Building Code, nor assessed the level of actual past seismic activity at the particular site on which the building is situated. We have carried out visual non-destructive inspection of readily accessible areas and have used our professional judgement to assess the extent of structural earthquake damage (if any) sustained from 4 September 2010 to date. We are unable to predict the severity

of any future seismic activity on your site, and how the building and site may perform in such an event, or series of events. If engaged to do so, we can carry out further structural investigation (which may include invasive methods) and desktop analysis work to ascertain level of structural compliance of the building in its current state, and identify structural vulnerabilities (if any) that may compromise the building's structural performance in the future.

The scope of any foundation re-levelling is to return the building foundations to as close to as reasonably practicable to its structural pre-earthquake condition (i.e. NZBC Section 112 repair). This clause states that the repair strategy does not have to improve the overall performance of the structure; rather it cannot be made any worse than it was prior to the earthquake sequence. The re-levelling of the foundations will not lead to any "betterment" of the existing foundation structure. Similar performance is likely to be observed, should we experience a further significant seismic event.

Reference

- Cephas Rock Limited. (2017). Structural assessment – 46 Charles Street, Waltham, Christchurch 8011 (Ref: 17-536, 02/11/2017).
- Ministry of Business, Innovation and Employment (MBIE). (2012). Repairing and rebuilding of houses affected by the Canterbury earthquakes – Technical Guidance (Part A). <http://www.dbh.govt.nz/guidance-on-repairs-after-earthquake> Wellington, New Zealand.
- Ministry of Business, Innovation and Employment (MBIE). (2015). Earthquake Repairs to Canterbury Homes – Home Inspection Survey Report. <http://www.mbie.govt.nz/about/whats-happening/news/2015/report-into-canterbury-residential-repairs-released>

Appendix



Photo 1. Garage concrete floor prior to pour concrete (View1)



Photo 2. Garage concrete floor prior to pour concrete (View2)



Photo 3. Single timber packer at interface of bearer and pile with steel strap connection



Photo 4. Steel strap connection to pile and bearer



Photo 5. Garage concrete floor after cast



Photo 6. Mortar repointing repair to Summer hill stone veneer



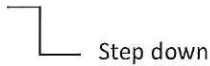
Photo 7. Re-cladded Summer hill stone and foundation block wall repair



Note :

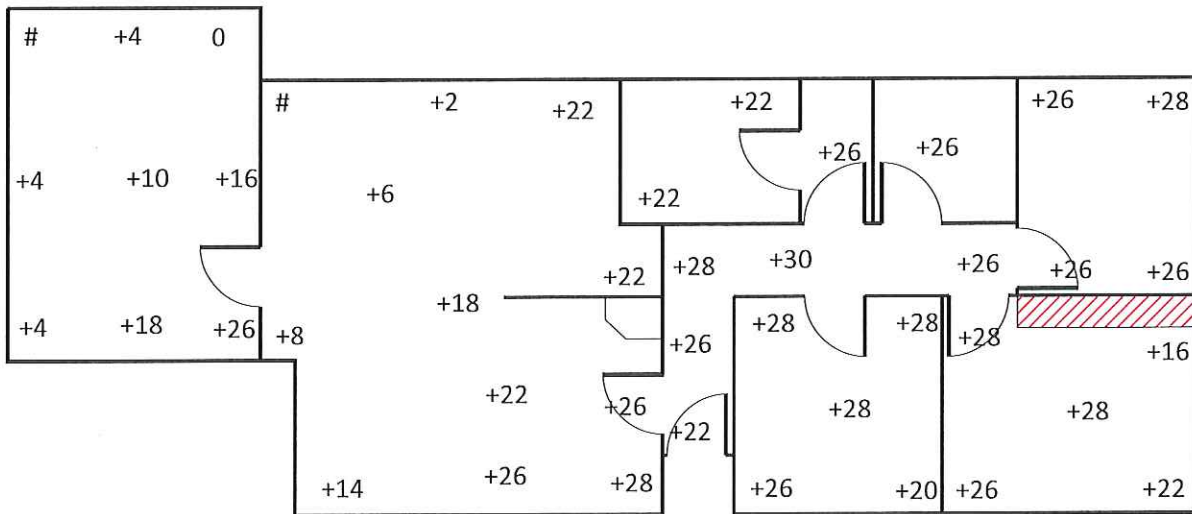
- 1) Measurements location are approximate and indicative only
- 2) Instrument used for measurement has a rated accuracy of +/- 3.0mm (ZIP level Pro 2000). Other sources of variation to the measurements can include construction tolerances, carpet, wear, and atmospheric temperature changes.

- 3) All measurements have been adjusted to the floor covering type at the datum. Adjustments made to raw measurements are indicated in sketch as follow :



Notes :

- 1) levels indicated are in millimeters.
- 2) Reference point zero millimeter denoted as "#".
- 3) Floor plan layout is indicative only and not to scale.
- 4) Floor levels relative differences between highest and lowest point are as follows:
 - 1) for dwelling's floor : 30 mm
 - 2) for garage : 26 mm
- 5) The Floor slope exceeded 1/200 tolerance denoted as " / " (indicative only).



DWELLING: FLOOR LEVEL PLAN



Consenting & Compliance Group

Producer statement construction (PS3)

All sections of this PS3 must be completed

Tick applicable Contractor for:

- Building
- Emergency Lighting
- Cladding
- Escalator
- Waterproof Membranes
- Drainlayer
- Fire Alarm
- Lift
- Mechanical (HVAC)
- Solar Heating
- Other (specify): _____

Author name:

Andrew Coombs

Author company:

A and A Coombs Builders Ltd

Site address:

46 Charles St

Description of building work:

Earthquake repairs: re-level house and garage as per engineers repair strategy, install 2 new vanities, install new hardware to all internal doors, supply, install new rangehood, rake, stop and paint cosmetic cracking to interior remove, clean, re-lay loose bricks, grindout re-point cracking to mortar

Owners Details:

Gareth Webber

Scope of work covered by statement:

Earthquake repairs as per engineers instructions and building work as above

System/Product used (if applicable):

I (constructor): Andrew Coombs have been engaged by

Gareth Webber (applicant, designer, main contractor etc) part all to construct:

As specified in the attached particulars of Building Consent Number: _____ and its attached conditions

I am satisfied on reasonable grounds that the building work specified above has been completed to the extent required by that Building Consent and complies with the NZ Building Code.

- NZBC clauses: *[select as applicable]*
- B1 B2 C1 C2 C3 C4 C5 C6 D1 D2 E1 E2
 - E3 F1 F2 F3 F4 F5 F6 F7 F8 G1 G2 G3
 - G4 G5 G6 G7 G8 G9 G10 G11 G12 G13 G14 G15
 - H1

I understand that this Producer Statement, if accepted, may be relied on by the Council for the purpose of establishing compliance with the Building Consent.


Registration No: Or N/A

Qualifications/Experience:

Address: Postcode:

Phone: Fax:

Mobile: Email:

Signature:  Date:

AFFIDAVIT

I, Andrew Gordon Coombs

(Full name of Deponent)

of Christchurch

(place of residence)

make oath and say as follows:

Garage concrete floor at 46 Charles Street, Waltham

I confirm that I have completed the garage concrete floor construction at above address with providing chairs to mesh as instructed in inspection note issued by Cephas Rock Limited on 24 November 2017.

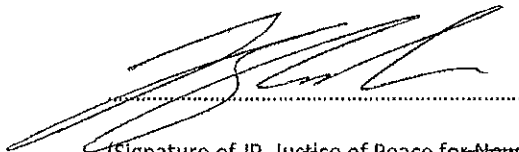


Sworn at Christchurch on this 19th day of February, 2018

before me Jamie Luca Stanton

(Name of JP)

Signature of deponent



(Signature of JP, Justice of Peace for New Zealand)

Solicitor of the High Court of New Zealand

Jamie Stanton
Lawyer
Malley & Co Lawyers
Christchurch

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