



1 June 2021

The Earthquake Commission (EQC)  
PO Box 38 600  
Wellington Mail Centre  
Wellington 5045

**WSP Whangarei**  
125A Bank Street  
PO Box 553  
Whangarei 0140  
New Zealand

Dear Sir/Madam,

Ref: EQC/2021/001295  
WSP Ref: 5-C37NB.01 (/026)

## Claim for Natural Disaster (Landslip) Damage;

1a Seaview Road, Paihia

EQC Ref: EQC/2021/001295

## 1 Introduction

WSP was engaged by the Earthquake Commission (EQC) to assess the damage and / or imminent risk to 1a Seaview Road ("the property") due to a natural disaster (landslip) event. The EQC customer is Jane Banfield and the event in question occurred following a heavy rainfall on or around the 14<sup>th</sup> February 2021. A claim was made to EQC and an inspection was carried out by WSP on the 29<sup>th</sup> April 2021.

The visit was undertaken to determine whether physical loss or damage to insured property has occurred as a direct result of the natural disaster and whether further damage is imminent. This report summarises the outcome of the inspection and subsequent assessment.

## 2 Site Description

The property is legally described as Lot 2 DP 124280 and has an area of 1103m<sup>2</sup>. The property sits on Haumai Point. On the west of the property is level ground at about RL 14.75m. In other directions, the ground slopes away to a Local Purpose Reserve. The surrounding Local Purpose Reserve slopes at a typical slope of 1:1 to the north east and south east to the sea.

The main property access is through a shared driveway to the dwelling at the southern end of the property.

The published geology of the property indicates underlying Waipapa Group sandstone and siltstone. This material is primarily greywacke rock.

Council files show the house was designed in 1975 with substantial alterations in 2000/2001. The room immediately above the slip was built between 1983 and 2000, originally used as laundry and converted to a study in 2000/2001. Plans of the foundations of this room were not identified in the council plans.



The EQC claim considered in this report relates to a landslip resulting from the storm event on the 14<sup>th</sup> February 2021. Material has evacuated below the house along the south eastern wall.

Piles were visible which appeared to have been poured against ground and subsequently exposed. It was not apparent over what timeframe the exposure occurred. No cracking was apparent in the piles or the concrete at the base of the exterior wall.

Access to the damaged area is from a concrete pad parking area at the top of the slope, through a half round timber fence. From the fence the ground slopes steeply down to the damaged area and steeply away from the house. The area is vegetated. Photographs of the access are provided in Appendix A photographs 1 – 4

Our findings have been summarised below with reference given to site photographs in Appendix A photographs 5 – 8 and the figures presented in Appendix B. Photographs of the entire area were not able to be obtained due to difficult access and the area being covered by black plastic.

The location and extent of the damage is shown on the attached figures and photographs. The conclusions and recommendations in this report are based on a visual walkover assessment of the site. It must be appreciated that subsurface conditions may vary from those inferred in this report. Property boundaries and topographical contours are based on LINZ and Far North District Council information overlain on aerial imagery.

### 3 Property Damage

The damage to the property consists of a landslip in the ground adjacent to the house, causing the below.

- Evacuation of insured land (11 m<sup>2</sup>; 6 m<sup>3</sup>)

Appendix B Figure 1 shows the land damage location and extent for the site. Figure 2 shows the evacuation in elevation.

### 4 EQC Considerations

WSP considers the damage bullet-pointed above to be natural disaster damage (landslip) as defined by the Earthquake Commission Act 1993 (EQC Act).

### 5 Imminent Risk

We consider that within 12 months (under normal rainfall conditions) and as a direct result of the landslip movement that has occurred there is imminent risk of damage to EQC insured property. Movement is likely to include regression of the slip scarp and damage to the structure due to the unsupported foundations. Appendix B Figure 1 shows the estimated regression. The risk is quantified as:

- Imminent risk of 5.5m<sup>2</sup> (3 m<sup>3</sup>) additional evacuation of insured land.
- Settlement of the beam above the evacuated land, resulting in settlement damage to the room above. The estimated affected floor area is 20m<sup>2</sup>.



## 6 Conceptual Remedial Works

The information in the following section is provided solely to EQC for claim settlement purposes. The conceptual works are for EQC cost estimation only, to enable EQC to assess the likely costs of repairing the damaged insured property and the cost of preventing damage to insured property that is considered imminent as a direct result of the natural disaster that has occurred. The conceptual scope of works, and drawings, are NOT FOR CONSTRUCTION.

A conceptual remedial works solution that reinstates the damaged area to a similar condition and removes the imminent risk threat to insured property is a 6.0m long in ground wall which would comprise the following:

- Prepare the temporary access and working platform for a mini auger rig to work within the available working space (approximate width 1.5m max). Ensure the stability and bearing capacity of the working area;
- Bore 450mm hole for the installation of 225SED post. The first in-ground pile to be installed is the eastern corner whereby the propagated soil evacuation from the building wall is observed;
- Install thirteen 6m long 225mm diameter timber piles at 500mm centres, 0.5m offset from the front face of dwelling. Grout the hole with minimum 17 MPA concrete.
- The post dimension and length as shown on Fig. 3 is indicative. Should greywacke be encountered at a shallow depth during auguring, installation can be terminated with an embedment of 300mm inside the greywacke stratum;
- Complete the installation of thirteen in-ground piles and reinstate the existing ground.

These works accommodate the requirements of the EQC Act 1993 and are considered appropriate in terms of cost effectiveness and constructability. An alternative solution could be more appropriate for the customer and wider property (beyond EQC insured land). It may be possible to implement an alternative solution and this solution could be investigated following settlement of the claim.

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

Engineering site investigations	\$5,000
Engineering design and drawings	\$3,500
Survey	\$1,500
Building/Resource Consents	\$1,500
Construction Monitoring	\$1,500
Construction	TBA*
<b>TOTAL (Excluding GST)</b>	<b>\$13,000 + construction cost</b>

\*The construction cost estimate for the proposed solution will be provided by an EQC cost estimator.



The below table is used to represent any likely construction issues for cost estimation purposes

*Table 1 Evaluation of Construction Issues*

Construction Issues	Easy	Moderate	Hard	N/A
Construction Access			✓	
Earthworks required			✓	
Constructability/Reinstatement			✓	

Resource consent may be required for the construction and this should be confirmed with the Local Authority prior to any remedial works being undertaken.

All remedial solutions should consider safety in design. Any construction works should be undertaken in a safe and appropriate manner, including the allowance for all necessary protection and temporary stabilisation works as required to ensure the safety of all persons working or present on-site during construction.

## 7 Summary of Information

The summary of information is based on the findings and recommendations contained in the previous sections of this report.

*Table 1 Summary of Information*

Is this Natural Disaster damage?	Yes (Landslip)
<b>Land within 8 m of dwelling or appurtenant structures</b>	Yes
Area of land <b>damaged</b>	
Evacuated	11 m <sup>2</sup> ; 6 m <sup>3</sup>
Inundated	Nil
Area of land at <b>imminent risk</b>	
Evacuated	5.5m <sup>2</sup> ; 3 m <sup>3</sup>
New Inundation	Nil
Re-Inundation	Nil
Cosmetic damage to garage cladding	Nil
<b>Main accessway within 60m of dwelling</b>	N/A
<b>Retaining Walls supporting or protecting insured buildings and/or land located within 60m of dwelling or appurtenant structures</b>	N/A
<b>Dwelling &amp; appurtenant structures</b>	
Imminent Risk of damage	Yes - 20m <sup>2</sup> floor area
<b>Services within 60m of Dwelling or Appurtenant Structure</b>	N/A
<b>Bridges or Culverts situated on insured land</b>	N/A
<b>Conceptual Remedial Works:</b>	
Install 6m deep 6.0m long in ground wall comprising 13 nos 225mm SED timber piles	\$13,000 + construction costs* (excluding GST)

\*To be assessed by an EQC cost estimator



## 8 Applicability

This report was produced for EQC for the sole purpose of assisting EQC to determine whether it has any liabilities under the Earthquake Commission Act 1993 and it may not be relied upon in other contexts or for any other purpose, or by any person other than EQC, without prior written agreement.

Yours Sincerely  
On behalf of WSP

Compiled by:

A blue ink signature of Richard Pearson, written in a cursive style.

Richard Pearson  
Senior Civil Engineer

Approved for release by:

A blue ink signature of Aaron George, written in a cursive style.

Aaron George  
Principal Geotechnical Engineer

## 9 Appendix

- Appendix A – Site Photographs 1-8
- Appendix B – Figures 1-3



# Appendix A

## Photographs



Photographs 1-8 – 1a Seaview Rd, Paihia



**Photo 1:** View at carparking area at top of access. Access through red circled area.

**Photo 2:** Photo repeated from Natural Disaster Event Assessment Report showing access to slip from top of access.





**Photo 3:** General elevation of slip area showing potential working area.  
**Photo 4:** View of slip area from above.





Photo 5: Western end where ground level is at concrete beam level

Photo 6: Exposed pile #1





**Photo 7:** Exposed pile #2 & 3 showing scarp

**Photo 8:** Exposed pile #2 & 3 showing uncontrolled fill under deck on right. Rebar in foreground is monitoring peg from demolition of neighbouring hotel.



# Appendix B

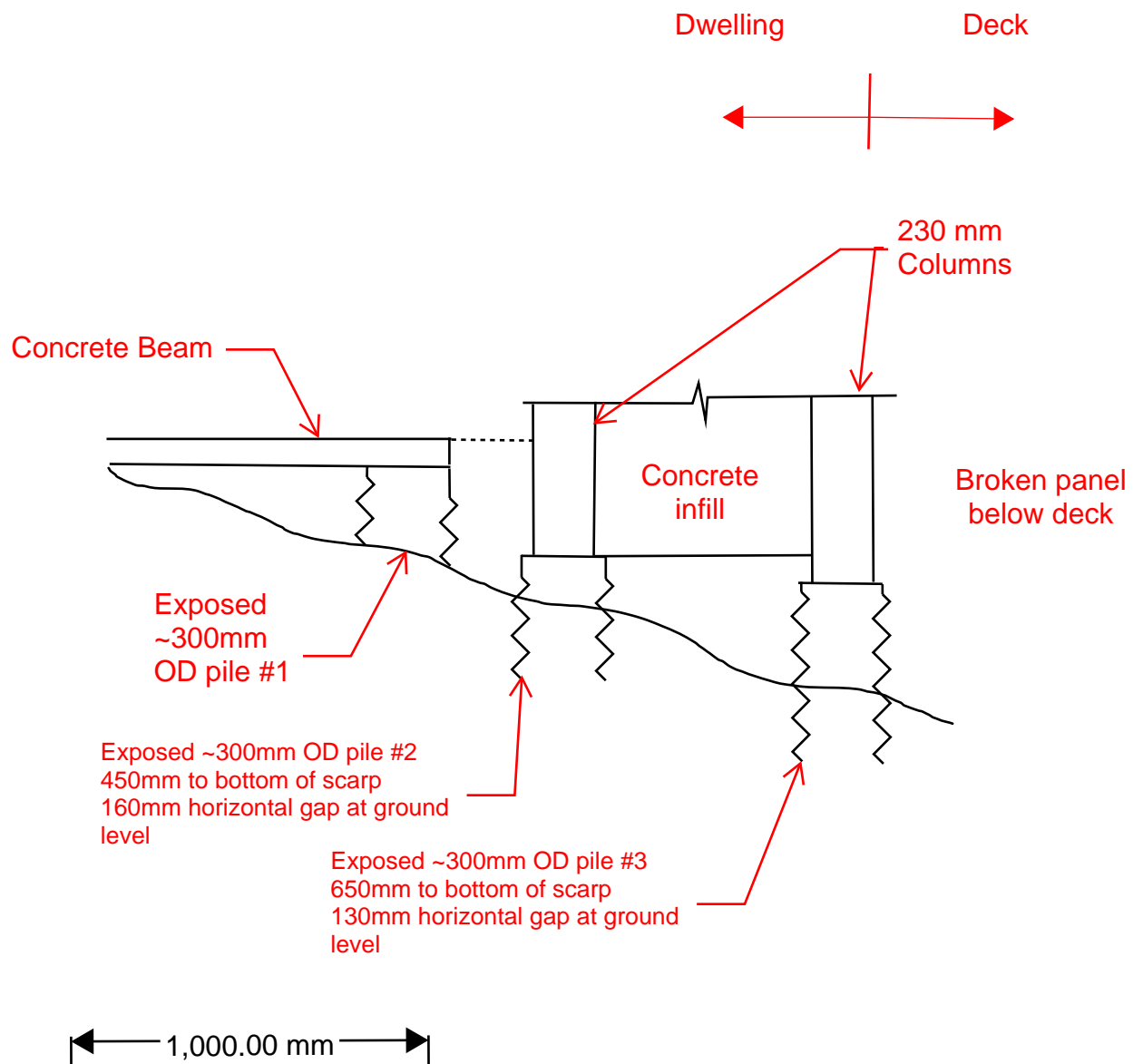
## Figures




# Far North Maps







 <p>WSP 100 Beaumont St Westhaven Auckland 1010</p>	Project 1a Seaview Road, Paihia		Job number 5-C37NB.01
	Description Figure 2 - Elevation		Revision 001
	Drawn by RP	Checked by AG	Date 06/05/21

