IN THE HIGH COURT OF NEW ZEALAND
WHANGANUI REGISTRY

I TE KŌTI MATUA O AOTEAROA
WHANGANUI ROHE

CIV-2016-483-16
[2019] NZHC 2176

BETWEEN	MARK ALBERT GOODIER AND NICHOLA JANE GOODIER AS TRUSTEES OF THE GOODIER FAMILY TRUST Plaintiffs
AND	THE EARTHQUAKE COMMISSION First Defendant
AND	IAG NEW ZEALAND LIMITED Second Defendant

Hearing:	17 – 28 September 2018 8 – 10 October 2018 12 October 2018 16 October 2018 7 February 2019, 27 February 2019 and 14 March 2019 (further submissions received)
Appearances:	G D R Shand and N T P Lala for the Plaintiff B A Scott and J Y Moran for the First Defendant R W Raymond QC and S K Swinerd for the Second Defendant
Judgment:	2 September 2019

JUDGMENT OF CULL J

TABLE OF CONTENTS

Overview

[1] This is an insurance claim by house owners to recover loss to their house and property, following a landslip. Over the weekend of 20 and 21 June 2015, a one in 85 year weather event brought torrential rainfall and floods after three weeks of rain to the Whanganui region, resulting in a number of landslips. One such landslip occurred on Bastia Hill in Whanganui, affecting Mr and Mrs Goodier's (the Goodiers) property at Shakespeare Road (the Property). It washed away a significant part of their driveway and lower slopes beneath their accessway, including retaining walls.

[2] A week later, on 30 June 2015, the Whanganui District Council issued a notice under s 124 of the Building Act 2004 requiring the Goodiers to vacate the Property because their house was assessed to be a dangerous building and was uninhabitable.

[3] The Goodiers claim compensation from the first defendant, the Earthquake Commission (EQC), under the Earthquake Commission Act 1993 (the EQC Act). They also claim against the second defendant, IAG Insurance (IAG), under a policy of insurance covering sudden and accidental loss to the house on the Property (the Policy).

[4] EQC has accepted liability under the EQC Act and has paid the Goodiers $136,790.21 (less excess) in respect of the building, retaining walls, and land.[1] IAG has paid a further $41,776.05 (less excess) for the repair of the driveway. IAG maintains its Policy does not cover damage to the land itself.

[5] The Goodiers have not accepted that EQC and IAG have settled their claims as the EQC Act and the Policy require. They seek additional payments for the shortfall

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[1] All payments referred to in this judgment from EQC and IAG to the Goodiers are total figures, and do not take into account Policy excess to be paid.

to remediate their Property, as well as general damages. Both EQC and IAG contest that they are not liable for any further payment or damages.

[6] The critical issue in this case is whether the landslip, or another event, caused damage to the Goodiers' Property, for which the Goodiers claim further relief. During the trial, one of the Goodiers' experts revised the costings for remediation from the estimates previously served. I adjourned the evidence on the costs of remediation and quantum to a further hearing following my liability determination,[2] and directed that the trial proceed on the issue of liability only.

[7] I have found the claimed damage to the Goodiers' Property was not caused by the landslip.

[8] In this judgment, I will deal with the facts and the legal issues in five parts:

(a) Part I: the Goodiers' claim, the insurance and legislative context and and the refined issues on liability;

(b) Part II: the legal issues among the parties;

(c) Part III: the factual contest;

(d) Part IV: resolution of the factual and legal issues; and

(e) Part V: summary of findings.

PART I – THE CLAIM, THE CONTEXT AND THE ISSUES

Background facts

The house and land

[9] The storm which occurred in Whanganui over 20 and 21 June 2015 occurred in the middle of a particularly wet winter and followed three weeks of heavy rain.

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[2] *Goodier v The Earthquake Commission* HC Whanganui CIV-2016-483-16, 1 October 2018 (Ruling 2 of Cull J).

Almost 230 millimetres of rain fell in the first three weeks of June, and the storm on 20 and 21 June contributed 140 millimetres of this rain, equivalent to one month's worth of rain in 24 hours. It was assessed as being a one in 85 year event. EQC responded to over 200 landslips in the month following the storm, as a result of soils being saturated throughout the region, causing many landslips.

[10] One of the landslips was at the Goodiers' Property on Shakespeare Road, which winds up Bastia Hill. The Property sits on the crest of the hill, with access by a reasonably steep driveway off Shakespeare Road, which runs over the crest of the hill and levels out onto a flatter paved area leading to the house. A building platform was formed for the house by cutting into the crest of the hill to create a flat area and some stepped benches. The soil on the outer edge of the southward slope was fill that had been excavated to create a platform where the house was originally built in 1975. The garage was built in 1989, some 14 years later.

[11] During the storm, the saturated, predominantly loose, fill soils on the edge of the southward slope both above and below retaining walls mobilised in a shallow but wide landslip, taking away the four retaining walls and a portion of the driveway. The landslip caused part of the paved driveway to collapse and evacuated soils under the southwest of the garage.

[12] The Goodiers claim that the landslip, which evacuated land within eight metres of the dwelling on the Property, caused sudden and accidental loss to the Property.

This included land loss, driveway and downslope loss, and damage to the garage and house.

[13] On 22 June 2015, the Goodiers notified EQC and IAG of the landslip and made their claims for loss. The particulars of damage claimed in the first statement of claim filed by the Goodiers expanded markedly during the trial. At the conclusion of the trial after his final reply, Mr Shand for the Goodiers filed an amended statement of claim, pleading the particulars of damage which had been the subject of evidence at the trial. Those particulars are summarised below, at [87]. The essence of the damage includes land loss, damage to the driveway and slope, cracking in the garage floor and walls, and cracking, sloping, bending and movement to various parts of the house.

[14] On 30 June 2015, the Whanganui District Council issued the Goodiers a notice under s 124(2)(c) of the Building Act 2004, which stated that by reason of the landslip, the building was a dangerous building (s 124 Notice). The s 124 Notice states that no entry to the building is permitted and using or occupying the building would be an offence under the Building Act 2004.[3]

[15] The s 124 Notice requires the Goodiers to make arrangements for suitable engineering investigations as to the structural integrity of the building and/or the imminent risk of further slips that may affect the building. It also requires the Goodiers to reduce or remove the danger by carrying out remedial works, and to ensure that the building remains unoccupied (except for assessment or repair works) until it is deemed not to be dangerous.[4]

EQC's response to claim

[16] EQC accepted liability under the EQC Act and paid the Goodiers $38,290.21 (less excess) under s 18 of the Act, which relates to EQC's liability in respect of an insured residential building. The maximum amount payable by EQC under s 18 is

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3 Section 128.

4 Originally the s 124 Notice was due to expire on 30 July 2015, but because the Goodiers have not taken the steps necessary under the s 124 Notice, the Council has reissued it, with the s 124 Notice currently in force.

$115,000.00 (inclusive of GST). EQC has also made land-related payments to the Goodiers of $80,750.00 (less excess) and $17,750.00 under s 19 of the EQC Act.

[17] The Goodiers say that the payments made by EQC are inadequate. Initially, they claimed that the landslip resulted in a total loss, because the house was so damaged as to lose its identity and function as a home and repairs were impracticable. They also said repair and/or rebuilding the house was prohibited by the s 124 Notice.

[18] At the trial, however, and in their amended statement of claim, the Goodiers contend that if the house and external features were rebuilt on its current site to a condition as near as possible to when it was new, as s 18 and the Policy provide, the cost would be in excess of $660,000.00.[5] The Goodiers therefore claim $76,709.79 from EQC under s 18 of the EQC Act, the difference between the statutory "cap" of $115,000.00 and the $38,290.21 which has been paid.[6] They also seek general damages of $50,000.00.

[19] EQC says that it has paid the Goodiers their full entitlement under ss 18 and 19, and it has no further liability.

IAG's response

[20] The IAG Policy covers the Goodiers for full replacement of the house arising out of sudden accidental loss, limited to a floor area of 280 square metres and up to a value of $521,749.00. IAG has paid $41,776.05 (less excess) which is said to be the amount payable under the Policy for repairs to the driveway on the Property.[7] The Goodiers say that they are entitled to the full cost of rebuilding: allowing for the $115,000.00 which they say EQC is liable to pay under s 18 of the EQC Act, IAG should pay them the balance of $369,972.95.[8]

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5 This figure comprises a $226,095.72 estimate to remediate the dwelling to near-new condition, and a $440,864.36 estimate to remediate the external features to near-new condition.

6 The Goodiers initially claimed further payment under s 19 of the EQC Act. This part of the claim was abandoned at the commencement of the trial.

7 After a deduction of $5,000 for Policy excess, IAG has in fact paid $36,776.05.

8 This figure is calculated as the sum insured of $521,749, less EQC's liability of $115,000, less IAG's previous payment of $41,776.05 less $5,000 excess.

[21] The Goodiers have also claimed from IAG landscaping costs of $2,500.00, retaining wall costs of $20,000.00, a payment of $1,000.00 for stress and $50,000.00 for general damages.

[22] IAG accepts that it must pay the reasonable costs to repair or rebuild the part of the home that has suffered insured damage to a condition as similar as possible to when it was new. To that end, IAG has paid $41,776.05 (less excess) for repairs to the driveway. However, the Policy expressly excludes stabilising, supporting or restoring land, earth or fill. The Policy insures physical loss or damage specifically to the home, not land. IAG also submits that there can be no claim under the Policy in respect of the retaining walls, as cover under the Policy for retaining walls is limited to $20,000.00 and EQC has already paid $20,500.00 to the Goodiers for the retaining walls. Further, cover for stress is available under the Policy only if there is a total loss to the home, which it says there is not.

[23] IAG submits its liability is therefore the difference between the Goodiers' maximum entitlement from EQC ($115,000.00) and the total cost to repair the insured loss to the home up to $521,749.00. It says that once the land is repaired, repairing the damage to the house will cost less than $115,000.00. IAG says it has therefore fulfilled its obligations under the Policy and has no further liability. There is no liability for IAG, in any event, until EQC's liability meets the maximum entitlement, which it has not done here.

[24] To understand the insurance context of the Goodiers' claim, it is necessary to set out the statutory framework governing natural disasters in New Zealand and the provisions of the insurance Policy.

The insurance context

[25] On the occurrence of any natural disaster damage to a property which qualifies as insured under the EQC Act, the insured person must give notice to EQC of the occurrence of natural disaster damage within three months.[9] A person is automatically deemed to be insured against "natural disaster damage" under the EQC Act when a

[9] Earthquake Commission Act 1993, sch 3, cl 7.

contract of fire insurance with an insurance company is entered into in respect of a "residential building".[10] It is accepted that the Goodiers qualified as insured under the EQC Act and that they gave the required notice to EQC within the prescribed three month period after the landslip.

[26] In addition, the Goodiers had a policy with IAG. The basis of insurance under the EQC Act is governed by the legislative provisions, which dovetail with the Goodiers' IAG Policy. The Policy provides for additional or "top-up" cover where EQC cover applies in the event of natural disaster damage.

[27] The EQC Act envisages private insurers providing additional cover for natural disaster insurance. Thus, private insurers have structured their policies in such a way that EQC provides the first layer of insurance and the private insurers provide additional insurance above the statutory limit or cap on EQC's liability. I turn to consider the relevant provisions under the EQC Act before dealing with the IAG Policy.

The EQC Act 1993

[28] The EQC Act provides a statutory scheme of insurance for natural disaster damage in respect of three different types of property:

(a) residential buildings under s 18;

(b) residential land under s 19; and

(c) personal property under s 20.[11]

[29] A "residential building" is defined in s 2(1) of the Act as:

> (a) any building, or part of a building, or other structure (whether or not fixed to land or to another building, part, or structure) in New Zealand which comprises or includes 1 or more dwellings …
>
> …

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10 Section 18(1).

11 Insurance for personal property is not at issue in these proceedings.

(c) every building or structure appurtenant to a dwelling referred to in paragraph (a), or a building or part of a building referred to in paragraph (b), and that is used for the purposes of the household of the occupier of the dwelling or for the purposes of the residents of the building or part:

(d) all water supply, drainage, sewerage, gas, electrical, and telephone services, and structures appurtenant thereto–

(i) serving a dwelling referred to in paragraph (a), or a building or part of a building referred to in paragraph (b), or surrounding land; and

(ii) situated within 60 metres, in a horizontal line, of the dwelling or building or part; and

(iii) owned by the owner of the dwelling or building or part, or by the owner of the land on which the dwelling or building or part is situated

[30] In this case, the "dwelling" includes the house and the attached garage. The appurtenant structures include the children's playhouses, and the drainage and sewerage include such services within 60 metres of the house.

[31] Residential land under s 2(1) means, in relation to any residential building, the following property situated within the land holding on which the residential building is lawfully situated:

(a) the land on which the building is situated; and

(b) all land within 8 metres in a horizontal line of the building; and

(c) that part of the land holding which–

(i) is within 60 metres, in a horizontal line, of the building; and

(ii) constitutes the main access way or part of the main access way to the building from the boundary of the land holding or is land supporting such access way or part; and

…

(e) all retaining walls and their support systems within 60 metres, in a horizontal line, of the building which are necessary for the support or protection of the building or of any property referred to in any of paragraphs (a) to (c).

[32] Residential buildings are now insured against natural disaster damage on a "replacement value" basis, but only up to certain statutory limits. This has been the

case since 1993 and as is shown below, s 18(1)(c) governs the limits on amounts payable:

> **18 Residential buildings**
>
> (1) Subject to any regulations made under this Act and to Schedule 3, where a person enters into a contract of fire insurance with an insurance company in respect of any residential building situated in New Zealand, the residential building shall, while that contract is in force, be deemed to be insured under this Act against natural disaster damage for its replacement value to the amount (exclusive of goods and services tax) which is the least of–
>
> (a) if the contract of fire insurance specifies a replacement sum insured for which the building is insured against fire under that contract, the amount of that sum insured:
>
> (b) if the contract of fire insurance does not specify such a replacement sum insured but does specify an amount to which the building is to be insured under this Act, that amount:
>
> (c) the amount arrived at by multiplying the number of dwellings in the building (being the number determined in accordance with subsection (3)) by $100,000 or such higher amount as may be fixed from time to time for the purposes of this paragraph by regulations made under this Act.
>
> …
>
> (3) For the purposes of subsection (1)(c), a residential building is deemed to comprise 1 dwelling unless the existence of a higher number of dwellings in the building is disclosed to the insurance company at the time that the contract of fire insurance is entered into.

[33] Under s 19, the residential land on which a residential building is situated will be insured under the EQC Act against natural disaster damage while the residential building insurance is in force. The amount to which the land will be insured is the sum of, in the case of any particular damage:[12]

> (a) the value, at the site of the damage, or –
>
> (i) if there is a district plan operative in respect of the residential land, an area of land equal to the minimum area allowable under the district plan for land used for the same purpose that the residential land was being used at the time of the damage; or
>
> (ii) an area of land of 4 000 square metres; or

[12] Section 19(a) and (b).

(iii) the area of land that is actually lost or damages –

whichever is the smallest; and

(b) the indemnity value of any property referred to in paragraphs (d) and (e) of the definition of the term residential land in section 2(1) that is lost or damages.

[34] Importantly, in the context of this landslip claim, the insurance cover provided for buildings and land under both ss 18 and 19 is for "natural disaster damage," which has a statutory definition under the EQC Act.

Natural disaster definitions

[35] "Natural disaster" is defined under s 2(1) of the EQC Act and includes a "natural landslip". A "natural landslip" is defined and means:

> … the movement (whether by way of falling, sliding, or flowing, or by a combination thereof) of ground-forming materials composed of natural rock, soil, artificial fill, or a combination of such materials, which, before movement, formed an integral part of the ground; but does not include the movement of ground due to below-ground subsidence, soil expansion, soil shrinkage, soil compaction, or erosion

[36] "Natural disaster damage" means, in relation to property:

(a) **any physical loss or damage to the property** occurring **as the direct result of a natural disaster**; or

(b) any physical loss or damage to the property occurring (whether accidentally or not) as a direct result of measures taken under proper authority to avoid the spreading of, or otherwise to mitigate the consequences of, any natural disaster, but does not include any physical loss or damage to the property for which compensation is payable under any other enactment [Emphasis added]

[37] "Physical loss or damage" is also defined and, in relation to property, includes:

> … any physical loss or damage to the property that (in the opinion of the Commission) is imminent as the direct result of a natural disaster which has occurred

[38] It is common ground among the parties that the landslip on 20 June 2015 was a natural disaster, being a natural landslip, and on this basis EQC and IAG accepted the claim and paid the Goodiers $136,790.21 for loss of land, retaining walls, actual

damage to their residential building, together with an imminent risk payment in respect of the risk of further damage occurring to the southwest corner of the garage.

EQC

[39] EQC is a Crown entity which administers the EQC Act and insurance against natural disaster damage.[13] From an historical development of the Act, EQC emphasises that there is an important difference in the basis on which land and buildings are insured. "Land", which is defined to include retaining walls, continues to be insured on an indemnity basis, on the basis of its value or condition at the time the damage occurred. Buildings and contents are insured on a replacement value basis up to certain statutory limits. The relevant limit is governed by s 18(1)(c) which is $100,000.00 (excluding GST) in respect of each natural disaster event, that is, $115,000.00 including GST.

[40] Applying those limits to this case, the maximum for which the Goodiers' Property could be covered by EQC is:

(a) in respect of the building under s 18, for its replacement value up to the statutory cap of $115,000.00 with IAG providing cover for any repair cost in excess of this cap; and

(b) in respect of the land under s 19, on an indemnity basis, to the amount of:

(i) the minimum lot size, being the smallest of the three areas of land in s 19(a); and

(ii) the indemnity value of the damaged retaining walls.

[41] As noted, EQC has paid to the Goodiers $38,290.21 (less excess) under s 18 for the building, and $98,500.00 under s 19 for the land (comprising $78,000.00 for the minimum lot size and $20,500 for the retaining walls). This amounts to the total

[13] Earthquake Commission Act 1993, ss 4A and 5(1)(a).

sum of $136,790.21. EQC does not accept that the Goodiers' house needs replacing or rebuilding.

IAG's insurance policy

[42] The Goodiers' Policy with IAG covered their home for up to $521,749.00. "Home" is a defined term in the Policy and includes the residential dwelling (the house and garage), a driveway of permanent construction, and walls – including garden and retaining walls. Relevantly in this case, "home" expressly excludes "land, earth or fill." It does not include a gravel or shingle driveway or path.

[43] The primary insurance covers sudden and accidental loss. As part of the definition, the Policy explains what is not covered and this includes natural disaster cover:

> **Exclusions that apply to the whole policy**
>
> …
>
> Natural disaster
>
> **You're** not covered for **loss** to the **home** caused by a **natural disaster** except for **loss** covered under the 'Natural disaster cover' …

[44] The Policy then defines the "natural disaster cover" benefits:

> **Natural disaster cover**
>
> **You're** covered for any sudden and **accidental loss** to the **home** that occurs during the **period of cover** caused by a **natural disaster**, subject to the following:
>
> **Where EQC Cover applies**
>
> 1. If that **loss** is covered under the **EQC Act**, or would've been but for:
>
>   a. the application of an excess under the **EQC Act**,
>
>   b. a failure by **you** to correctly notify a claim to the Earthquake Commission within the time required under the **EQC Act**,
>
>   c. a decision by the Earthquake Commission to decline a claim or limit its liability for that **loss** in whole or in part and for any reason whatsoever,

d. any act or omission on **your** part, the part of **your** agent, or the part of the Earthquake Commission,

and the cost to repair or rebuild the part of **your home** that suffered the **loss** exceeds **your** maximum entitlement available (or that would've been available but for the reasons in 1.a. to d. above), for that **loss** under the **EQC Act** (plus the excess under that Act), **we'll** pay the difference between that maximum entitlement (plus that excess) and the cost to repair or rebuilt the part of **your home** that suffered the **loss**.

2. The most **we'll** pay under this benefit is the difference between that maximum entitlement (plus the excess under the **EQC Act**) and the **total sum insured**.

Where no EQC Cover applies

3. Where **your** claim for **loss** to the **home** under this benefit is for, or includes, any part of the **home** that is not covered under the **EQC Act**, then the **excess** will be the highest of:

a. $5,000, and

b. the **excess** otherwise applicable to the claim under this policy.

Some examples of parts of the home not covered under the EQC Act are:

gate or fence,

driveway,

patio, path, paving, tennis court or other artificial surface,

swimming pool or spa pool which is not an integral part of the building.

[45] Thus, only "top-up" cover is provided for accidental loss caused by natural disaster events.

[46] Clause 2 of the natural disaster cover specifies that the most IAG will pay under the benefit is the difference between the Goodiers' maximum entitlement under the Act (plus the excess) and the total sum insured, which was $521,749.00.

[47] On 25 February 2016, IAG made a payment of $36,776.05 to the Goodiers for the damage to the paved driveway, which was based on a quote to remove and replace pavers at $41,776.05, less the Policy excess of $5,000. IAG accepted that it had a separate liability under the Policy for the driveway damage, as it falls within the Policy

definition of "home", but is outside the cover under the EQC Act.[14] The driveway pavers met the definition of "home" in the Policy being a "driveway of permanent construction". IAG says that this payment satisfies its liability in respect of this damage. Further, IAG says that the Policy insures for physical damage to materials and structures that make up the body of the property said to be damaged. This is not land. The Policy does not respond to repair, stabilise, support or restore earth or fill.

[48] With respect to physical damage or physical loss to the materials and structures that make up the home, IAG's liability is the difference between the Goodiers' maximum entitlement from EQC and the total cost to repair the insured loss to the home up to the maximum liability. IAG's position is that it has no further liability to the Goodiers under the Policy, because EQC's payments in relation to the remaining items has indemnified the Goodiers for the landslip damage to the "home".

The Goodiers' claims

The first statement of claim

[49] The Goodiers filed their first statement of claim in May 2016, pleading that their house suffered a total loss with the cost of remediation in excess of the amount insured. The claim contained two causes of action against EQC, and one cause of action against IAG. The first cause of action against EQC sought an additional payment of $77,091.79 under s 18 of the Act in respect of the Goodiers' house and garage plus general damages of $50,000.00 (with interest and costs). The second cause of action sought an additional payment of $39,250.00 under s 19 in respect of the residential land, including four retaining walls and support systems, plus general damages of $50,000.00 (with interest and costs).

[50] The cause of action against IAG sought an additional payment of $406,749.00 to reinstate the Goodiers' house,[15] plus general damages of $50,000.00, landscaping costs of $2,500.00, retaining wall costs of $20,000.00, and stress payment of $1,000.00. The Goodiers claim that IAG has failed or refused to meet its obligations

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14 Earthquake Commission Act 1993, sch 2, cl 10.

15 This figure is $521,749.00 (the maximum amount insured for under the Policy) less the EQC payment of $115,000.00.

under the Policy by paying them only $36,776.05 for repairs to the driveway and IAG's conduct has caused the Goodiers substantial distress, inconvenience, and mental anguish.

[51] Just prior to the commencement of the trial, Mr Shand for the Goodiers advised the defendants that the Goodiers' s 19 land claim against EQC was abandoned. EQC sought judgment and costs on that abandonment. I have reserved that application.

[52] The Goodiers' initial pleading was primarily based on the claim that the Goodiers' house suffered a "total loss," with the cost of remediation in excess of the amount insured. They claimed the "total loss" arose because the Whanganui District Council "will not grant a building consent for building work in relation to the house" and the house "cannot now legally be repaired and/or rebuilt on its current site". EQC and IAG challenged that claim, saying that neither proposition was legally or factually correct.

[53] During the course of the trial, two issues arose in relation to the evidence on remediation costs and the expanded evidence on damage at trial, leading to an amended statement of claim.

Revision of remedial costings

[54] Counsel for EQC and IAG raised their concerns that the Goodiers had filed substantial fresh evidence, outside of the timetable directions, including expert evidence which significantly revised the damage claimed. This was done primarily by way of an updated brief of evidence from Mr Hunt, a qualified and experienced quantity surveyor and building consultant who appeared for the Goodiers.

[55] Counsel for EQC and IAG strongly objected to the late amendment of Mr Hunt's brief, which substantially changed the damages claim. I directed that the most appropriate course was to continue the trial on liability only.[16] Damages, including the reasonable cost of remediation, should await the outcome on liability.

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16 *Goodier v The Earthquake Commission*, above n 2.

The amended statement of claim

[56] During the course of the trial, the lay witnesses and experts called by Mr Shand for the Goodiers gave substantive evidence in their reply briefs and orally on elements of the Goodiers' claim which had not been pleaded.

[57] At the very conclusion of his final right of reply, Mr Shand submitted an amended statement of claim which pleaded the elements of damage which had been the subject of significant evidence. The particulars of damage, as amended, are set out at [87] below. In their amended statement of claim, the Goodiers no longer pleaded that they suffered a total loss but sought liability findings against EQC and IAG to sustain their claims for reinstatement costs and general damages.

[58] In respect of the very late amendment to the statement of claim, I allowed EQC and IAG to file submissions in respect of Mr Shand's oral application to amend the Goodiers' statement of claim and the amendment so provided. Following a telephone conference with counsel, I granted the Goodiers leave to file the amended statement of claim and gave directions regarding the provision of further submissions and/or evidence on the additional matters pleaded.[17]

[59] A further issue emerged at the close of submissions. Mr Shand in his closing reply in answer to my questions on the causation mechanism said there were multiple landslips, including a slip in the soft soil under the carport post, which came under the definition of "natural landslip". As the defendants did not have an opportunity to address this submission on the extent of "natural landslip", I directed the parties to file further submissions, if they wished.[18] All parties did so, and this issue is addressed at [239]-[248].

Issues

[60] Counsel filed an agreed statement of issues, which include liability, remediation costs and damages.[19] As this decision is concerned with a determination

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17 *Goodier v The Earthquake Commission* [2018] NZHC 2980.
18 *Goodier v The Earthquake Commission* HC Whanganui CIV-2016-483-16, 18 December 2018.
19 The agreed statement of issues is set out in Appendix I.

on liability only, the issues from the agreed statement of issues for determination in this trial are:

(a) What is the nature and extent of the natural disaster damage to the "residential building" (as defined in the EQC Act), and/or to the "home" (as defined in the Policy)?

(b) Was the damage caused by the landslip?

(c) What is the liability of IAG and EQC for the cost to reinstate?

(d) Are EQC and/or IAG liable for general damages?

(e) Does the s 124 Notice have any impact on EQC and IAG's liability or obligations?

[61] The real focus of the evidence and the submissions at the trial was whether the additional damage to the home and garage was caused by the landslip. Because determination of the first two issues rely essentially on the same evidence and resolution of the factual contest among the parties, I propose to deal with them together.

PART II – THE LEGAL ISSUES: CAUSATION

Natural disaster damage

[62] EQC and IAG are liable under the Act and the Policy respectively for damage to the Goodiers' Property if it is caused by a "natural disaster", which includes landslips.[20] Under the EQC Act, "natural disaster damage" is defined as meaning any physical loss or damage to the Property occurring, or that is imminent, as a direct result of a natural disaster.[21]

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[20] See [25]–[48] of this judgment.
[21] Section 2(1).

[63] In *Bligh v Earthquake Commission*, Nation J traversed the recent decisions on natural disaster damage and helpfully summarised them as follows:[22]

> [17] … In *O'Loughlin v Tower Insurance Ltd*, Asher J considered, in the context of the insurance of a house from loss or damage from accident, the word "physical" meant loss or damage to the materials and structures that constituted the body of the house. It does not include purely economic loss.
>
> [18] In *Earthquake Commission v Insurance Council of New Zealand*, the Full Court of the High Court, considered that, for there to be "natural disaster damage" to residential land for the purposes of the EQC Act, there needed to be a physical change or loss to the body of the land that had occurred, or was imminent, as a direct result of the earthquakes, and which affected the use or amenity of the land.
>
> [19] In *Kraal v Earthquake Commission*, the Court of Appeal considered whether there was "natural disaster damage" to a house where the threat of rockfall and other hazards caused by the earthquake had led to a local council prohibiting persons from approaching or entering the house. The Court of Appeal held that the loss flowing from the insured person's inability to use the house in these circumstances was not "natural disaster damage". The Court of Appeal held that, in the case of a house, there had to be "physical" loss or damage to the structure and materials of the house. They held that "damage" had to be harm done to something that impairs its value or usefulness.
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> [20] In *Sadat v Tower Insurance Ltd*, a claim was made that there was further cracking to foundations already in a damaged, inadequate state. The Court held the plaintiffs had been unable to prove:
>
> > … that any such further damage made a material difference to the structural integrity of the foundations as a whole, or that the work required to remedy that damage was any different than what would have been required to remedy all the problems.
>
> [21] In *He v Earthquake Commission*, Dunningham J held:
>
> > An insurer should not be required to repair or reinstate something to its condition when new when, observed objectively, there has been no discernible change to the value, amenity or utility of the insured property caused by the natural disaster.
>
> [22] In insurance generally, the damage claimed must be more than de minimis. In *Arrow International Ltd v QBE Insurance (International) Ltd*, McKenzie J said:
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> > Each case must be examined on its own facts to determine when an alteration to the physical state has occurred to an extent which is more than *de minimis* so that the point has been reached where physical damage has happened.

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22 *Bligh v Earthquake Commission & IAG* [2018] NZHC 2102 at [17]-[22] (footnotes omitted).

[64] Nation J then found that:[23]

> … for there to be cover, the damage must be such that it affects the use or amenity of the building. For elements of the building that have a structural or functional purpose, the damage has to affect that structural or functional purpose. Similarly, for elements of the building that have an aesthetic purpose, for example, wall linings such as wallpaper, the damage must affect that aesthetic purpose.

[65] From those authorities, "natural disaster damage" has been held to mean physical loss or damage, or further loss or damage to the insured property, such that it impairs its value or usefulness and is more than minor. Importantly, the damage must be as a direct result of the natural disaster, which has affected the use or amenity of the insured property.

[66] The task for the Court here is to first, identify whether the particular physical damage, alteration or disturbance, if any, that occurred to the structure or materials of the Goodiers' Property was as a direct result of the landslip, and second, to assess how, if at all, any such physical change materially affected the structural integrity or performance of the house for the worse.[24]

[67] In claims for aesthetic damage, the Court must determine whether, having regard to the state of the Property before the landslip, there has been damage that has materially altered the aesthetic value of what was there before the landslip.[25]

The legal contest between the parties: causation

[68] Mr Shand presented the Goodiers' case on the basis that this case should be determined using common sense and logic. He submits that 23 independent witnesses gave evidence of the condition of the Goodiers' house and garage before the landslip and compared it with the damage they described occurring after the landslip on 20 and 21 June 2015. If the Court does not decide that the landslip was the more likely cause of the damage, then, Mr Shand submits, it must find that 26 people were either lying or were mistaken about the condition of the Property before the landslip.[26]

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23 *Bligh*, above n 22, at [26] (footnotes omitted).
24 *Bligh*, above n 22, at [29].
25 At [30].
26 The Goodiers called 26 witnesses, including themselves and their son.

[69] The Goodiers' claim is that all the damage pleaded is landslip-related or exacerbated by the landslip.[27] Mr Shand put forward their case on a two-pronged basis:

(a) losses covered by an insurance policy may exist in the absence of structural damage to the insured property; and

(b) the fact of damage is enough to prove natural disaster damage.

[70] Mr Shand pointed to the s 124 Notice under the Building Act 2004 and the resulting inability of the Goodiers to use or occupy the home as evidence of an insured event which is covered by the Goodiers' Policy. The authority he relied on for that proposition was *Murray v State Farm Fire and Casualty*, a North American case involving insured homes at risk of rockfall which could not be occupied because of that risk.[28] The insurers there argued that while their policies cover actual physical damage, the policies did not cover any losses occasioned by the potential damage that could be caused by future rockfalls.[29] The Court found that all three homes were unsafe for habitation and that the insurance policy providing coverage for "sudden and accidental loss" or an accidental direct physical loss requires only that the property be damaged, not destroyed.[30]

[71] Similarly, in another North American authority, *Hughes v Potomac Insurance Company*, a landslide caused the insured house to be left standing on the edge of a cliff and partially overhanging a newly-formed 30 foot cliff.[31] The Court there held that the insured's policy covered damage to the dwelling as a result of the landslide, even if there was only minor damage to the house itself.[32] The Court accepted that a dwelling or a dwelling building connotes a place fit for occupancy, being a safe place in which to dwell or live.[33]

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27 The particulars of damage are set out at [87].
28 *Murray v State Farm Fire and Casualty Co* 509 SE 2d 1 (WVa 1998).
29 *Murray*, above n 28, at 16.
30 At 17.
31 *Hughes v Potomac Insurance Company* 199 CalApp 2d 239 (1962).
32 At 4.
33 At 4.

[72] Mr Shand relied upon these cases to demonstrate that losses covered by an insurance policy, including those rendering a property unusable or uninhabitable, may exist in the absence of structural damage to the insured property. He says the relevance of those cases to the Goodiers is that they had to vacate their Property, because the s 124 Notice stated their house was dangerous and uninhabitable.

[73] In closing, Mr Shand also relied on the High Court case *C & S Kelly Properties Ltd v EQC and Southern Response* to submit that the evidence of the Goodiers and other lay witnesses, in the face of contradictory geotechnical evidence, ought to be given considerable weight.[34] He submitted that the lay witnesses' evidence confirms that the damage to the house and garage did not exist before the landslip but was evident following the landslip. Therefore, he submits, common sense, logic, and 23 independent people prove that, more likely than not, the damage that exists to the house and garage was caused by the landslip.

[74] The defendants say that the Goodiers' case is flawed because they have not proved that the damage was caused by the landslip. In the absence of expert geotechnical and/or engineering evidence identifying the mechanism by which the landslip could have caused the damage to the Property, the Goodiers have not proved that the damage was caused directly by the landslip, or ruled out any likelihood of another cause.

[75] The defendants also submit that the North American authorities provide no assistance to the case at hand: the authorities are dealing with different insurance contexts and different policy wording to the New Zealand policies, including the IAG Policy and the EQC Act.

[76] I accept that the EQC legislation provides a unique scheme which is incomparable to the underlying law in North America. Further, the North American authorities cited by Mr Shand have been considered by a Full Bench of this Court in

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[34] *C&S Kelly Properties Ltd v Earthquake Commission and Southern Response Earthquake Service* Ltd [2015] NZHC 1690 at [291]-[307].

Earthquake Commission v Insurance Council of New Zealand Inc and held to be unhelpful in the EQC Act context.[35]

[77] Finally, in *Kraal v Earthquake Commission*, the Court of the Appeal discussed what constitutes physical loss or damage under the EQC Act.[36] In that case, the plaintiff argued that the red zone imposed in the wake of the Christchurch earthquakes caused the physical deprivation of use of the plaintiff's property, similar to the s 124 Notice on the Goodiers' Property. It was submitted this came within the definition of physical loss or damage in the Act. The Court rejected this approach:

> [78] We conclude that the plain meaning, the context, the legislative history, and relevant authorities in New Zealand, Australia and England, all support an interpretation of the ECA [the EQC Act] that limits the meaning of natural disaster damage to physical damage that arises from a natural disaster, and which is suffered by the land and buildings that are the subject of the claim, or such loss or damage when it results from an authorised measure to mitigate the damage from the disaster, or when such loss or damage is imminent. If the property is a building there must be a physical disturbance to the materials or structure of that building, and the ECA does not extend to a claim for losses arising from an event which has not physically affected the body of the property.

[78] *Kraal* is both authoritative and persuasive. I therefore proceed on the basis that the Goodiers must prove there has been actual physical loss or damage to the Property, as a result of the landslip. The s 124 Notice therefore has no impact on EQC or IAG's liability or obligations.[37]

Burden of proof

[79] As a general principle of insurance law, it is the insured person who must make out his or her claim under the policy of insurance.[38] The fundamental principle is that

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35 *Earthquake Commission v Insurance Council of New Zealand Inc* [2014] NZHC 3138, [2015] 2 NZLR 381 at [79].

36 *Krall v Earthquake Commission* [2015] NZCA 13, [2015] 2 NZLR 589 at [73]-[79].

37 In any event, Mr Hoobin, the building control team leader for the Whanganui District Council, explained that the Goodiers could have the s 124 Notice on the Property lifted if the sewer and stormwater pipes are replaced, an appropriately-constructed fence or barrier on the headscarp is erected, and on receipt of an engineer's report on the extent of work required for the house, garage, and driveway to be safely used. In the event that an engineer considers there is no further risk to the building, then a retaining wall to mitigate the damage or any further damage can be constructed with the dwelling occupied. Mr Hoobin said that the Council would give encouragement to the Goodiers and cooperate with their engineer to have them reinstated in the Property.

38 *He v Earthquake Commission* [2017] NZHC 2136 at [55].

it is the plaintiff who has the burden of proving, on the balance of probabilities, every material fact of his or her cause of action.[39]

[80] In *ACC v Ambros*, the Court of Appeal held that, while the legal burden to prove causation in accident compensation cases remains with the claimant, a tactical burden, defined as the burden resting upon a party who appears to be at risk of losing on a given issue at a particular point in trial, passes to the defendant when "some evidence of causation has been adduced by the plaintiff."[40] Supporting this, the Court then referred to the nature of the accident compensation regime:[41]

> In our view, it is in keeping with the non-adversarial nature of the claim and review process that the Corporation should investigate all possible aspects of a claim, at least in a rudimentary fashion and as far as practicable. It would thus be in a position, once the matter comes before court, to lead evidence on all points that were investigated, whether strictly obliged to or not.

[81] A similar argument was raised in relation to the Earthquake Commission in *Bligh v Earthquake Commission and IAG*.[42] In that case, the plaintiff submitted that if he could establish a "credible prima facie evidential foundation" for his allegations, the burden would effectively shift to the defendants.[43] Nation J held however that the evidential (or tactical, to use the language of Glazebrook J in *ACC v Ambros*) burden will shift only if there is credible evidence supporting the plaintiff's allegations to the extent required to meet the burden of proof which is on the plaintiff.[44]

[82] Ultimately, whether the burden of proof is satisfied must be considered having regard to all the evidence that has been presented.[45] Applying this to the present case, the Goodiers will fail to have met the burden of proof upon them if, when considering all the evidence, the Court finds that they have not proved the particular material allegation on the balance of probabilities.

[83] In another attempt to shift the burden of proof in *He v Earthquake Commission,* the plaintiff argued that because EQC had already paid the plaintiff $15,934.08 and

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39 *He*, above n 38, at [55]; and *Bligh*, above n 22, at [31].
40 *Accident Compensation Corporation v Ambros* [2007] NZCA 304, [2008] 1 NZLR 340 at [63].
41 At [64].
42 *Bligh*, above n 22.
43 *Bligh*, above n 22, at [33].
44 At [34].
45 At [34].

asserted that was its full liability, EQC had assumed the burden of proving that the payment met its replacement obligation under the Act – that is, EQC had assumed the burden of showing that that payment discharged its obligation for the damage to the property it had purported to settle.[46] This argument was rejected by Dunningham J, who found that the material dispute was not whether the agreed repairs could be achieved for the sum paid by EQC, but whether EQC and the insurers had underestimated the extent of the damage and the extent of their obligation to repair.[47] The Judge was satisfied that the plaintiff had the burden, on the balance of probabilities, to establish that an insured loss had been suffered, and the extent of that loss.[48]

[84] The Goodiers therefore have the burden of proving that there has been natural disaster damage. This means they must prove there has been damage of the kind pleaded, and that the damage was caused by the landslip.

PART III – THE FACTUAL CONTEST

[85] The Goodiers claim that the landslip on 20 June 2015 caused sudden and accidental loss to the house and garage. In their initial statement of claim, the Goodiers made a building and a land claim. Of the 11 particulars of damage first pleaded, eight of the 11 particulars related to the driveway and downslope (the land). The following are the particulars that related to the building:

> (3) differential settlement of the dwelling's foundation with a floor level differential of 64 millimetres;
> (4) cracking in the concrete foundation slab;
> …
> (6) a sticking garage door.

[86] The claim also pleaded that the house was at imminent risk of further evacuation of land, including land supporting the accessway, re-inundation of land, and further settlement of the foundation, causing warping of the walls, doors, and the garage door.

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46 *He*, above n 38, at [56].
47 At [58].
48 At [59].

[87] As noted above, during the trial, extensive evidence was adduced on behalf of the Goodiers, traversing a substantial number of elements of damage to the Goodiers' house and garage, which were not the subject of an amended pleading. In the amended statement of claim, the full particulars of alleged damage were pleaded as follows:

Land loss

(1) evacuated and inundated land with eight metres of the dwelling;
(2) evacuated land supporting the accessway, including evacuation of the cobble driveway and concrete path;

Driveway and downslope

(3) damage to the sewer and storm water pipework leading from the dwelling;
(4) collapse of a timber pole retaining wall;
(5) collapse of the stairs associated with the timber pole retaining wall;
(6) rotation and slumping of a second timber pole retaining wall;
(7) rotation and slumping of two concrete crib walls;
(8) collapse of two children's playhouses downslope of the accessway;
(9) driveway and walkway collapse;

The house

(10) differential settlement of the dwelling's floors and foundation(s);
(11) a fall in the lounge floor of 24mm over approximately 3m;
(12) lounge bay window sloping in the same direction as the floor;
(13) crack at the base of the bay window lining and architrave junction;
(14) rotation or bending of the lounge bay window corner post;
(15) roof leaks;
(16) cracking to internal plasterboard linings;
(17) doors that are jamming;
(18) cracks in the firebox;
(19) movement to the timber cross bracing beneath and behind the firebox;
(20) the cracking and separation of pavers; and
(21) movement of pavers adjacent to the support pole at ground level directly below the southwest corner of the lounge;

The garage

(22) movement of the garage concrete foundation slab relative to the house;
(23) movement of the eastern garage wall in relation to the house;
(24) garage floor and foundation subsiding;
(25) cracking in the garage concrete floor slab;
(26) exacerbation of existing cracking in the garage concrete floor slab;
(27) a crack across the junction between the workshop and garage;
(28) a void beneath slab and adjacent to pile;
(29) pile lean(s);

(30) separation of weatherboards on the eastern elevation between the new and existing garage;
(31) weatherboards out of level;
(32) the sticking or jamming of the garage door;
(33) slumping below the gully trap on the eastern elevation between the new and existing garage;
(34) misalignment in the roof and gutter lines above the garage door;

[88] In describing the factual contest among the parties, I do not propose to deal with each of the particulars of damage individually. Rather, the particulars can be grouped into two categories of damage: damage to the house and damage to the garage.

[89] The particulars relating to land loss and the driveway and downslope do not need further consideration, as the Goodiers abandoned their s 19 claims under the EQC Act against EQC and IAG at the commencement of the trial. However, Mr Shand explained that although the s 19 claim was abandoned, the reason for its inclusion in the amended claim at the close of the trial was to preserve the Goodiers' claim for general damages. I granted leave to file the amended claim, but disallowed the claim for general damages on the grounds that general damages are unavailable where there is no breach or a wrong.[49] The Goodiers have abandoned their s 19 claim against IAG and in the absence of a finding of wrong or breach, general damages are not available.[50]

[90] Before addressing the respective claims of damage to the house and to the garage, I deal with the issues arising in this order:

(i) the flaw alleged by the defendants and the geotechnical evidence;

(ii) the lay witnesses' evidence;

(iii) the expert witnesses' evidence; and

(iv) summaries of evidence positions.

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49 *Goodier v The Earthquake Commission*, above n 17, at [63].
50 *Jarden v Lumley General Insurance (NZ) Ltd* [2015] NZHC 1427 at [129], a finding which was not overturned on appeal in *Jarden v Lumley General Insurance (NZ) Ltd* [2016] NZCA 193.

[91] Before doing so, however, I address the flaw which is alleged by the defendants to be fatal to the Goodiers' case.

The flaw alleged by the defendants: the landslip "mechanism"

[92] From the outset, Mr Scott for EQC forewarned that the evidence called for the Goodiers did not support their claim that the elements of alleged damage to the house and garage have been caused by the landslip. During the evidence of the Goodiers' experts, including their cross-examination, EQC consistently challenged the Goodiers' lack of structural engineering and geotechnical evidence to establish how the alleged damage to the house had been caused by the landslip.

[93] This "alleged flaw" became the major point of contest between the Goodiers and the defendants, both in relation to the lay witnesses' evidence, which canvassed their observations of the Property before and after the landslip, and the experts' evidence.

[94] What follows is an overview of the evidence provided by each party as to the landslip "mechanism", that is, how the landslip occurred on 20 and 21 June 2015 and any resulting damage. In essence, the geotechnical evidence distinguishes the soils upon which the Goodiers' house was built and the soils at the southern end of the garage around the southwest pile, the retaining walls, and the driveway. This evidence is critical to my findings on causation.

The geotechnical evidence

[95] Mr Peters, a geotechnical engineer, was called by EQC and IAG. His evidence was the only geotechnical evidence called. He took soil samples from the Property around the Goodiers' house, and from those, he reached the conclusion that the landslip could not have caused the claimed damage to the house. This is because the house site was excavated into competent ground which remained unaffected by the landslip. However, as part of the site development, loose fill soils with retaining walls were placed on the outside edge of the southern slope. Mr Peters called the slope edge the "escarpment", where the land movement occurred during the landslip. He then

described how the different geology over the Goodiers' Property dictated the mechanism of the landslip.

[96] First, Mr Peters described the nature of the soils under the house. The siteworks undertaken prior to the construction of the house had resulted in a number of stepped cuts into the soil. He described the building platform as comprising "mixtures of dense sand and stiff silt deposits of the Shakespeare Group". His investigations confirmed that the foundations of the house are likely embedded in this undisturbed stiff/dense material.

[97] In contrast, however, nearly half of the garage was likely to have been founded initially on the silts and sands of the Shakespeare Group overlain with a natural mantle of more weathered soils and colluvium. Mr Peters said it is likely to be for this reason that the builder of the garage added a pile at the southwest corner and thickened the perimeter ring foundation in the corner of the garage to better support the garage. Comparatively, the soils around and beneath the pile and supporting the retaining walls and driveway were fill-type soils. It is these soils that evacuated during the landslip.

[98] Mr Peters concluded that the soils that slipped in the June 2015 landslip did not comprise any of the undisturbed silt and sand deposits of the type that existed under the house. They comprise solely the soils that have been excavated and placed downslope, together with some of the natural-formed softer soils which underlay the fill. He illustrated this by means of a photograph, which shows the house embedded on the stiff/dense building platform.

[99] In his view, the landslip was a combination of a rotational and translational landslip that resulted in a saturated debris flow down the slope below. It was triggered

by the heavy rainfall event on 20 and 21 June 2015, and the landslip was primarily the result of a reduction of the effective strength of the near soils at the top of the slope, because of their saturation and softening by the heavy rainfall. The mechanism for the landslip, therefore, was the saturation of the predominantly loose-fill soils on the edge of the slope, both above and below the retaining walls, which were not robust enough to resist failure. Once the ground started to move, the walls collapsed and evacuated along with the soils.

[100] Importantly, the differences in geology between the escarpment slope and under the house, in his view, made the likelihood of the landslip extending back under the house very unlikely. His conclusion was reinforced by the lack of any observable evidence of further land damage post-slip, in the vicinity of the house and garage, other than at the southwest corner of the garage. He gave evidence that none of his inspections of the Property since the landslip, along with his initial assessment of photographs on site, have revealed any observable evidence of such land damage. He points the following facts to support this view:

(a) No cracks in the land back from the escarpment have opened up either at the time or subsequently.

(b) There is no evidence of land subsidence consistent with any wider area of land having been affected by the landslip.

(c) The well-laid pavers on the driveway are good indicators of land movement, as they are sensitive to land movement occurring underneath them. The pavers leading back to the house are undisturbed. If land movement had occurred below them, they would have displaced and been separated over a wide area and not just in localised pockets.

The "vibration" theory

[101] In contrast, no geotechnical evidence was called for the Goodiers. Prior to trial, no evidence on behalf of the Goodiers had been directed at the mechanism of how the landslip caused the claimed damage to the house and structure of the garage.

Mr Csiba was called as the Goodiers' structural engineer expert, who had prepared a three-page engineering report, two and a half years before the trial. His brief of evidence was attached to this report, and contained a summary that the damage to the Property was caused by the landslip and the consequential movement and differential settlement of the land.

[102] In response to the defendants' evidence from Mr Donnan and Mr Smith that the floor levels and wall verticalities are a result of the complex structure of the house and its relatively poor standard of construction, Mr Csiba responded by saying the observed condition of the house after the landslip was beyond the acceptable level to be considered as-built defects. In his initial brief of evidence, however, Mr Csiba did not provide an explanation of how the landslip had caused the damage to the house and garage.

[103] After the trial commenced, Mr Csiba inserted belatedly, and for the first time, into the joint experts' report, his "vibration" theory. This theory was advanced by Mr Csiba as the mechanism by which he believed the landslip caused the damage. In essence, the theory is that while the ground beneath the house may be adequate for the structure, in an event such as a significant landslip there may be ground movement and/or vibration that causes structures to vibrate, shudder and rock without permanent deformation of the land. The description was encapsulated in the joint experts' report as follows:

> 5.2.5 While the Geotech Engineer assess the ground beneath the house to be adequate for the structure, in an event, such as an earthquake and significant landslip, there is ground movement and/or vibration that causes structures to vibrate, shudder and rock without permanent deformation of the land. This, for example, is a regular occurrence with earthquakes, where a house will rock causing cracking to linings etc. but no permanent or visible damage to the land. This vibration or movement to the structure can be sufficient to cause break the seal on sealants, soldered joint, pop roofing nails and the like.

[104] Under cross-examination, Mr Csiba was unable to give a coherent explanation of how the vibration occurs in a landslip or how the land will perform in a landslip, apart from his own personal observation of Christchurch properties having suffered earthquake damage and his own personal observation of a post-landslip event in different circumstances. He accepted he was not an expert engineering geologist or a

geotechnical engineer, and ultimately could not provide an explanation as to how or what causes change or the extent of such damage.

[105] I turn now to consider the lay witness evidence, and then the expert evidence, as it relates to the damage pleaded.

The lay witnesses' evidence

[106] Mr and Mrs Goodier gave evidence, as did their son, Louis Goodier. They also called a further 23 lay witnesses who gave evidence about their observations of the house and garage. Because of the commonality and observations on the respective elements of damage amongst the lay witnesses' evidence, I have described their evidence in general terms.

The Goodiers' evidence

[107] Mr Goodier Senior has been a qualified builder with 30 years' experience. He and Mrs Goodier purchased the Property in 2004 and, as all of the lay witnesses confirmed, the Goodiers maintained their house to a very high standard. Mrs Goodier was noted for her meticulous housekeeping and the interior decoration of the house, and Mr Goodier, as a builder, maintained the house with the help of his sons and apprentices over the time that they lived there.

[108] In 2013, the Goodiers were preparing to sell the Property. It was placed on the market for sale with accompanying photographs, showing the Property as neat and well-maintained. The Goodiers withdrew their Property from sale, as it did not achieve the desired market price. Contrary to the allegations made by the defendants' engineer that the house was poorly constructed, the Goodiers emphasised that the house won awards when it was built. Mr Goodier gave evidence that he would have noticed any of the damage to the house which Mr Smith, the defendants' engineer, says was pre-existing damage.

[109] Mr Goodier described the 10 minutes before the landslip occurred. He noticed that some of the driveway pavers had gaps between them, and dropped at the edge of the driveway. It was serious enough for him to remove the car from the garage and

park it at the end of the driveway. After going back into the garage, "a loud indescribable noise" was heard. Mr and Mrs Goodier went outside and saw that the fence at the side of the driveway had gone, along with the flower border and the trees.

[110] When Mr Goodier notified EQC of the landslip on 22 June 2015, he advised that the landslip was extensive. He advised that the garage had been compromised and, as the garage is attached to the dwelling, the dwelling is no longer level and all services had been broken off by the slip, making the house uninhabitable. On 3 July, Mr Goodier called EQC again and expressed his concern about the dwelling levels and that the floor had dropped in the front room, which was the room closest to the slip. He did not make reference to other damage within the house. The other damage referred to by Mr Goodier in subsequent calls to EQC and to Mr Williamson on 28 August 2015 was to the southwest corner of the garage, including the wall linings and the dog wash area, the gap under the garage door, and the crack in the slab, and in relation to the house, the carport post including the lounge floor above and the pavers below, together with the brick courtyard at the rear of the ground floor flat. The other items of damage, such as wall damage, the cold joint, the firebox, the doors in the downstairs flat, the wall linings in the house and the roof were not mentioned.

[111] During the hearing, Mr Goodier gave further evidence of structural damage to the house which occurred after the slip. This included the wall lining damage and movement, the levels of the ground and first floor sloping noticeably towards the slip, the level of the lounge also sloping towards the slip, and exterior damage to the house consistent with the slip. The garage slab, in Mr Goodier's view, moved and cracked and now slopes. There is also damage to the interior and exterior of the garage.

[112] Mr Goodier acknowledged that the house had been subjected to heavy rain since it was built in 1977, but says only after the landslip was there any effect on the soils at the property. Since the landslip, the paving tiles near the post under the lounge have slumped, and the post has sunk. In relation to the geotechnical evidence about the soils next to the post, in a garden bed, he believed the post settled because of the movement of the underlying soil towards the landslip.[51] He accepted, however, that

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[51] "Settlement" in geotechnical engineering terms is defined as the vertical movement of the ground, caused by stresses in the earth. It includes subsidence, "caving in", or sinking of the ground.

the pavers leading to the house are undisturbed, while the ones nearest the garage are very disturbed or gone altogether. He gave evidence that the pavers near the carport have slumped and were not this way before the landslip.

[113] He disagreed strongly with the defendants' proposition that the post under the lounge would have settled in the softer soil about the time of construction. He was categorical in his evidence that there was no damage to the post, pavers, or floor in the lounge above the post prior to the landslip. He maintains the lounge floor beams that are visible in the carport are twisted and the joints have opened up. He said none of these aspects were this way before the landslip.

[114] Mr Goodier also gave evidence that some of the internal doors on the landslip side of the house that were working before the landslip now do not open and close freely. There are cracks in gib board and paintwork on the landslip side of the house. He points to the fact that they had previously redecorated and there was no damage before. The toilet door in the downstairs flat and first floor lounge worked perfectly well before the slip, yet the following day when the Goodiers went back to the Property, the same doors were not shutting properly.

[115] Lastly, Mr Goodier gave evidence that the electric garage door began sticking after the landslip, the roof of the house is now leaking in at least two places, the garage roof is also leaking, and the firebox now has cracks in it.

[116] In summary, Mr Goodier's evidence concerned the following four elements that changed after the landslip:

(a) The garage. The garage door was an electric garage door and he says was working perfectly well before the landslip. He maintains that after the landslip, it no longer worked and he had to adjust it in order for the family to remove larger items from the house. The garage floor also now has a slope which it did not have prior to the landslip. Although there were hairline cracks in the garage slab prior to the landslip, during the landslip these cracks opened up and new and bigger cracks appeared. The garage roof now also leaks after the slip.

(b) The sticking doors. He gave evidence internal doors on the landslip slide of the house that were working before the landslip now do not open and close freely.

(c) The sloping floors. He says the living room floor now slopes to the corner nearest the slip and it did not slope prior to the slip. He disagrees that the slope in the southwest corner of the lounge was due to settlement at the time of construction, because the slope was not there before the landslip. Mr Goodier emphasised that he had lived in the house for 11 years and did not notice any slopes. Within 24 hours of the landslip, he immediately noticed that the floors were sloping and he would have noticed any sloping beforehand because of his familiarity with the house and his own building experience.

(d) The roof. The roof was in sound condition before the slip, but is now leaking in two places, causing damage.

[117] Mrs Goodier gave similar evidence. She emphasised that their house was an architecturally-designed house and had won awards. It was a sound house until the landslip, in her view, and she was critical of the suggestion that the house was not well constructed. Because she and Mr Goodier have "an eye for perfection", with Mr Goodier working on many old and new builds in his 30 years of carpentry and building career, she claims "there is no way we would have purchased a poorly-built or constructed property."

[118] Mrs Goodier described the sloping garage floor, the roof leaks, the sticking doors, the sloping floors in the lounge, the cracks to the firebox and the cracked wall linings. She gave evidence all of this damage occurred as a result of the landslip. Mrs Goodier emphasised that her background is in painting and decorating which she has been doing since her husband was a builder in the United Kingdom. The wall linings were all painted by her and were in top quality condition. A number of the lay witnesses confirmed that Mrs Goodier is an extremely good painter and decorator.

[119] Mrs Goodier maintains there were no cracks in the walls of their house and the finishing was very good prior to the landslip. After the landslip, the cracks appeared and are presently visible. She also refers to open joints in the weatherboard where the garage is pulling away from the house. She says they were not there before the landslip.

[120] The Goodiers' son, Louis Goodier, described that both of his parents were incredibly proud of their house and have maintained the Property fastidiously. His last visit to the Property prior to the landslip in June was February 2015. The house was at that time recently decorated and was in excellent condition. He next visited the house two months after the landslip.

[121] He described the cracks in the walls and floors that were immediately visible. He described doors not opening and closing correctly and expressed his view that the house had moved, causing damage throughout the house. The damage is distributed, he says, exponentially, starting with very little damage in the furthest corner of the house from the landslip, but a significant number of damaged elements closer to the slip. He noted the carport area, with the pavers nearest the southwest corner having sunk and moved, and gaps have opened. He observed the slope in the garage, in contrast with his experience of being in the garage during his high school years. He described that prior to the slip, a join between the two concrete slabs had been installed by his father. The join had been present for several years but after the landslip the join was cracked the entire length.

[122] Louis Goodier said that the garage floor had hairline cracks before the slip, but they were not as prominent as they appear now. The garage now also has leaks when it did not previously, and he refutes that the staining of the Douglas Fir beam is natural, as suggested by Mr Smith. He was adamant that the leaks and the water ingress during rain did not exist prior to the landslip.

[123] The further damage he observed was that the garage door no longer opened without detaching it from the chain, there is a noticeable slope towards the TV corner in the lounge post-slip, there were no cracks in the firebox when he helped repaint the house in 2009 but they are evident now, and the carport area was level with no gaps

between the pavers prior to the slip. He also gave evidence that immediately after the landslip, two leaks developed in the house, one above the window and the top of the stairs and a more visually significant leak in the front room, the latter destroying the contents of the storage units including his childhood toys.

The evidence of friends and clients

[124] In addition to the Goodiers giving evidence about their observations both before and after the landslip, they called a further 23 witnesses. Those witnesses range from friends that they have known for many years, to clients of Mrs Goodier, tradesmen, and acquaintances who have visited the house prior to and after the landslip. They gave evidence on their observations of the elements of the house and garage which they observed had been damaged after the landslip. Those elements included the sticking doors both downstairs and upstairs, visible cracked wall linings, the bowed pole in the upstairs lounge, the sloping floors upstairs, and the general "feel of the rooms," the cracking to the garage floor, and the garage leaks in the roof.

[125] There are some witnesses that deserve particular mention. Mr Hardy gave evidence that he wanted to buy the house when it was on the market and the Goodiers purchased it. He and his wife looked at the features very closely. He did not notice any sloping floors, cracking to walls, or any doors that did not open or close freely. He asserted these are things he would have noticed because he came from an English mining village where tunnels underneath the land often caused settlement, and so cracks in footings or cracks in the plaster are the first things for which one checks when looking to buy a house. He therefore disputes that there were issues with the house that occurred at the time of construction, before the landslip, because he did not notice these things in 2004.[52]

[126] There were also a number of witnesses who had been friends with Mr and Mrs Goodier for years. Some helped them into their home in 2004. Others had kept in touch by visiting or staying with the Goodiers and had observed Mrs Goodier's redecoration after 2013. Mrs Layman had visited the Goodiers about five times a

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[52] The Hardys' own house was on the market at the same time and the reason he and his wife did not purchase the Goodiers' house was that their own house had not sold in time.

month between 2004 and 2008, when she and her family moved from Whanganui. She had helped the Goodiers move into the Property, and she described it as being in sound condition with no repairs required. She also remembered visiting the Property after Mrs Goodier had redecorated sometime between 2013 and 2015, and recalled there were no cracks in the walls then as Mrs Goodier had freshly painted them. After the landslip, she noticed the main stairwell and the living areas of the home "are now full of cracks that were not there before the landslip", and described the sloping floors in the formal lounge and upstairs rooms.

[127] Mrs Tidey and her husband had also known the Goodiers for several years and visited their house many times before the slip. The day after the landslip, when she and her husband helped the Goodiers take some of their possessions out of the Property for immediate use, she noticed changes to the house. She, too, observed that the front door would not open properly. She noticed the cracking to the garage floor that she did not notice before the slip, the bowed pole in the lounge, and the sloping floors in the upstairs dining room and lounge. She conceded in cross-examination, however, that she did not open the door herself and could not explain the gap under the door and the absence of scrape marks on the tiles.

[128] Similarly, Mrs Cadogan, who did gardening for the Goodiers six hours weekly, had observed the house before the slip when the rooms had been recently decorated and were in good condition. She did not see any cracks on the walls. After selling their own house in 2012, Mr and Mrs Cadogan stayed with the Goodiers on the ground floor for a fortnight. At that time, Mrs Cadogan was confident there were definitely no sloping floors and the doors into the passage and bathroom downstairs fitted perfectly. A week after the slip, she brought food to the Goodiers, who were moving their furniture out into another property. She observed the changes to the house and in particular, the sloping floor in the lounge towards the corner window, the sloping floors in the office upstairs and the sticking doors downstairs, particularly in the flat where she and her husband had stayed in 2012.

[129] Tradesmen, such as Mr Wye, an electrician, and Mr Briggs, a carpet layer, gave evidence that they spent a lot of time at the Goodiers' house prior to the slip over a period of many years. For Mr Wye, the house was like a second home to him, and the

damage to the house after the slip was obvious. He visited the house six months after the landslip and noticed the cracking to the walls, the doors that did not work properly and sloping floors in two small bedrooms overlooking the garage. Mr Briggs knew the Goodiers for about 10 years prior to the landslip and he too knew the house well. He gave very similar evidence of the damage as Mr Wye and the Goodiers.

[130] Lastly, a retired accountant, Ms Heron, who had known the Goodiers for eight years and stayed in the flat downstairs before the landslip, also gave evidence of the differences she noted to the misalignment of doors, particularly the doors to the flat, the cracked wall linings, the sloping floors in the study and the formal dining room, where she had eaten many meals, and the bow in the formal dining room pole which she had not noticed before. She found the feel of the rooms disconcerting when she visited after the slip on 22 June. When challenged about the direction of the study slope being opposite to the direction of the landslip by the defendants in light of the survey levels, Ms Heron was certain that it sloped towards the slip.

[131] I have not described in detail the evidence of the other 16 witnesses, who had either visited the Goodiers' house as clients in respect of the dog grooming business that Mrs Goodier ran, or as friends or acquaintances for social occasions. They each described areas of the house in which they had spent time, and described the differences before and after the slip. Some of those witnesses visited the Goodiers' house within days of the landslip. Others visited sometime later, with a number visiting the house just months before giving evidence. I have not set out the detail of their evidence, but this should not be taken to mean that it has not been considered. I deal with the lay witness evidence further in Part IV of this decision under the resolution of credibility challenges and in my conclusions.[53]

The experts' evidence

[132] The Goodiers called two experts, Mr Csiba, a structural engineer, and Mr Hunt, an experienced building and quantity surveyor. Both experts believed the damage to the Goodiers' house and garage was as a result of movement of soil that is attributable to the natural landslip. No geotechnical expert was called for the Goodiers.

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[53] See [219]–[222] of this judgment.

[133] EQC and IAG jointly called three experts: Mr Smith, a structural engineer, Mr Peters, a geotechnical engineer, and Mr Archer, a cadastral surveyor. EQC also called Mr Donnan, an EQC building advisor; Mr Williamson, a building contractor with EQC who visited and assessed the Goodiers' Property in August 2015 and November 2016; and Mr Searle, an advisor to EQC, who gave evidence about the settlement of the Goodiers' claim.

[134] Following notification by the Goodiers of their claim, EQC had asked Tonkin & Taylor, its contracted engineers, to assess the damage. Tonkin & Taylor first assessed the Property on 2 July 2015 and then on two further occasions: 6 July and 25 August. Initial assessment reports were issued on 4 August and 2 September 2015, and then a final report was completed on 14 September 2015. Although the initial assessments said there was landslip damage to the garage, the subsequent report concluded that there was no movement in the garage slab or superstructure as a result of the landslip. After taking into account the Goodiers' views, the final report concluded that none of the damage highlighted by the Goodiers were caused by the landslip or the storm event.[54]

[135] Following my direction,[55] four experts for the respective parties, Mr Csiba, Mr Hunt, Mr Smith and Mr Donnan, met on 18 September 2018 after the trial had commenced, to confer on the matters at issue in the proceedings and attempt to reach agreement. The opinion of the joint experts was received after the trial commenced. The experts were unable to wholly agree on any of the issues relating to the garage, lounge, internal wall linings, leaks or driveway reconstruction. They did agree, however, that as a result of the slip, there was evacuation of ground beneath the garage slab and foundation of the garage along the southwest elevation, exposing the base of the perimeter foundation beam and concrete pile on the southwest corner.[56]

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54 Tonkin & Taylor then, rather than removing the garage as an item of damage, moved it to be included as part of the imminent loss on the basis that it was likely to suffer the same damage within 12 months as the headscarp regressed slightly. That is why EQC's settlement has always included payment for the underpinning of the corner of the garage which has been undermined in the landslip.

55 *Goodier v The Earthquake Commission* HC Whanganui CIV-2016-483-16, 14 September 2018 at [9].

56 I note the report reads "northeast" corner, but this is obviously a mistake as it is the southwest corner which was exposed.

[136] I set out their positions, including the matters of agreement and points of disagreement, under two categories below, the house and the garage.

The house

[137] The experts at the joint meeting agreed that levels taken over the lounge established that the southwest corner of the lounge is 24 millimetres lower than the floor level in the centre of the room. In addition, there is damage to the tiled hearth, a drop in the floor and windowsills towards the southwest corner of the lounge, movement at the joints in the diagonal bracing along the west side of the carport, deformation of the post supporting the bay window in the northwest corner of the lounge, catching of the door in the northeast corner of the lounge, and movement between the stairs and wall framing under the stairs.

[138] The factual contest between the parties in relation to the claimed damage to the house centres on the differing views of the experts on the landslip mechanism, as discussed above.[57] Mr Csiba and Mr Hunt for the Goodiers contend that the claimed damage to the house occurred as a result of the landslip. Mr Csiba attributes the movement of the ground beneath the house to vibration or movement from the landslip along the escarpment along the southern end of the Property. Mr Hunt describes the damage he saw as consistent with a Property which has experienced land subsidence.

[139] Mr Smith and Mr Donnan rely on Mr Peters' geotechnical evidence, which Mr Smith confirmed from his own observations of the soil and structure beneath the house. They attribute the damage to the house to the complex architectural design of the house which has different foundation types, three floors (two of which have split levels) and a high gabled roof system with many intersecting junctures which produce high wind loads on the structure. The combination of these factors can cause differential settlement during the life of the house, and a greater likelihood of movement between different parts of the structure.

[140] In summary, the position for EQC and IAG is that the elements of the damaged superstructure of the Goodiers' house is, for the most part, a reflection of historical

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[57] See [94]–[104] of this judgment.

movement in the structure due to the complexity of the floor diaphragms, the deformations in the beam supporting the upper floors, inadequate lateral bracing, and thermal and moisture-induced movement as a result of the house having been unoccupied for the past three years.

[141] All four experts gave evidence and were cross-examined on a range of claimed damage by the Goodiers, traversing cracks to the internal wall linings, sloping floors, leaks and water ingress through the roof, carport post foundations, the cracks to the garage and dog wash area linings, the downstairs sticking doors, and the crack at the cold joint between the workshop and garage slab.

[142] I canvass some, but not all, of the evidence on damage, to illustrate the differences among the parties' respective experts, because the resolution of the factual contest ultimately turns on the determination of causation and timing.

(a) Sloping floors in the first-storey lounge

[143] The principal area of contention among the experts in relation to the house was the sloping floors in the lounge and surrounding rooms at first floor level. Levels taken over the lounge establish that the southwest corner of the lounge is 24 millimetres lower than the floor level in the centre of the room, and there is damage to the tiled hearth, a drop in the floor and windowsills towards the southwest corner of the lounge, movements in some of the joints, deformation of the post supporting the bay window, a catching of the door, and the cracking of the firebox. The Goodiers' experts explain that the ground movements associated with the landslip have caused settlement of the post supporting the southwest corner of the lounge and the other movements and deformation identified above.

[144] In the experts' joint report, the Goodiers' experts, Mr Csiba and Mr Hunt, point to the paving stones, which have settled directly around the timber post supporting the lounge under the carport. They note that they have been laid for 15 to 20 years and the gaps that have formed have not filled up with dust or debris, as would be expected if the settlement had occurred well before the landslip. They consider that the post in the northwest corner of the lounge (the bay window post) is bowed towards the fall in the lounge floor, evidencing movement in the superstructure resulting from the

subsidence of the carport/lounge support post located on the southwest corner. They say the recent damage to the bay window trims is consistent with this.

[145] The defendants' experts, Mr Smith and Mr Donnan, disagree with this explanation. They say that Mr Peters' geotechnical evidence supports their view that the foundation to the post at the southwest corner of the lounge was founded on "a layer of softer silt that contained organic matter". They say the dislevelment in the southwest corner is predominantly explained by a settlement of the foundation supporting the post due to the foundation being founded on unsuitable ground.

[146] Mr Smith accepted that the southernmost post of the carport appears to have settled or slumped by possibly 20 millimetres or so, causing the slope or subsidence in the lounge floor and the gap in the connection of the southernmost post (at its base) and the centre post (at its top). He identifies two reasons for the settlement. The first is that the carport was not constructed in accordance with the building plans. It was not built on the ground floor slab, which was to extend under the carport with the same shallow perimeter wall that was to be built around the rest of the house slab "on grade". Instead, three timber posts support the upper floor along the western side of the carport. These three posts were each founded on a separate, small concrete footing, which appear to be shallow.

[147] Second, there is soft organic soil, identified by Mr Peters as topsoil overlain with 350 millimetres of loose fill immediately under and around the southernmost post-footing of the carport, and the pavers adjacent to the garden, which is unsuitable material. He concludes that there has been settlement under the southern post-footing caused by the foundation being constructed over fill materials and topsoil. In addition, the dozen pavers adjacent to the garden area, where the southern post is founded, have also settled, with gaps opening up between them on settlement. The settlement of the post and the soils adjacent, he says, have not been caused by ground movements during the landslip. Rather, it is due to the presence of unsuitable material immediately under that footing and the pavers.

[148] Mr Donnan supports Mr Smith's assessment and conclusions and gave evidence of his measurements of the window joinery operating freely, the level of the

fireplace, and the timber surrounds of the fireplace, together with his observations of the wall linings, to conclude that the settlement of the southern post occurred almost immediately following construction of this part of the house.

(b) Hearth cracking

[149] Mr Hunt, in raising issues with the mantelpiece levels in the lounge and the levels on the lounge window, gave evidence of his observations that the rimu junction on the right-hand side of the fireplace had opened up slightly. There was cracking in the fireplace and in the tiles, and on the levels he took, he measured a two millimetre fall over an 800 millimetre level width or length of the level on top of the fireplace surround. He contrasted that with Mr Donnan's evidence that the fireplace mantel is "dead level", noting that there was differential movement between the internal junction between the tiles on the wall and the tiles on the floor. Mr Hunt concluded that these were signs of movement, which head towards the landslip in the same way the garage does, and the worst of the cracking in the walls was also on the southern plane of the house.

[150] The defendants' experts believe the movement underneath the lounge occurred in the early years following construction. They say it is these movements that have caused the cracking of the hearth as the hearth has moved with the floor, and occurred long before the landslip. They point to scuffing on the surface of the carpet underneath the doors to show that the scuffing occurred prior to the landslip as the dwelling has not been occupied since the landslip and the doors have not been regularly used. Similarly, they say, the post in the northwest corner of the lounge is not located in an area subjected to ground movements associated with the landslip and any bowing of it would have been present prior to the landslip.

(c) Internal wall linings of the house

[151] The Goodiers rely on the ground movement and/or "vibration theory", outlined above, to explain the damage to the wall linings. Mr Csiba's evidence is that as in earthquakes a house will rock, causing the cracking to linings but there may be no permanent or visible damage to the land. In his opinion, the vibration or movement to the structure is sufficient to cause a break on the seal of sealants or joints or pop

roofing nails. He also referred in his report to "cracking on the elements observed, drummy walls," but was unable to identify to the Court which walls were drummy, that is, making a sound indicating hollowness. He explained that the cracking was all joint cracking, as opposed to diagonal cracking from structural movement.

[152] In contrast, the defendants remained adamant that no ground movements had occurred under the footprint of the dwelling as a result of the landslip. They consider the cracking present at the gib-sheet joints is a feature of early gib board-lined timber framed dwellings, which were not adequately taped. They also point to the fact that no photographs of the wall linings were produced until two years after the landslip and there was no reference to them when the Goodiers reported the damage to EQC.

[153] There was considerable disagreement among the experts about the cause of cracking to the walls of the house. Mr Donnan, supported by Mr Smith, attributed the cracking in wall linings to two aspects. First, to the house being locked up since the landslip, causing moisture issues from thermal movements created by heat between winter and summer. Second, they point to movement in the beams. Mr Donnan reinforced his view, following his further visit to the site, that there is likely to be continuing movement in parts of the house, caused by the lack of proper sufficient bracing elements and the way in which the two timber beams spanned the entire width of the downstairs workshop area, which is a large, open-plan space. He considered these beams are over-spanning, as a result of which the beams have deflected or dropped in the middle. He said that this, in addition to the general complexity of the house design and construction and the way in which the gib sheets have been installed in the house, makes it unsurprising that there are cracks at various sheet joints throughout the house. A number of those joint cracks would have existed in the past and have been painted over in the past as a result of redecorating, but will commonly open up again over time. Mr Donnan says the likelihood of such joint cracking in these circumstances is well understood by residential builders.

[154] Mr Hunt checked moisture levels in the house and disagreed that moisture had any influence in the wall linings or trim which show cracking. He relied on his significant experience assessing leaky buildings and his weathertightness expertise. In his view, even if the house was built 30 years ago and without the same level of

bracing as there is now, it would not be common for cracks to appear in a house over a period of time, unless the house experiences "an event". As to the movement in the beams, in response to a question from me, Mr Hunt explained that if the beams in the workshop sag and the floor moves with the beams, it could cause cracking in the linings above the beam which supports them as a result of the walls or the floors moving. However, in his view, this would have occurred early in the life of the house, over the first five or six years of construction, and any decorating and repair work is likely to have remedied hairline cracks. As the house was built in 1975, five or six years later is 1980 or 1981, a long time before the Goodiers bought or lived in the house.

(d) Roof leaks

[155] It was agreed that water had leaked above the east wall of the family dining room and above the south wall of the stairs to the first floor. The Goodiers say this damage and leaking was not evident prior to the landslip. The Goodiers' experts say that the leaks would have been caused by vibration from ground movement that causes structures to vibrate, shudder and rock without deformation to the land. There is evidence, they say, of movement in the substructure of the building that would have caused disruption to the roof structure and cladding.

[156] The defendants do not accept the Goodiers' experts' views. They point to the absence of evidence identifying how the leaks have been caused by ground movements associated with the landslip, or where ground movements are present that could potentially affect the roof. They rely on Mr Peters' evidence, which established the dwelling is constructed on competent ground, and that no ground movements have occurred under the footprint of the dwelling. They suspect that leakage occurred around the firebox prior to the landslip, partly because the dwelling is 44 years old and the roof appears to have had little or no maintenance. They dispute any of the leaks have been caused by movements associated with the landslip.

(e) Doors in the downstairs flat and lounge

[157] The Goodiers submit that the doors were sticking and had done so ever since the landslip. Mr Hunt rejected Mr Smith's theory that an unoccupied dwelling causes

variation in the moisture content of the timber and is therefore the likely reason for the doors sticking, for the same reason he rejected that the cracking of the internal wall linings was due to internal moisture.[58] He said that the two doors that are jamming relate to the dropped lounge floor and the ground floor toilet, located directly adjacent to the stair. He says that it is evident the damage to the dwelling, including the jamming doors, is more or less on the same axis, which is the exterior line closest to the landslip.

[158] The defendants submitted that the only mechanism suggested by Mr Csiba for the Goodiers is the vibration mechanism, which by definition does not involve any permanent deformation to the land, and therefore no potential for differential settlement of the foundations. Mr Scott for EQC says that the highest Mr Csiba can attribute his vibration mechanism to the downstairs area was to say that the vibrations from the landslip might cause some "small change" or make a "slight change to the condition" of a door. The defendants say further that the Goodiers' evidence did not disclose the pre-existing condition of those doors. In particular, the evidence showed that the two main doors in the downstairs flat showed signs of jamming for many years in the form of worn paint and wearing on the carpet in the lounge in front of the door stopper. This demonstrated that the door has been catching on the carpet for some time. Both Mr Donnan and Mr Smith asserted that none of the issues with the doors can therefore be related to the landslip.

(f) The firebox

[159] The Goodiers submit that the firebox had cracks both behind and beneath it, as a result of the landslip. Mr Goodier accepted that he painted over some cracks in 2009, but was adamant there were none visible prior to the landslip. Louis Goodier said there were no cracks in 2009 when he helped paint the firebox. Mr Hunt explained that while there may have been some small cracks before the slip, the landslip exacerbated those cracks. The firebox is positioned between the bay window and the lowest point of the lounge floor, being the southwest corner. The cladding on the firebox is rigid solid plaster which has cracked, and water is entering in behind the

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58 See [153] of this judgment.

cladding. He says the cracks to the firebox are therefore consistent with the landslip movement.

[160] The defendants, however, submit that the cracks in the firebox can be seen in the only usable pre-landslip photograph of that area. There has been no evidence that the post which supports this firebox has settled, let alone in the landslip. Mr Smith gave evidence that the cracks were unrelated to the landslip. He said a waterproof membrane had been put over the top of the firebox around 2014, suggesting some problems with the water ingress. Unsurprisingly, he says, the cracks have deteriorated in the five years since the March 2013 photograph. Mr Donnan explained that once cracking occurs, the lime in the cement or plaster will leach out and become more worn. He says the observable cracks occurred a long time before the landslip as a result of the manner of construction, wind loadings and heat from internal fire.

The garage

(a) Matters of agreement on the garage claim

[161] In the opinion of the joint experts, there was agreement that the landslip in June 2015 resulted in a loss of support under the southwest corner of the garage. The garage was an extension to the south wall of the house, built in 1989. All four experts were of the view that during the preparation of the foundation for the garage, the builder or designer recognised that the ground under the southwest corner of the garage was unreliable. To strengthen the support, the builder arranged for and installed a piled foundation at this corner, and increased the size of the perimeter foundation beams along the western and southern walls.

[162] The experts noted that following the slip, the Goodiers experienced the tilted door catching on the garage slab, cracks in the garage slab, cracks between the gib board sheets to the gib board lining to the south wall of the dog wash area, gaps in the external weatherboard cladding at the northeast corner of the garage, and a cavity under the gully trap outside the northeast corner of the garage.

[163] From the survey levels undertaken on the floor of the garage and workshop, the experts also noted that the workshop floor was not level and there was a 40

millimetre fall in an easterly direction along the workshop/garage wall. These were measured and the falls were recorded. The experts all noted that the level in the southwest corner of the garage slab was -26, rather than +26, as shown on the original levels undertaken on the floor of the garage in February 2016.[59] These were measured to confirm the garage floor is not level, and had differing falls recorded as between the Goodiers and the defendants' experts. The falls on the slab were towards the slip. Despite significant falls around the perimeter of the garage slab, the survey results showed the central northern portion of the slab is relatively flat. It is also noted that there is cracking present in the garage concrete floor slab, and there is a 6 millimetre gap between the south wall foundation to the workshop and the garage slab either side of the opening between the garage and workshop.

[164] Following the slip, the experts agreed that there would have been minimal further evacuation of ground from under the southwest corner of the garage slab and foundation.

(b) Points of disagreement on the garage claim

[165] The Goodiers' experts believed that the level of the garage slab, which is lowest in the southwest corner, was directly affected by the landslip. They say that ground movements associated with the landslip have caused the southern portion of the slab to be out of level. The garage slab has then suffered settlement or lateral movement as a result of ground movements associated with the landslip, which in turn has caused loss of support to the foundations and damaged the damp-proof membrane located under the southeast corner of the slab where the land evacuated.

[166] Similarly, the Goodier experts say that the three transverse cracks and the diagonal crack in the northeast corner at the construction joint between the workshop floor and the garage slab have been caused by ground movements associated with the landslip.

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[59] Mr Archer from A & C Surveyors undertook further levels, using more accurate equipment, and recorded the level as -26.

[167] For the first time, and not included in his brief, Mr Csiba at the joint experts' meeting described the concrete slab in the garage as "drummy on top" when tested with a hammer. He then gave evidence at the trial that "drummy" meant there were voids under the slab, caused by the landslip, and this has impacted on the integrity of the slab. He did not undertake any investigation of the area under the garage and there was no evidence that confirmed there were voids under the garage slab.

[168] The Goodier experts further say that the six millimetre crack gapping that exists on the north end of the garage, the gaps in the weatherboards, and the garage door catching have all resulted from the movements of the concrete slab, which has moved in the direction of the landslip. This, they say, has caused the floor levelling compound to crack and shatter, water to enter the gaps in the boards into the garage and workshop space and the garage door to catch on the northern end, with a gap under the southern end of the door closest to the face of the slip. Similarly, cracking in weatherboards, the cracking to gib board wall linings and the cavity under the gully trap, they say, are also associated with movements caused by the landslip.

[169] The EQC and IAG experts fundamentally disagreed with the Goodiers' experts that there had been a lateral movement of the garage slab as a result of ground movements associated with the landslip. From the outset, and at the joint expert conference, Mr Smith assessed the thickened perimeter edge beams and the southwest piled foundation as capable of supporting that portion of the southwest corner of the garage that had suffered loss of support. At the time of the joint experts' meeting, Mr Smith believed that the southwest garage pile was loadbearing, although his opinion changed after Mr Hunt's site visit and evidence during the trial. He accepted that minor vertical movements may have occurred as the load was transferred to the pile, unless the affected soil had already relaxed and the load was already being carried by the pile before the landslip.

[170] The defendants' experts further say that the levels they took in respect of the sides of the west, south and east sides of the garage slab established that there were significant variations in the levels around the perimeter of the slab, but the central northern portion of the slab was level. The inconsistencies in the levels of the garage slab, they say, support their view that construction of the slab was to a low standard

and the levels seem unlikely to have changed as a result of the landslip. They could find no other damage consistent with the floor of the garage having subsided.

[171] In relation to cracks in the slab, the defendants' experts say that the eroded edges show they pre-existed the landslip with no detectable recent movement of the cracks. The gap between the foundation of the south wall of the workshop and the garage slab is unrelated to the landslip, otherwise cracking would be present in the tiling in the entry area between the garage and the dwelling. The diagonal crack in the northeast corner is a shrinkage movement crack and any movement since the floor levelling compound was applied to the joint of the slab between the workshop and garage slab, in their view, is minor and consistent with thermal movement of the slab.

[172] The defendants' experts said the gaps in weatherboards were likely due to poor workmanship or timber movements during, or soon after, construction. Because the variations in the levels of the floor of the garage at the door opening are attributable to the low standard of the construction of the slab and because the floor had not been poured at a uniform slope, the catching of the garage door is due to movements other than of the southern portion of the garage slab.

[173] Finally, because of the geotechnical evidence of the nature of the land around the gully trap, the defendants' experts believed the cavity under the gully trap outside the northeast corner of the garage was unaffected by the landslip, and they assessed the cracking to gib board wall linings is due to the low-standard jointing of the gib board.

(c) EQC's opening position

[174] Consistent with the joint expert report, EQC opened its case at the hearing by stating that the southwest corner of the garage was supported by a large concrete pile. Mr Scott said this was the explanation for EQC's first approach to the site, when their experts believed the landslip appeared to have caused significant damage, not only to the driveway but also to the corner of the garage. The geotechnical engineers for EQC who first saw the site "just assumed the landslip would have caused some damage to this corner of the garage". However, on closer inspection, the engineers concluded that the southwest corner was in fact supported by the large concrete pile.

[175] This was not the way the garage was designed. The consent drawings show a conventional shallow perimeter ring with no pile. Mr Scott said that EQC's engineering evidence will show that this part of the garage was intended to be self-supporting and not dependent for its support on the fills soils that have now slipped away or on the retaining wall that was already present when the garage was built.

[176] At the outset of the trial, the position of both EQC and IAG was that the fill soils had been placed behind a retaining wall adjacent to the corner of the garage and were not integral to the support of the garage.

[177] During the trial, Mr Hunt revisited the Property before giving his evidence. On that revisit, Mr Hunt made a discovery about the southwest pile which prompted a change in his pretrial briefed evidence and the EQC engineering evidence. Because of its significance, I set out the details of the site revisit and the evidence which followed from Mr Hunt and from Mr Smith.

(d) Mr Hunt's site revisit

[178] At the conclusion of Mr Csiba's evidence, but prior to his re-examination, Mr Hunt and Mr Csiba visited the Property overnight. Mr Hunt said the reason for his visit was to review his evidence about the extent of remediation required to the Property. He wanted to check aspects about the southwest corner to the garage, having listened to the cross-examination of Mr Csiba.

[179] Although Mr Csiba was present at the same time as Mr Hunt during the re-examination of the site, Mr Csiba did not give evidence about the overnight visit the following morning, either before or during his re-examination. Nor did Mr Shand advise the Court that the site had been revisited and that new evidence was to be adduced through Mr Hunt on behalf of the Goodiers, until Mr Csiba had completed his evidence and left.

[180] Mr Hunt, in his evidence, explained what he found on the overnight visit, and sought to produce more than 30 photographs, which he had taken overnight. Following objections from EQC and IAG, I allowed the evidence to be adduced,

provided that the defendants had an adequate opportunity to revisit the site and respond.

[181] Because this is significant evidence, I set out Mr Hunt's description of what he found at the base of the southwest pile of the garage and the photographs he took. He explained that after the dirt was dug out to expose the base of the upper section of the pile, the soil sitting around that pile was very loose, as would be expected after the soil evacuation.

> But what was significant is we scratched away [what] was at the base of the 44 gallon drum [and] there appeared to be a void in the ground and you will see in subsequent photos that will be produced no doubt shortly that the void goes at least as deep as the bottom of the 44 gallon drum. So the other thing I note from the photograph is that the pile is leaning outwards towards the slip. We couldn't get a level on that pile because of the length of the digital level and the thickening on the upper portion of this foundation and the 44 gallon drum.
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> …
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> What initially led me to see the void was that the earth was forming a distinct semi-circular crack around the front face of the 44 gallon drum as I just sort of slowly scraped it away. I got it to a point where you could see the small void at the top but as I dug dirt was wanting to fall backward into the hole, so at that point it was pretty clear that there was some gapping or voiding in or around or possibly under that pile.
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> …
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> … the void is suggesting to me and I'll reiterate I'm not a Geotech engineer but for a void to form there has to be some land that is moving forward either in front of the pile or the pile itself that's perhaps moved slightly to create that, but given the age 30-odd years ago that that was put in any loose soils, there's rainfalls and over time I wouldn't expect to see loose soils to that extent and certainly not voids. They would've long but filled.

[182] In his evidence-in-chief, Mr Hunt confirmed his view that the garage slab had moved slightly towards the landslip at approximately five to six millimetres, and in his view that was consistent with the weatherboard separation on the garage, multiple recently-formed cracks in the garage floor, misaligned roof and gutter lines, and the jammed garage door. He explained to the Court that he considered the roof line above the garage followed the line of the subsidence and he produced photographs to show the misalignment between the roof and the guttering to show the slope towards the landslip.

[183] Under cross-examination, Mr Hunt accepted that the wall verticalities on the corner of the garage and on each side of the door, as well as on the weatherboards, show that the western wall is sloping to the north, the opposite way to the landslip. This, he said, confirmed his theory that as the southwest corner dropped, the roofline has been pulled back towards the building. This, he says, is consistent with the connecting trusses not being pulled from their attachment to the building.

[184] Mr Hunt said that when he used the garage door it jammed, which is consistent in his view with the door tracks being out of alignment and/or plumb. Again, he says this is consistent with movement of the garage. He observed water ingress in the location of the wet-bottomed plate and skirting, correlating to a separation in the weatherboard cladding, but no decay in the building elements. He says that is evidence that the water ingress is a recent development and that the separation occurred since the building was last painted, due to the separation to the painting at the junction. He rejected the proposition from EQC that the cause of the water ingress is sodden soil, having slumped and now sitting against the side of the house, saying that the water is not pooling as it was when he visited, yet the sodden dirt still remains in position.

[185] Finally, Mr Hunt pointed to the cracks in the garage floor as being consistent with the garage moving, and rejected Mr Smith's opinion that the cracking to the garage floor occurred as a result of a poor construction of the garage floor slab. He said further that the separation at the cold joint between the workshop slab and the new garage slab had moved slightly towards the landslip, indicating pressure on the slab consistent with the slab subsiding at the southwest corner. He described the crack as "clean" and not containing debris, which would be expected over the period that the garage has been constructed.

[186] The defendants accepted that Mr Hunt was a qualified and experienced building assessor and quantity surveyor, but challenged Mr Hunt's expertise to give geotechnical engineering evidence. Mr Hunt agreed he was not giving such evidence but was "asking rhetorical questions" because "things don't add up, and so that's the reason why I feel there's been some movement in the garage and around the lounge …".

[187] Mr Csiba, the Goodiers' engineer, observed noticeable cracking to the garage lining at the side of the landslip. The garage foundation, in his view, was designed to structurally rely on the ground below the slab, and the cracking to the slab, which he considered to be differential settlement, and the damage to the superstructure proved to him the dependence of the concrete structure on the subsoil conditions. He rejected the defendants' experts' view about the construction of the garage slab and said there was no reason why a builder should level the finished surface of the garage in the direction in which it now slopes. Mr Csiba, although present with Mr Hunt at the site visit, gave no evidence about the southwest pile.

(e) The defendants' site revisit

[188] After Mr Hunt's site visit during the trial and immediately following his evidence, the EQC engineers and experts attended the site and undertook a further inspection.

[189] The defendants acknowledged that Mr Hunt was correct about the pile not being supported in firm ground, thanked him for undertaking the exercise, and changed their position on the loading support of the garage southwest pile. Mr Smith, the defendants' engineer, explained his conclusions in his revised brief of evidence (emphasis added):

> 41. Despite the builder seemingly making an attempt to found this pile on competent ground, it is now apparent that this was not achieved. The scala penetrometer test adjacent to this pile suggest that the unconsolidated fill soils extend to 2.5m, whereas the pile only extended to 1.1m. It is therefore apparent that the pile was founded on top of 1.4m depth of unconsolidated fill.
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> …
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> 55.3 In terms of the garage, despite the pile having been founded on loose soils, and not therefore being capable of supporting the load from the southwest corner of the garage, I believe that this would have been the position for many years prior to the landslip. I remain of the opinion that there is no evidence that either the garage as a whole, or the slab, had moved as a consequence of the landslip.
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> …
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> 57. My conclusion in November 2016 when I first inspected the property was that there was no evidence of recent movement as a consequence of the landslip. This was nearly a year and half after the landslip. My opinion was

based on the assumption that the pile in the southwest corner must have been supporting the load in this corner, given the absence of any sign of any movement in the garage.

58. Following Mr Hunt's investigation of the site and production of the photographs that indicated that the pile was not supporting the corner of the garage, I was concerned to review all the evidence against to establish whether there had in fact been any movement caused by the landslip in light of all the information now available.

59. My overall conclusion remains that, other than in the southwest corner, the garage has been constructed in a manner that means it is adequately supported on good ground:

59.1 Now it has been established that the pile, as well as the section of unsupported slab, was founded on unsuitable material, it is likely that early in the life of the garage, the pile became non-load bearing. Put another way, the pile contributed no material support to the garage floor and superstructure.

59.2 Instead, the southwest corner of garage became reliant on the deepened perimeter foundation, along the south and west walls, to transfer the weight (load) from the unsupported corner and suspended pile. The deepened perimeter rests on better ground away from the southwest corner.

59.3 The reason for forming this opinion is that the stiffness of the deepened perimeter beams, and their supporting ground, will have exceeded the stiffness of the unsuitable soil column supporting the pile foundation.

59.4 **With what we know now, it seems clear that for many years, the garage has not relied for its structural support on any of the ground that has fallen away.**

59.5 Further, as recognised by the joint experts, there has been no recognisable deterioration in the soil supporting the garage foundation in the three years since the landslip.

[190] It is a matter of record from the Whanganui District Council file that the garage was consented and added to the Goodiers' house in 1989, approximately 13-14 years after the house was built. Mr Smith advised the Court that the consent drawings were fairly minimal and in terms of the foundation show a fairly basic 100 millimetre unreinforced concrete slab with perimeter ring footing approximately 450 millimetres deep, 300 millimetres of which was to be below ground. The perimeter ring shows two D12 rods running horizontally.

[191] However, Mr Smith says this is not what was constructed in the southwest corner, which is the corner immediately adjacent to the headscarp of the slip. From

photographs taken of the southwest corner of the garage after the landslip, the perimeter ring is thicker than in the drawings, being up to 800 millimetres deep.

[192] Although the Council records do not assist with explaining the changes that were made during construction, Mr Smith considers that:

(a) the corner was intended to be supported on a concrete pile;

(b) at the time the plans for the garage were drawn and consented, there must have been a platform in front of the house on which a garage was to be built with the southern slope retained in some manner;

(c) it seems likely that the builder recognised that the ground platform in the southwest corner was too soft (probably due to fill placed during the excavation of the dwelling in 1975) and not of sufficient strength to support the structure; and

(d) to provide support for the garage, the builder deepened the perimeter foundation in order to transfer the weight from the unsupported corner and the suspended pile.

[193] To summarise Mr Smith's position, initially Mr Smith said that the southwest corner of the garage was not dependent for its support on the fill soils that have now slipped away, but was supported by the southwest pile which was placed there because the soils and/or the retaining wall were clearly considered not to be of sufficient strength to support this corner of the garage.

[194] In his revised brief of evidence following his own reinspection of the site, Mr Smith confirmed the observation of Mr Hunt that the southwest pile was founded on unsuitable material, namely the fill soils that had slipped away. In his view, therefore, it was likely that early in the life of the garage, the pile became non-load bearing. Instead, the southwest corner became reliant on the deepened perimeter foundation. This is a change from both the opening of EQC's case and Mr Smith's first brief of evidence.

[195] However, Mr Smith's overall conclusion remains the same: the garage has not relied for its structural support on any of the ground that has fallen away. Because the pile was not contributing materially to the support of this corner of the garage, Mr Smith says the loss of soils under this corner, which is relatively shallow, and the failure of the adjacent retaining wall, has not caused any damage or identifiable movement to the garage.

[196] He said further that the floor level survey in the garage records a fall of a low point of -26 millimetres in the southwest corner. He acknowledges that this potentially could have been caused by settlement occurring as a result of the landslip, but in his opinion this variation and numerous other variations in the floor levels of the garage are not assessed as having been caused or materially affected by the landslip. In his opinion, they are the result of poor construction tolerances and some possible minor movements soon after construction, resulting from the ineffective founding of the pile.

[197] Mr Smith concluded that the southwest pile, having been founded on loose soils, was not capable of supporting the load from the southwest corner of the garage and this would have been the position for many years prior to the landslip. He remained of the view that there is no evidence that either the garage as a whole or the slab had moved as a consequence of the landslip. Nevertheless, he still recommended that the southwest corner foundation be underpinned with two eight-metre piles, and that a retaining wall be provided to restrain the soil along the south side of the garage.

Summary of positions

[198] To summarise the parties' positions, the Goodiers' evidence and that of the lay witnesses called in support describe the damage that they have observed to the house and garage after the landslip. They contrast those items of damage with their observations before the landslip to demonstrate that all those items of damage described by them were caused by the landslip. The Goodiers' experts, in summary, gave evidence that the variation in levels of slab in the garage, the slab cracking in the garage, the gaps in weatherboards in the garage, the garage door catching, the cavity under the gully trap, cracking to gib board wall linings, and cracking in weatherboards were all caused by land movements associated with the landslip.

[199] Following Mr Hunt's revisit to the site, he identified considerably more particulars of damage, which were subsequently pleaded. The most substantial addition was Mr Hunt's opinion expressed during the trial that there was lateral movement of the garage slab and garage, relative to the house, as a result of the landslip, consistent with the garage's loss of support from the southwest pile. The weatherboard separation, recently-formed cracks in the garage floor, misaligned roof and gutter lines, and jammed garage door are, in his opinion, are all signs that the garage has moved as a result of the landslip. Mr Csiba, the Goodiers' engineer, described his vibration theory as the mechanism which caused damage to the house, raising this for the first time at the joint experts' meeting.

[200] On the other hand, the defendants' expert evidence is that any damage to the house occurred prior to the landslip, either at the time of construction or subsequently. Mr Peters gave evidence that there was no evidence that the landslip caused the damage to the Goodiers' house and garage, other than to the soils at the southwest corner of the garage. His geotechnical evidence was that the side of the garage and driveway that had been evacuated by the landslip are built over fill soil foundations, explaining why those parts of the land have evacuated while the rest of the garage and house did not.

[201] Mr Smith concluded that the variations in floor levels in the garage, apart from potentially the southwest corner, were the result of poor construction tolerances and some possible minor movements soon after construction, resulting from the ineffective founding of the southwest pile. In relation to the house, he says there is no evidence of movement in the structure consistent with the house having been damaged as a result of the ground movements associated with the landslip. The floor levels in the house do not show any pattern of settlement consistent with ground movement, and the items of damage described by the Goodiers and their witnesses reflect historical movement in the structure due to the complexity of the floor diaphragms, the deformations in the beams supporting the upper floors, inadequate lateral bracing and thermal and moisture-induced movement.

PART IV – RESOLUTION OF THE FACTUAL AND LEGAL ISSUES

[202] This case falls to be determined on causation. The critical issue is whether the damage to the house and to the garage, as claimed, was caused by the landslip and therefore qualifies as "natural disaster" damage.

[203] As stated earlier, at the commencement of the trial the Goodiers abandoned their claim to their loss of land under s 19 of the EQC Act. Thus, their land and retaining wall claim requires no determination. I ruled that the Goodiers' claim for general damages, as sought in the amended statement of claim, was disallowed. The remaining claim is the building claim under s 18 of the EQC Act relating to the house and garage.

[204] First, I will deal with each of the parties' respective challenges to the credibility of the opposing parties' witnesses. Then, I will deal with the causation of the damage to the Goodiers' house and garage and what the liability is, if any, of each of EQC and IAG.

Credibility of witnesses

[205] The Goodiers, EQC, and IAG each made strong criticisms of the opposing parties' witnesses, both lay witnesses and experts. I propose to deal with the objections under the following headings:

(a) the Goodiers' challenge to the impartiality of EQC's experts;

(b) the Goodiers' challenge to the Tonkin & Taylor evidence;

(c) the defendants' challenge to the Goodiers' lay witnesses; and

(d) the defendants' challenge to the Goodiers' expert witnesses.

The Goodiers' challenge to the impartiality of EQC's experts

[206] Mr Shand for the Goodiers did not make an evidential challenge to the admissibility of the expert opinion from the defendants' witnesses, but submitted that the defendants' expert evidence was tainted by collaboration amongst the experts and

their lack of independence and impartiality. He alleged both in opening and in closing submissions that EQC and IAG had identical theories of the case given their "collaboration". He also alleged that the financial relationship between the expert witnesses and EQC, either because of their employment with EQC or their long working relationships with EQC and their valuable contracts over 20 to 30 years, meant that they were not impartial.

[207] Mr Shand cross-examined EQC witnesses about their own or their employer's relationship with EQC, with questions focused on the receipt of income and rewards for their services to EQC in the past. He established that Mr Peters has been employed by Tonkin & Taylor since 2003, and that EQC paid Tonkin & Taylor significant fees in the year to June 2012, with a further lucrative fee contract for the 2015 financial year. Tonkin & Taylor also shares premises with EQC.

[208] Mr Shand also confirmed that Mr Smith is a consulting engineer to Spencer Holmes, which has a long-running relationship with EQC with concomitant fee-earning rewards. Further, Mr Williamson, a licensed builder, was called by leave during the trial following the Goodiers' challenge to his re-assessment of the garage. He was also cross-examined about his relationship to EQC. He owns and manages his own residential construction firm and was contracted to EQC from 2010 to January 2018 to inspect and scope earthquake-damaged houses and land. Finally, Mr Donnan is employed as a building advisor with EQC and has worked for EQC since 2010, and Mr Searle is employed by EQC as the national operations manager of EQC.

[209] Because of these relationships, Mr Shand submits that the defendants' expert witness evidence should be given less weight. He relied on *O'Loughlin v Tower Insurance Ltd,* where Asher J placed less weight on the evidence of two witnesses, by reason of their regular engagement by Tower with resultant financial rewards.[60]

[210] Mr Shand also points to the defendants' experts changing their evidence after Mr Hunt gave his evidence about the southwest garage pile being non-loadbearing, yet still arrived at the same conclusion that the landslip did not cause the damage to

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60 *O'Loughlin v Tower Insurance Ltd* [2013] NZHC 670, [2013] 3 NZLR 275 at [107].

the garage. He submits this change of evidence was another example of the defendants and their experts collaborating on theories to support their case.

[211] Mr Shand has raised similar submissions in a number of Canterbury earthquake litigation cases, including *Kelly* and *O'Loughlin*.[61] I adopt the approach of Mander J to the same objections raised in *Kelly*, summarised as follows:[62]

> (a) An element of commerciality in the relationship between a party to a proceeding is relevant when assessing the reliance and weight to be placed upon the evidence given by that person.
>
> (b) A fee-paying relationship does not render such evidence inadmissible.
>
> (c) When assessing such a challenge, the inquiry will focus upon the nature and scope of the relationship between the parties.
>
> (d) A relationship of employment, where the expert is wholly reliant on the party as a source of income, is relevant and bears upon their independence, or ability to be independent.

[212] I deal with the defendants' experts' change of evidence, and the weight I attach to their evidence, in the resolution of the factual dispute and the difference between the experts.

The Goodiers' challenge to the Tonkin & Taylor evidence

[213] Mr Shand further submits that the defendants' evidence is weakened by previous assessment errors fundamental to the defendants' case. During the trial, the Goodiers placed reliance on the initial Tonkin & Taylor report dated 4 August 2015 from a geotechnical engineer who was not called. This report stated that there had been landslip damage with cracking in the garage concrete foundation. The two subsequent Tonkin & Taylor reports revised that assessment, with the final version stating that the building estimator inspected inside the garage and no physical damage was observed. The estimator was Mr Williamson. Mr Shand suggested that something underhand occurred in the way the final Tonkin & Taylor report of 14 September 2015 was prepared for the outcome in that matter to have so changed.

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61 *Kelly*, above n 34, at [150]–[162] and *O'Loughlin*, above n 60.
62 *Kelly*, above n 34, at [148].

[214] EQC explained that this landslip affected hundreds of houses in the area. Properties were being triaged to ensure life risk was being dealt with and the worst affected houses were identified. Reports then needed to be prepared for about 200 properties. Some of EQC's standard procedures were not followed. Rather than EQC contractors, namely assessors and estimators/builders, going to the properties first, the engineering geologists from Tonkin & Taylor visited the properties first. Tonkin & Taylor concluded that the southwest corner of the garage was damaged and needed to be repaired. EQC then had one of its sets of assessors and estimators, Mr Williamson, go back to the Property. On his assessment, he concluded that there were no signs of recent settlement or movement.

[215] After completing the assessment, Mr Williamson sent an email to Tonkin & Taylor confirming his findings in respect of the garage, which included in his view that there was a "historic crack in the slab and the internal/external wall linings showed no signs of any recent movement that could be linked to the gap under the garage door". Notwithstanding this, Tonkin & Taylor included the garage as part of the imminent risk loss, on the basis that the garage was likely to suffer further undermining of the garage foundation, resulting in localised minor cracking and warping of the walls, doors and garage door within the next 12 months as the headscarp regressed.

[216] In short, once the house and garage were inspected by an experienced builder and EQC estimator, EQC formed a firmer view as to the nature and extent of the damage. Ordinarily this would have occurred before Tonkin & Taylor looked at the Property, but for practical reasons relating to the scale of the event, it occurred after in this instance.

[217] I accept the defendants' submission that Mr Williamson's contemporaneous conclusion is consistent with Mr Smith's and Mr Donnan's subsequent analysis of the same elements of the structure. Either way, EQC's settlement has always included payment for the underpinning of the corner of the garage.

[218] In turn, the defendants raise a strong challenge to all the witnesses called by the Goodiers, both their lay witnesses and the experts.

The defendants' challenge to the Goodiers' lay witnesses

[219] First, in relation to the lay witnesses, EQC and IAG challenge the value of the evidence of the 24 lay witnesses called by the Goodiers. Each of the witnesses were cross-examined by counsel for both defendants who challenged their independence and objectivity. Both counsel submitted that the circumstances in which the lay witnesses viewed the house after the landslip coloured their observations, because the witnesses knew there was litigation with the insurers and because the Goodiers had pre-identified the damage by orange-stickering throughout the house.

[220] The defendants claim that the lay witnesses' evidence was tainted by heightened awareness and confirmation bias. Their evidence, counsel say, has limited utility in any event in the absence of expert evidence establishing a mechanism by which the landslip could have caused the damage described by the lay witnesses. Mr Scott provided examples of the "unreliability of lay witnesses' evidence" where the detail of their evidence did not reconcile with their actual recollection or when survey levels confirmed the opposite slope from what they described.

[221] While it is correct that the vast majority of the witnesses had been asked to go back to the house in the months prior to this trial to prepare briefs of evidence to assist the Goodiers in this litigation, when cross-examined about their knowledge of particular aspects of the house, almost all of the witnesses were able to verify which particular parts of the house they knew well and accepted that there were other aspects of the house that they were unable to comment upon. It is, however, correct, as the defendants submit, that a number of the briefs of evidence contained common paragraphs and one witness did not accept that she had signed the version of the brief of evidence that was put before her during the trial.

[222] I accept that the accuracy of the lay witnesses' observations on the various elements of damage should be treated with caution, particularly in relation to the timing of the damage. For reasons which I canvass under the "resolution of the legal issues", their evidence, although honestly given, does not resolve the issue of causation of the damage.

The defendants' challenge to the Goodiers' expert witnesses

[223] I record the defendants also challenged the expert evidence called on behalf of the Goodiers. Counsel for the defendants were highly critical of the way in which the Goodiers' expert evidence had been prepared. They assert that neither Mr Hunt nor Mr Csiba have complied with their responsibilities under the Code of Conduct for expert witnesses: they gave conclusory opinions only, and did not provide their reasons for concluding how the damage had occurred or the assumptions each had made.

[224] I record that neither Mr Shand nor EQC or IAG sought evidential rulings in relation to the admissibility of the expert evidence. As both sets of challenges relate to the quality of the evidence given by the experts and the weight to be attached to it, I have dealt with them, both in relation to the framework above at [211] and in the context of the resolution of the differences among the experts, in my findings on causation and my conclusions on the particulars of pleaded damage.

Causation

[225] Throughout the trial, in the evidence and in the submissions, the principal issue for determination is whether the damage to the garage and the house was caused by the landslip.

[226] The obvious landslip damage to the Goodiers' Property, as shown in the photographs and described by Mr Peters, caused a 40 metre wide slip to the southwest of the Property, along the length of the Goodiers' driveway and under the southwest corner of the garage. The slip destroyed four un-engineered retaining walls, two children's playhouses downslope of these walls, and drainage services, for which the Goodiers have received payment.[63]

[227] The Goodiers' expanded building claim alleging damage to their house and garage by the landslip on 20 June 2015 requires an identification of, and proof on the balance of probabilities, that the landslip caused the pleaded elements of damage. Mr Shand closed the Goodiers' case, submitting that "common sense, logic and 24

[63] See [16] of this judgment.

independent people prove that more likely than not the damage that exists to the house was caused by the landslip." Further, he submits the defendants' evidence is tainted by collaboration and lack of independence, and is weakened by previous assessment errors fundamental to their case.

[228] In closing, EQC again referred to the flaw in the Goodiers' case, that they had failed to call any evidence, geotechnical or otherwise, that demonstrated a mechanism which could have resulted in the landslip causing differential settlement to the foundations of the house and thereby damage to elements of the house. IAG supports EQC's position in relation to the causation of the alleged damage.

[229] I turn, then, to the critical geotechnical evidence.

The mechanism

[230] Mr Peters' evidence in summary was:

(a) the Goodiers' house is founded upon firm soils being Shakespeare Group deposits;

(b) when building the house, the excavations were undertaken into the firm soils and the house sits on a series of benches cut into these firm deposits;

(c) in contrast, nearly half of the garage, the edge of the driveway and the retaining walls were founded on more weathered soils and colluvium, or loose-fill soils;

(d) the mechanism for the landslip was the saturation of the predominantly loose-fill soils on the edge of the slope above and below the retaining walls, which were not robust enough to resist failure; and

(e) the mechanism for the landslip has not damaged the land under the foundations of the house because the house is founded on firm soils.

[231] As confirmation of his opinion, Mr Peters pointed to the undisturbed pavers on the driveway leading back to the house, over approximately eight to 10 metres. If land movement had occurred, he said the pavers would have been displaced and separated over a wide area. He produced photographs of such displaced pavers from other affected sites.

[232] Although the Goodiers amended their pleadings to allege that all elements of the pleaded damage were caused by the single landslip, the Goodiers have not provided a causative link between the landslip at the head escarpment and the damage to the Property, particularly the 20-millimetre vertical settlement under the carport post/lounge post, which is well back from the edge of the driveway. The pavers between the edge of the driveway and the post were all intact and showed no signs of movement after the landslip occurred in June 2015.

[233] There was no challenge to Mr Peters' geotechnical examination of the soils. Indeed, Mr Shand relied on Mr Peters' expertise to confirm the nature of the soft soils around the house and under the lounge post. The nub of Mr Peters' evidence is that the mechanism for the landslip has not damaged the land under the foundation of the house, because the house was built on firm soils.

[234] The only mechanism described by Mr Csiba is a vibration mechanism which, at its highest, might cause some "small change" or make a "slight change to the condition" of a door. His "vibration theory" was not foreshadowed or explained in accepted engineering terms and appeared to be a theory proposed by Mr Csiba after the trial began. Mr Csiba's evidence did not provide a sufficient, cogent basis upon which to critically examine Mr Peters' evidence or reject his conclusions. Nor did Mr Csiba's evidence appropriately address the issue of how the landslip caused the damage to the house.

[235] Mr Peters, as the only geotechnical engineer, rejected Mr Csiba's opinion and differentiated between a landslip mechanism and earthquake shaking. He stated that landslips involve saturated soils, which move and fluidise "so the opportunity for any vibration from a fluidised flow is non-existent." Mr Peters was not cross-examined on this evidence.

[236] Mr Csiba accepted the following propositions in cross-examination:

(a) he is not a geotechnical engineer, but said he is a structural engineer who can interpret geotechnical conditions affecting the structure;

(b) his vibration theory does not result in permanent land deformation or deformation to the foundation slab of the house;

(c) his vibration theory that the landslip could cause vibration or shuddering without permanent land deformation is a geotechnical issue;

(d) Mr Peters' findings that the house foundations are likely embedded in undisturbed soil; and

(e) the ground floor of the house is "flat as a pancake".

[237] In reaching my conclusions on causation, I prefer the evidence of Mr Peters. His evidence was the only geotechnical evidence and it was not substantively or effectively challenged. I reject Mr Csiba's "vibration theory" as a mechanism for the cause of damage. Mr Csiba, as he concedes, is not a geotechnical engineer and his theory was advanced without any reasoning or supporting engineering data or research. In preferring Mr Peters' evidence, I have been mindful of the contractual and commercial nature of the relationship between Tonkin & Taylor, which employs Mr Peters, and EQC. Despite his cross-examination on the fiscal gains received by Tonkin & Taylor from EQC, Mr Peters' geotechnical evidence was not challenged. Indeed, Mr Shand relied on it to confirm the nature of the soils on the Goodiers' Property, and closed on Mr Peters' findings. I am satisfied there is no credible basis to impugn Mr Peters' evidence.

[238] I therefore accept the evidence of Mr Peters that the Goodiers' house has been built on undisturbed stiff/dense material. This material was unaffected by the landslip, which comprised the movement of soils that had been excavated and placed downslope of the house and overlaid the ground under the garage.

Causation by "natural landslips"

[239] In addressing the Goodiers' position on the causal connection between the landslip on the headscarp of the driveway and the claimed movement of land under the lounge post, Mr Shand replied that a physical connection between the two was not needed. In his submission, it was sufficient that there was "wetting and movement" of the loose soil beneath the post caused by the same rain event.

[240] As this submission was raised at the very close of the trial, I directed that the parties should address further submissions on this issue, because Mr Shand had implied that the wetting and movement of loose soils beneath the post under the lounge met the definition of a "natural landslip", independent of the landslip which occurred on the driveway.

[241] In response, Mr Shand's submissions purported to clarify that the Goodiers are not suggesting that the ground under the post happened to subside at the same time as, but independently of, the mass evacuation of land that occurred metres from the carport post. Mr Shand referred to the "consensus evidence" that there were multiple landslips at and around the Property. He submitted that the wetting of soils and movement is within the definition of landslip, and that the downward movement of soils under the post occurred at the "same time as the landslip event". In other words, the movement of the soils near the escarpment edge and the movement of the soils near the garage post are all part of the same "landslip event".

[242] Mr Shand's submission that the "wetting" and the "downward movement of soils" beneath the post forms a part of the landslip needs to be carefully assessed under the definition of "natural landslip". The definition in the EQC Act, as set out earlier,[64] provides:

> **natural landslip** means the movement (whether by way of falling, sliding, or flowing, or by a combination thereof) of ground-forming materials composed of natural rock, soil, artificial fill, or a combination of such materials, which, before movement, formed an integral part of the ground; **but does not include the movement of ground due to below-ground subsidence, soil expansion, soil shrinkage, soil compaction, or erosion** [Emphasis added]

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64 At [35].

[243] Both EQC and IAG submit that any such settlement of soils beneath the lounge post does not meet the definition of "natural landslip" for two reasons. First, they contest the Goodiers' submission that the mere wetting and movement of the soils under or adjacent to the post with minimal consequential vertical movement can constitute a landslip. The wetting and movement of soils does not constitute movement "by way of falling, sliding, or flowing, or by a combination thereof" as required. Mr Scott for EQC submits that this reflects the natural and ordinary meaning of landslip in the *Concise Oxford Dictionary*, namely "the sliding down of a mass of earth or rock from a mountain or cliff".[65]

[244] Secondly, Mr Scott submits that the Goodiers are essentially alleging there has been a 20-millimetre vertical consolidation or compaction of soil under the post. Soil compaction is specifically excluded in the definition in the EQC Act.

[245] Mr Peters, who examined the soils underneath the post, found they were compacted and debris-forming. The movement of the soils and how that occurred was not the subject of expert evidence from the Goodiers, other than a cross-examination of Mr Peters who confirmed that the soil was not the same as the ground upon which the house was built, and that the soils were soft by comparison.

[246] The s 2 definition of the EQC Act excludes the "movement of ground to below-ground subsidence" and "soil compaction". If the lounge post moved historically or during this or other rain events as a result of saturation or wetting of the soils, as seems likely, it would fall within the exclusion of movement of ground due to below-ground subsidence, that is shallow soil compaction or subsidence occurring below the immediate surface of the ground.

[247] Further, if the "movement" of the soils by compaction or consolidation was caused by the "wetting" of those soils, then EQC's only coverage is in respect of the residential land, not the residential building. If the damage was caused by heavy rain alone, rather than a "natural landslip", the damage from that rain can only constitute a

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65 Judy Pearsall (ed) *Concise Oxford English Dictionary* (10th ed, Oxford University Press, Oxford, 1999) at 798.

"natural disaster" if the rain event gives rise to a "storm or flood",[66] and EQC's coverage for flood and storm damage is limited to residential land. EQC has already paid the maximum it is liable to pay in relation to residential land, and this was accepted by the Goodiers at the commencement of the trial.

[248] For IAG, Mr Raymond QC submits that unless the movement of land falls within the definition of "natural landslip" under the EQC Act and therefore within the "Natural disaster cover" benefit in the Policy, there is no cover under the Policy for localised settlement or compaction. "Natural disaster cover" under the Policy provides cover for loss to the "home" by "natural disaster" as defined under the EQC Act. Although loss caused by earth movements is excluded, if it comes within the definition of "natural disaster", there would be cover under the Policy's natural disaster benefit. "Natural disaster" is defined, however, as including a "natural landslip … as defined in the EQC Act."

[249] For the reasons canvassed above, I am satisfied that the movement under and around the carport post does not fall within the definition of "natural landslip" under the EQC Act. I therefore reject Mr Shand's submission that EQC and/or IAG is liable for damage from the downward movement soils under the carport post or elsewhere, because soil compaction is excluded from the definition of "natural landslip" and settling or cracking caused by earth movement is not covered under the Policy. EQC has paid the maximum sum it is liable to pay in relation to residential land to the Goodiers.

Damage to the house

[250] The three Goodier family members and 23 lay witnesses described those elements of damage to the house which I have set out in the previous section,[67] all maintaining that they observed the Property prior to the landslip and after the landslip at various stages post-June 2015. As I have already noted, the Goodiers' case was premised on the basis that "common sense and logic" says 23 independent witnesses

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66 Earthquake Commission Act 1993, s 2 "natural disaster".
67 See [106]–[132] of this judgment.

cannot be wrong, when they describe the differences to the house before and after the landslip.

[251] There is no dispute that the items of damage to the house have occurred. The critical issue is when the damage occurred and whether it occurred as a result of the landslip, thus qualifying it as natural disaster damage.[68]

[252] There are two reasons why I have found that the damage to the house was not caused by the landslip. The first is that the house is built on firm ground. The geotechnical evidence, as I have accepted above, shows the house was built on firm soils. The engineering evidence from Mr Smith and the concession from Mr Csiba confirms that the foundation and ground floor of the house is flat and that there has been no deformation in the foundation slab.

[253] Secondly, the mechanism for the landslip, by way of saturation of the loose-fill soils on the edge of the driveway escarpment, did not affect or damage the house because of the firm base upon which the house was built. There is therefore no causative link between the movement of soils down the head escarpment of the slip and the solid soil structure upon which the house is built, some eight to10 metres away. The well-laid pavers on the driveway, which are sensitive to land movement occurring underneath them, indicate clearly that they had not moved; they are undisturbed and were not affected by the natural landslip.

[254] Although there is no requirement on any party to prove, or the Court to find, an alternative cause of damage in these proceedings, the defendants' experts have given another explanation for the likely cause of settlement of the house.

[255] Mr Smith, the engineer, and Mr Donnan, the EQC building assessor, based their assessment of the damage to the Goodiers' house on its poor construction and design. EQC argued that any damage to the house was historical and was due to construction defects over time. They gave evidence that as a result of the complex design and the standard of construction of the house, over time, construction defects were causative of damage to the house.

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[68] See [62]–[67] of this judgment.

[256] Although not required to proffer an alternative explanation for damage, the defendants' experts have highlighted one aspect of the house construction in particular that points to the likely cause of settlement, and that is the carport area and the post supporting the first-floor lounge immediately above the carport. This aspect relates to the damage identified in the south-west corner of the lounge and the sloping floors.[69]

[257] The carport was not built on the extended floor slab of the house, with a perimeter foundation, as shown on the building plans. Instead, the supporting posts were founded on separate, shallow, small concrete footings and in the case of the southern-most post, was placed in loose soils. These soils were described by Mr Peters as containing organic materials susceptible to small amounts of settlement under the load of the structure above.

[258] Mr Smith concluded that the settlement of the post, which led to the floor sloping in the first-floor lounge as the post settled under the load of the lounge, occurred at the time or shortly after construction. He also concluded that the pavers adjacent to the garden area have also settled and could have occurred more recently. Mr Donnan's measurements of the elements in the southwest corner of the lounge also confirmed that the southwest corner was not level before the landslip and was likely to have settled shortly after construction.[70]

[259] From the defendants' experts' evidence, the southern carport post, which is loadbearing for the lounge, has settled. This is consistent with the sloping floor in the southwest corner of the lounge above, and the movement in the pavers. Mr Smith took floor-level measurements and measured a fall towards the southwest corner of the lounge of about 25 millimetres. Mr Hunt observed the floor and the bay window slope in the same southwest direction and concluded the observed damage was caused by the landslip.

[260] As I have found, the landslip was not causative of the damage for the reasons above, and I make no determination on this alternative cause. I note, however, that the southwest direction of the damage described is consistent with the subsidence of

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69 See [143]–[147] of this judgment.
70 See [147]–[148] of this judgment.

the south carport post directly below the lounge. I deal with this further under pleaded damage claims.[71]

[261] I also observe that the first-floor damage described and doors sticking are also consistent with subsidence of the supports of the upper floor from soil evacuation or ground subsidence, rather than movement in or deformation of the ground slab foundation as would happen in a landslip, as Mr Peters described.

[262] For completeness, I turn now to deal briefly with each of the pleaded damage claims. The particulars of the pleaded damage to the house are set out above at [87]. A number of the particulars overlap, and I have grouped them together where the same conclusion applies.

The sloping floors and pavers[72]

[263] I reject the Goodiers' claim that these particulars of damage are caused by the landslip. My reasons are:

(a) There is no mechanism by which the landslip caused the damage to the lounge and carport area, and I accept the defendants' geotechnical evidence that no such mechanism exists. In any event, the vibration mechanism suggested by the Goodiers' engineer excludes permanent land deformation and was not identified as causing damage to the pavers and carport area.

(b) There is uncontroverted evidence that the ground floor of the house was flat and there has been no deformation in the foundation slab.

(c) The soil type and organics within it near the carport are more susceptible to settlement, compression, and consolidation.

(d) The small concrete footing, founded in the garden soils, was inadequate to support the loadbearing weight of the southern carport post. The

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71 See [264]–[265] of this judgment.

72 This section addresses the particulars outlined at [87](10), (11), (12), (13), (20) and (21).

settlement of the carport post is therefore likely to have occurred at a time earlier than the pavers settled, subsiding over time.

(e) The level mantlepiece, confirmed by Mr Donnan using a 1.8 metre level on the mantel and his laser level readings, indicate that the builder needed to accommodate a slope in the floor. This indicates that settlement in the southwest corner occurred soon after construction. This was reinforced by the measurement of the two vertical timber ends of the fireplace surround, where the southern end is 10 millimetres longer than the northern end.

(f) The undisturbed pavers between the escarpment head, where the landslip occurred, and the carport post confirm that the landslip did not affect or disturb the land between the escarpment and the carport.

[264] It is an undisputed fact that the first-floor lounge slopes approximately 25 millimetres to the southwest corner, in which the TV was placed. As noted, I accept the defendants' expert evidence that the landslip did not cause the carport post to slump with the consequential slope in the lounge floor to the southwest corner. I also accept that the pavers adjacent to the carport post have not settled at the same time as the post, as indicated by one paver jammed up against the post, which has not settled in the same way as the other pavers.

[265] I do not accept that the movement of pavers adjacent to the support post was caused by the landslip, and I accept the defendants' experts' evidence that if the post and pavers moved downwards together as a result of the landslip, one of the pavers would not be projecting upwards, as the photographs depict. If the cracking and separation of pavers as pleaded, relates to pavers adjacent to the escarpment edge or adjacent to the carport post, I accept that IAG has paid for the cost of reinstating the pavers across the entire driveway including the carport, and the EQC Act excludes coverage for paving or other artificial surface.

[266] For the same reasons in [263], I do not accept that the cracks at the base of the bay window lining and architrave junction have been caused by the landslip. In his

reply brief and in his evidence, Mr Hunt observed a crack at the base of the bay window lining or architrave junction, which he described as damage consistent with the floor slope in the lounge being caused by the landslip. Again, Mr Hunt's observation and conclusion lacks geotechnical and engineering explanation as to how such a crack could be causally connected to the landslip. As above, I find there is no causal connection between the landslip and the crack, which is barely visible in the photograph adduced.

[267] There was also evidence about other slopes referred to by the lay witnesses called by the Goodiers, who referred to slopes in the first-floor bedrooms which face south towards the landslip. It was undisputed that they slope. However, the slopes were away from the landslip headscarp. Mr Smith believed that the dislevelment of the floors in that part of the house was a consequence of the span of the beams in the workshop, which provides support for those bedrooms. He found the beams sag, which impacts on the structures above, which they support.

[268] There was no engineering evidence called by the Goodiers to contradict Mr Smith's opinion, but Mr Hunt, the experienced quantity surveyor and building consultant, challenged Mr Smith's opinion. He said that if the beams sagged, the floor would move with the beams and would cause cracking in the linings as a result of the walls or the floors moving. This, he said, would have occurred early in the life of the house over the first five or six years of construction and decorating and repair work was likely to have remedied hairline cracks.

[269] For the reasons addressed above, I reject Mr Hunt's evidence on this aspect, because there is no causal link between the landslip and the sloping of the floors away from the landslip headscarp. Although I need not determine when or what caused the beams to sag in this case, it is likely, in my view, that Mr Smith's opinion is correct and the sloping of the southern-facing bedrooms and/or study was caused by the over-spanning beams in the workshop and their lack of bracing.

The rotation or bending of the lounge bay window corner post

[270] Initially contested, but ultimately agreed, the wooden post in the first-floor lounge bay window has a small bow, being six millimetres to the north and three

millimetres to the east, over approximately a two metre height. This particular was not initially pleaded and was not the subject of evidence from the Goodiers' experts. Mr Hunt, however, included it in the costings attached to his report, as a cost of replacement of this post.

[271] During his evidence, Louis Goodier described the post as "now visibly bowed", and said it no longer flexes as it did when he was younger. A number of the lay witnesses referred to the post being bowed. I note it was orange-stickered in the photographs when the witnesses came to view the Property and at the time of my viewing of the Property.

[272] There is no engineering or expert evidence from the Goodiers explaining how a landslip caused the post to bow. Again, there is no causal connection between the landslip and this post, for the reasons addressed above. The bay window was not part of the consented original design and carries considerable load from the roof in the northwest corner. Although Mr Hunt says the post has rotated, there is no supporting evidence, engineering or otherwise, which explains its cause. I find that the bow is not natural disaster damage caused by the landslip.

Roof leaks

[273] The Goodiers' evidence that two water leaks in the roof, described in Part III,[73] were not apparent before the landslip was not supported by any expert evidence connecting them satisfactorily to the landslip. Mr Csiba has accepted that the house foundation was flat and that his vibration theory did not involve ground deformation. He did not undertake an investigation into the cause of the roof leaks. Mr Hunt did not know the cause of the leaks because he had never gone onto the roof to investigate them. He was not able to determine whether the leaks were landslip damage or some other sort of deterioration. He costed the leaks on the basis of the evidence from the Goodiers that the leaks occurred after the landslip.

[274] I find that neither the vibration mechanism or the landslip caused the damage to the roof, because there is no deformation of the land beneath the house and therefore

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[73] See [155]–[156] of this judgment.

no differential settlement. The cause of the leaks is unexplained by the Goodiers' experts, who did not establish that the roof leaks have been caused by the landslip. I consider it is likely that the movement in the first-floor lounge above the southern carport post affected the roof supports, as part of the complex roof system and its junctions. I therefore find that the roof leaks were not caused by the landslip.

Cracking to internal plasterboard linings

[275] The respective positions in relation to the wall linings is set out in Part III.[74] Mr Csiba referred to "cracking on the elements observed, drummy walls", but was unable to identify which walls were drummy. He explained that the cracking was joint cracking, not diagonal cracking, and that it was not an indicator of any structural damage.

[276] Again, there is no causal mechanism linking this wall damage to the landslip and, given my reasons on causation, I do not find that the wall linings resulted from landslip damage. I reject Mr Csiba's vibration theory because there was no land deformation underneath the house, and therefore no differential settlement of the foundation. I do not find that the landslip caused the damage to the linings.

[277] For completeness, I am not persuaded by the suggestion from Mr Smith and Mr Donnan that because the house has been closed up for three years, it is unsurprising that there are continuing problems with wall linings separating on sheet joints because moisture over that time had influenced wall linings or trim. Moisture levels taken in the house by Mr Goodier and Mr Hunt do not support this. I prefer the evidence of Mr Hunt, who disagreed that the house being locked up caused moisture issues and highlighted that the construction of the house allowed significant ventilation and airflow to occur.

[278] I need not determine this issue further, but find for the reasons already addressed above that there is no causative link between the landslip and the wall damage in the house.

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[74] See [151]–[153] of this judgment.

Jamming doors

[279] This was an amended particular of damage following the evidence of numerous lay witnesses who referred to problems with the two doors in the downstairs flat (into the hallway and toilet), and others who referred to the door of the lounge above the flat catching on the first-floor carpet. The mechanism suggested for the Goodiers is the vibration theory suggested by Mr Csiba, although he accepted this does not involve any permanent deformation to the land. There is therefore no potential for differential settlement of the house foundations, which he accepted were flat. He was careful in his evidence to say that the vibration mechanism from the landslip might cause some "small change" to the doors, and qualified it further in saying, "I'm not stating that the landslide rotated any door or door frame."

[280] Mr Donnan for EQC inspected each of the doors, finding evidence of worn paint which showed physical signs of doors jamming for many years, in his view. The Goodiers responded that the worn paint has been caused in the past three years by people testing the doors when the house had been red-stickered. Mr Donnan pointed to the wearing of the carpet in front of the doorstop to the door in the lounge, illustrating that this door had been jamming or rubbing for some time. This dovetails with Mr Smith's evidence that this door sits above one of the over-spanning timber beams which, he says, has sagged, and which affects the rooms above. Again, I can find no causal connection between the landslip and the jamming doors.

Cracks in the firebox and movement to the timber cross bracing beneath and behind the firebox

[281] The cracks in the firebox arose by way of reply evidence for the Goodiers.[75] It is clear that there were cracks in the firebox in 2009, when Mr Goodier accepted that he painted over them. Again, no mechanism links the movement of the posts supporting the firebox on the outside of the house to the landslip.

[282] For the reasons already given above, I do not accept this is landslip damage, as there is no causative link between the landslip and the cracks to the firebox. For the same reason, Mr Hunt's brief observation that the cross-bracing beneath and behind

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[75] See [159]–[160] of this judgment.

the firebox "shows signs of movement" does not provide a causal connection between this suggested movement and the landslip.

Conclusions on damage to the house

[283] In summary, and to repeat for clarity, I have reached the following conclusions about the evidence of damage to the Goodiers' house:

(a) I accept the evidence of Mr Peters that there is an absence of a causal mechanism to link the natural landslip with the claimed damage to the house. I reject Mr Csiba's "vibration" theory and his evidence which attributes the damage to the house to the landslip.

(b) I am satisfied on the balance of probabilities that the Goodiers' house has been built on undisturbed stiff/dense material which was unaffected by the landslip, which comprised the movement of soils that had been excavated and placed downslope of the house and overlaid the ground under the garage.

(c) There is no causative link between the movement of soils down the head escarpment of the slip and the solid soil structure upon which the house is built, some 8-10 metres away. The well-laid pavers on the driveway, which are sensitive to land movement occurring underneath them, indicate clearly that they had not moved. They are undisturbed, and were not affected by the natural landslip.

(d) There has been settlement of the southern carport post and sagging of the workshop timber beam causing elements of damage to the house, but such settlement and damage is unrelated to, and not caused by, the landslip.

Damage to the garage

[284] From the time of the landslip, EQC has accepted that the southwest corner of the garage, where the pile is exposed as a result of the evacuation of the surrounding

land, suffered "natural disaster damage", as defined in s 2(1) of the EQC Act. At the time, EQC believed that part of the garage was at imminent risk of damage as a result of the landslip, but not because of differential settlement or cracking of the floor slab.

[285] EQC has scoped and paid for the underpinning of this corner of the garage using two eight-metre-deep piles, anchored back 10 metres under the garage. These payments have been made as part of the Goodiers' building entitlement under s 18 of the EQC Act. EQC have also made land-related payments, under s 19 of the Act, for the loss of the land under and around the corner of the pile, and for the retaining walls.

[286] The Goodiers' case in closing was that the garage was built on fill. It has settled and moved towards the landslip and the associated damage throughout the house and garage is consistent with this movement. Mr Shand points to the defendants' change of position as significant and illustrative of the defendants' experts' collaboration and lack of independence and impartiality by reason of their financial relationship to EQC.

[287] The respective positions of the parties have been set out in Part III,[76] including the site visit undertaken by Mr Hunt and the changed position of the defendants as a result of Mr Hunt's discovery that the southwest pile of the garage was not supported on solid ground, as the defendants initially believed.

[288] In addressing the pleaded elements of damage in the garage, the starting point is whether the garage floor slab was damaged by the landslip, by differential settlement or material cracking, in light of the new evidence that the pile in the southwest corner was not loadbearing. Mr Hunt's site visit during the trial was undertaken in the presence of Mr Csiba, but he did not give any evidence on his opinion of the discovery made by Mr Hunt. Although he returned to Court to complete his evidence in re-examination, he left Court without making any reference to his being present when Mr Hunt excavated the pile the previous evening, or offering any engineering advice on its significance.

[289] Mr Hunt gave evidence identifying "landslip damage" to a number of items relating to the Property. He concluded, as a result of his site visit, that there had been

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[76] See [178]–[197] of this judgment.

lateral movement of the garage slab. He attributed the movement of the slab to the landslip, and extrapolated further that such movement is the reason that the roofline above the garage tilts in the direction of the subsidence. He says this also explains the weatherboard separation, the garage door jamming, the cracks in the garage floor, and the wet-bottomed skirting correlated with a separation in the weatherboard cladding. All this damage, he says, is consistent with the garage slab moving as a result of the landslip.

[290] As noted earlier, Mr Hunt was challenged as to his qualifications and expertise, and he accepted in cross-examination that he was not giving evidence as either a structural or geotechnical engineer. Mr Hunt, in response to these questions, said that he was asking rhetorical questions because, in his view, matters do not add up. The interchange was as follows:

> Q. Mr Hunt, I understand you have a series of questions in your mind that you don't believe have been answered. You, though, are not purporting to give evidence in these proceedings as an expert looking to give answers to those questions, are you?
>
> A. No, I can't give answers to those questions, I've always maintained that position.

[291] Mr Hunt's theories on the damage to the garage structure as a result of the lateral movement of the garage slab, the movement of beams in the garage and subsequent damage to the house were expressions of his opinion as questions to be raised, but were not supported by engineering or geotechnical expert evidence.

[292] The Goodiers did not call any engineering evidence to support Mr Hunt's evidence. This is no reflection on Mr Hunt. He is an experienced quantity surveyor and building assessor, and his instincts about the southwest pile proved to be correct, namely, that the void in front of the pile indicated that the pile was not loadbearing or on solid ground. He was clearly concerned about the other items of damage that he identified and about which he gave evidence. However, he lacked structural engineering expertise and was not supported by any evidence from Mr Csiba about his conclusions as to whether there has been any vertical settlement of the southwest corner of the garage, and whether there has been any lateral movement of the garage as a whole.

[293] Mr Smith is the only structural engineer to have given evidence. Following Mr Hunt's discovery and the subsequent excavation of the pile, Mr Smith and Mr Donnan gave evidence explaining the pile's relevance to the structural supports of the garage. As outlined at [192]–[197], Mr Smith's ultimate conclusion was:

(a) the southwest pile was not loadbearing and was unlikely to have been since shortly after construction;

(b) from that point, the southwest corner of the garage did not rely on the ground on the southwest corner which was evacuated by the landslip; and

(c) the southwest corner was supported by the deepened concrete perimeter foundation around the base of the garage.

[294] Importantly, none of Mr Smith's conclusions were subject to any cross-examination or contrary engineering evidence from the Goodiers. Although Mr Smith was cross-examined about his change of opinion, his revised conclusions were not challenged. I therefore consider that Mr Smith's evidence in relation to the cause of damage to the garage is the most persuasive.

[295] Finally, and despite the challenge to the commercial relationship of Mr Smith's firm, Spencer Holmes, with EQC, I do not place less weight on Mr Smith's evidence because of that relationship. Although Mr Smith initially expressed a firm structural engineering opinion that the southwest corner pile of the garage was supported, as soon as Mr Hunt identified his findings of void around the pile, the defendants' experts thanked Mr Hunt through their counsel and immediately undertook a further investigation. Mr Hunt's evidence was taken seriously by the defendants' experts, and although Mr Smith and Mr Donnan revised their briefs accordingly, further assessments and investigation were undertaken to ascertain the true position about the southwest corner of the garage, the loading capacity of the perimeter concrete foundations, and their assessments in relation to their investigations. It is the hallmark of a professional to accept that they may have been mistaken and to undertake further

investigation to ascertain the correct position, and Mr Smith's credibility cannot be impugned for doing so.

[296] I turn, then, to each of the pleaded elements of damage in respect of the garage, with those that overlap considered together.

Lateral movement of the garage slab and wall relative to house[77]

[297] As described above, this allegation and Mr Hunt's opinion is not supported by engineering evidence or geotechnical evidence. The garage slab is a large flat pad sitting on a flat section of the site, with a small section of it being undermined in the landslip.[78] The experts agreed that there had been only minimal evacuation since the landslip.

[298] Mr Peters said that the land movement cannot have caused any lateral movement of the slab and he explained it as follows:

> So a landslip, the fundamental requirements of a landslip is a slope, so to be on the slope face and to have loose soils on that slope, and they are the most susceptible to instability and when that material displaces what it will do it will typically affect materials immediately, or potentially immediately, adjacent to the face. When the slope is gone and the ground levels out and becomes flat, the driving forces that are making the land move go. They're gone. So although you can have loose soils around a site, it does not make them susceptible to instability if they are on flat land. It's those right on the top of the slope which could potentially be susceptible but on the flat they're not.

[299] There is no engineering evidence contradicting Mr Smith's or Mr Peters' evidence that the garage slab has not moved laterally and, indeed, Mr Hunt's 2017 report did not mention lateral movement of the slab for repair or costing. I am not satisfied that there has been lateral movement of the garage slab or wall and I accept the geotechnical and engineering evidence adduced by the defendants.

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77 This section addresses the particulars outlined at [87](22) and (23).

78 Mr Peters gave evidence that only 1.5 metres², or three per cent of the footprint, was undermined by the slip.

The garage floor and foundation subsiding

[300] As noted earlier at [163], it is agreed that the southwest corner of the garage has a level of -26 millimetres. This is compared with +1 millimetre at the other side of the garage door northwest corner and +14 millimetres in the opposite northeast corner. Mr Smith says that such floor differentials in the garage slab are not evidence that the slab has subsided due to the landslip. He says that garage floors are commonly poured in a manner which allows surface water that is transported into the garage by vehicles to drain out of the garage, and there is no evidence to suggest that these slopes are attributable to anything other than the manner in which the garage was constructed.

[301] In the absence of engineering analysis from Mr Csiba, I accept Mr Smith's explanation of the construction variations in the garage slab and reject Mr Csiba's conclusions that the floor differentials occurred as a result of settlement from the landslip.

[302] In addition to Mr Smith's explanation as to the measurements in each of the parts of the garage slab and his reasons for the variations in level around all sides of the garage, including a lack of care in achieving a flat surface during construction, he suggests the following provides an explanation for the slope in the southwest corner:

(a) Shortly after construction, a part of the slope in the southwest corner of the garage slab may have been caused from the inadequate founding of the pile and slight static settlement at that time.

(b) A small portion of the overall garage slab was ultimately undermined by the landslip, being 1.5 metres^2 or three per cent of the footprint.

(c) There are indicators that the land near this corner was subsiding before the landslip. Mr Goodier was in the process of constructing the concrete walkway shortly before the landslip, and I accept the defendants' submission that settlement was likely occurring on that southwest corner, along the southern slope beside and slightly below the garage, before the landslip.

(d) There is no evidence of land movement further back than the headscarp following the landslip, as assessed by Tonkin & Taylor.

[303] I find the differential levels in the garage slab and floor were not caused by the foundation subsiding as a result of the landslip. I accept Mr Smith's evidence that any slopes in the floor are attributable to the way the garage was constructed.

Cracking in the garage concrete floor slab and exacerbation of existing cracking

[304] The experts agreed that there is cracking present in the garage concrete floor slab, and that the primary cracking is an east-west crack which existed prior to the landslip. Mr and Mrs Goodier said that it was a hairline crack only before the landslip, and it got longer and wider after the landslip, with Mrs Goodier saying it got up to three millimetres wider.

[305] Mr Goodier accepted that there were other hairline cracks in the garage slab before the landslip, which is consistent with shrinkage cracks which typically occur after the initial set of the concrete. This acknowledgement is reflected in the Goodiers' amended pleading, with the particular "exacerbation of existing cracking in the garage concrete floor." Mr Goodier further said there were two additional cracks that did not exist before the landslip.

[306] Again, there is a contest between the parties' respective building experts. Mr Williamson saw the garage floor within two months of the landslip and concluded that these cracks were clearly aged due to their rounded edges and the extensive debris inside some cracks, and showed no signs of new movement. In contrast, Mr Hunt believed the cracks supported his view that there had been a lateral movement of the garage slab, but accepted that he was not an engineer and could not tell whether the cracks in the concrete were caused by shrinkage that pre-existed the landslip. Mr Smith examined the cracks on three occasions and said they were aged shrinkage cracks with no sign of recent movement or exacerbation. Further, he said that if the southwest corner had subsided, he would expect to see a diagonal crack in this corner, not one parallel with the southern wall.

[307] In view of the expert evidence adduced by the defendants on the cracking in the garage slab, I accept that the current cracks have no structural or functional effect on the slab and were most likely to have been present prior to the landslip. Despite the evidence from the Goodiers that the cracks were exacerbated after the landslip, their measurement estimates were unable to be compared with the pre-landslip cracking and were in excess of the actual measurements available after the landslip. For example, the crack that Mrs Goodier estimated widened by three millimetres in fact measured only 1.2 millimetres wide.

[308] I am not satisfied on the balance of probabilities that cracking of the garage slab was caused by or sufficiently exacerbated by the landslip. The geotechnical and engineering evidence confirms that the garage slab is supported by the perimeter foundation, that there has been no lateral movement of the slab and that there has been minimal further evacuation. Even if exacerbation to the cracks has occurred, it is minimal.

A crack across the junction between the workshop and garage

[309] This particular of damage evolved during the trial from an example of a crack in the slab to an allegation that there has been lateral movement of the garage slab by a few millimetres. Mr Goodier gave evidence that at the cold joint between the two slabs, there was a couple of millimetres' gap pre-landslip, that is, at the base of each of the walls between the workshop and the garage. Mr Goodier placed floor levelling compound to make the cold joint safer, because of the chamfered, or sloped, edge between the two bases. He pointed to the floor levelling compound pulling apart after the landslip, and being broken up along the entirety of the joint. He accepted there was an existing small gap between the wooden wall where the two concrete slabs meet, but it was not as wide as it is now following the landslip.

[310] Mr Smith measured the cold joint at 10 millimetres at its widest at the base of both walls, which is consistent with Mr Goodier's evidence that the cold joint was eight to 10 millimetres wide. Consistent with Mr Peters' evidence that the landslip movement could not have caused any lateral movement of the slab, Mr Smith found

that there was no material movement post-landslip, as shown by the floor levelling compound still being intact over the eastern section of the cold joint.

[311] I accept Mr Smith's evidence. It was demonstrated by a comparison of the cracking apparent around the cold joint and where a crack or break would be expected to occur if the garage slab had moved. The floor levelling compound appears in the 10 millimetre opening just before the end of the wooden wall. If the opening at the base of the wall had occurred as a result of the landslip, the floor levelling compound coming out of that corner would have been broken, creating a similar-sized 10 millimetre gap. Thus a similar crack would have occurred if there had been landslip damage. However, no such crack occurred.

[312] I note that Mr Csiba also acknowledged that if the 10 millimetre separation at the base of the eastern wall had opened up in the landslip, it would be logical to see additional cracking in the floor levelling compound immediately in front of the wall. Mr Hunt, although he disagreed with Mr Smith, relied on the curved extension of the crack to show movement. However, I find that conclusion is not consistent with separation having occurred at the base of the wall.

[313] In addition to Mr Smith's evidence, I take into account that the separation of the cold joint with the resulting broken floor levelling compound was not raised in the initial reports of damage by the Goodiers to EQC. Nor was it photographed either by the Goodiers at the time, or Mr Csiba, or persons from Earthquake Services when they inspected the house shortly after Mr Csiba's report and took a series of photographs. They took no photographs of the cold joint or the broken floor levelling compound. Nor was it shown to Mr Williamson by Mr Goodier on 28 August 2015, when Mr Goodier was expressing his concern that Tonkin & Taylor had failed to consider damage to the garage. Notably, it is not referred to, either in Mr Hunt's December 2017 report or in his costings for remediation.

[314] In addition, the defendants' experts point to the age of the separation between the weatherboards at the corner of the eastern side of the junction between the garage and the workshop to show that any movement in the cold joint is historical and occurred before the landslip.

[315] In light of the evidence, I do not accept that the crack across the junction or cold joint between the workshop and the garage was caused by the landslip.

A void beneath the slab and adjacent to the pile and pile lean(s)

[316] The void beneath the garage slab was raised by Mr Csiba in the joint experts' report. The slab was referred to as being "drummy on top" when tested with a hammer, indicating voids under the slab caused by the landslip. Despite an early drill hole depicted in a photograph of the garage floor, no evidence of any testing was adduced. Mr Csiba did not include this item in his report or in his briefs of evidence, and in giving evidence, he said he did not know whether there was a void under the slab. The void adjacent to the pile was identified by Mr Hunt on his site visit as discussed earlier at [181], but no evidence was led about its significance on the structural integrity of the garage from Mr Csiba.

[317] On his site visit, Mr Hunt also identified the southwest pile of the garage was leaning outwards towards the slip, but did not obtain a level on the pile at the time. Mr Smith examined it and found the pile was not damaged, with no signs of cracking in the mortar interface between the precast wall liners.

[318] I reject the Goodiers' claim for damage in respect of these items for two reasons:

(a) The defendants' engineering evidence that the southwest pile was not loadbearing was not challenged. The southwest corner continued to be supported by the substantially deepened perimeter foundation, which are up to 800 millimetres deep and rest on better ground, back from the southwest corner. Mr Smith was not cross-examined on these conclusions, and I accept Mr Smith's evidence.

(b) EQC has paid for the underpinning of the garage corner as part of its settlement, despite what is now known – that the need for this underpinning predated the landslip.

[319] I find, therefore, that the landslip, although causing evacuation of the soil around the pile, did not undermine the southwest corner and the pile in the way claimed. In any event, the southwest garage corner continues to be supported by the perimeter foundations and the experts all agree that minimal further evacuation of ground from under the southwest corner of the garage slab and foundation has occurred.

Separation and dislevelment of weatherboards between the new and existing garage[79]

[320] These two particularised claims are part of the Goodiers' evidence that the garage has moved as a result of the landslip, and is strongly contested by the defendants' experts. Mr Goodier gave evidence that there is now a gap in the weatherboards between the garage and workshop. He says there is now daylight coming through this gap, which was not there before the landslip. Mr Hunt and Mr Csiba, in the joint experts' report, say the gapping between the joints of the weatherboards is evident from paint and sealing material not being present inside the gapping, and paint being stretched on top of the gapping. This indicates, they say, the gaps occurred after the weatherboards were installed and painted. Mr Hunt also gave evidence that the weatherboards are out of level, in his opinion, due to the garage floor and foundations subsiding as a result of the landslip.

[321] Mr Smith says there is no such damage and if the southwest corner settled as a result of the landslip, there would be significant consequential damage to the garage superstructure. Mr Donnan analysed the levels and verticalities of the weatherboards, the facing boards, and the internal and external faces of the southern wall. He found the weatherboards on either side of the corner are level and the facing board on the western side of the corner leans back to the north away from the landslip. He says if the southwest corner had subsided as a consequence of the landslip, the weatherboards on the exterior of both sides of the corner would show a tilt consistent with the subsidence. However, on both sides the weatherboards remain essentially level.

[322] I note Mr Donnan's evidence on the weatherboards being level was not the subject of cross-examination. However, given the absence of contrary structural

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[79] This section addresses the particulars outlined at [87](30) and (31).

engineering evidence, I am unable to accept that these particulars of damage were caused by the landslip.

The sticking or jamming garage door

[323] There are two issues relating to the allegations about the electric garage door. The first is that Mr Goodier found that the door would not work after the landslip. The power was then switched off, and he made an adjustment to the frame to open the door manually. Louis Goodier said that when he tried to open the garage door in August 2015, there was power and he could not open it with the remote, so he detached the door from the motor. Mr Hunt too found that the door was catching. On the other hand, Mr Donnan says that the door works perfectly well at the present time. The only issue was the need to disconnect the door when there was no electricity.

[324] The second issue was the gap under the garage door, which the Goodiers said was not there before the landslip. However, Mr Donnan, in his supplementary brief of evidence, explained that when the door was lowered but not locked there was no gap apparent. However, in order to use the manual locking system the door needs to be lifted slightly, at which point the gap is visible.

[325] Mr Shand submits that common sense and logic says that if the garage door worked properly before the landslip and it did not work without adjustment immediately after the landslip, the landslip must be the cause of the garage door not operating, with the explanation being that the landslip caused movement to the garage.

[326] I have difficulty in accepting this submission, as it ignores the cross-examination of Mr Goodier about the difference between opening the garage door with power on and the adjustment he had to make when the power was off to work the garage door manually. I accept Mr Donnan's reassessment that the garage door does currently work. The problems described of the garage door jamming appear to me to be a result of adjustments made to the garage door when the power supply was off. I do not uphold the claim that the garage door is consistent with landslip damage and movement of the garage slab, and reject this particular of damage.

Slumping below the gully trap on the eastern elevation between the new and existing garage

[327] Mr Hunt in his reply brief of evidence observed that there was slumping below the gully trap on the eastern elevation of the garage between the new and existing garage junction. Mr Csiba did not address this in his evidence-in-chief, but under cross-examination said that in his view there had been some localised land settlement under the gully trap, which was caused by land movements associated with the landslip. In the joint experts' report, he and Mr Hunt said there is also slumping and eroding material from the embankment directly behind the garage. They explained the gully trap has been installed for many years, and any localised uncompacted fill associated with the drain would have long settled and eroding material of the adjoining bank would have filled the cavity. Mr Csiba was pressed as to his geotechnical expertise on this subject and he accepted he had not measured the subsidence or tested the area. He had only observed it. However, it was not referred to in his 2016 report or his briefs of evidence filed.

[328] Mr Hunt gave evidence that it was unusual for any slumping to have occurred under a gully trap without some form of movement or ground settlement. He accepted he could not give a reason for this, and when asked in cross-examination if he considered the slumping was related to the floor issue in the garage, he accepted he was not a "geotech" and he photographed it because it seemed unusual.

[329] Mr Shand cross-examined Mr Peters and asked whether the soils under the gully trap were loose and susceptible to wetting and movement. Mr Peters said the soils could get wet and saturated, but not necessarily move. Further, he rejected the proposition that the soils, apart from on the southwest corner, had moved as a result of the landslip on the edge of the slope, and he did not believe there was any damage to the land on the eastern corner of the garage. This was consistent with Mr Peters' evidence that the landslip was not deep-seated and did not extend into the soils beyond the headscarp, let alone the house.

[330] I accept Mr Peters' evidence that the soils had not moved under the gully trap as a result of the landslip, because of the distance from the edge of the headscarp to

the gully trap on the eastern elevation between the new and existing garage. I therefore do not accept this particular of damage.

Misalignment in the roof and gutter lines above the garage door

[331] Mr Hunt described a misalignment of the roof and gutter line above the garage, which he said showed that the garage roof had subsided in the southwest corner of the garage. He accepted Mr Donnan's evidence that the gutter should fall back to the northern end of the garage to where the stormwater downpipe takes the water away, but said as a result of subsidence due to the landslip the guttering itself is now "dead level", when it ought to be leaning down to the north. He says this is consistent with the garage roof subsiding in the southwest corner.

[332] For the reasons already outlined, the subsidence of the garage roof is not consistent with Mr Smith's engineering assessment of the structural integrity of the garage. This claim is not upheld.

Conclusion on damage to the garage

[333] In summary, I have reached the following conclusions about the evidence of damage to the Goodiers' garage:

(a) The southwest pile was founded on unsuitable material, namely the fill soils that slipped away during the landslip.

(b) I accept the evidence of Mr Smith that the pile on the southwest corner of the garage is not load-bearing and has not been load-bearing for some time. The garage is supported by the thickened perimeter foundation to transfer the weight from the unsupported corner and suspended pile.

(c) Therefore, the garage is not supported by any of the loose-fill soils that have slipped away during the landslip. Because the pile was not contributing materially to the support of this corner of the garage, the loss of soils under this corner has not caused any damage or movement

to the garage. Significantly, I find there has been no lateral movement of the garage slab.

(d) Any particulars of damage claimed in respect of the garage have therefore not occurred as a result of the landslip.

[334] I find on the balance of probabilities that there is no natural disaster damage to the garage, that is, no damage caused by the landslip.

[335] I note that EQC accepted that the southwest corner of the garage was at "imminent risk of damage" occurring in the short-term future. "Imminent risk of damage" falls within the definition of "natural disaster damage" under the EQC Act, and EQC paid $27,040.93 to the Goodiers to underpin the southwest corner of the garage under s 18.

Resolution of the legal issues

[336] The Goodiers had the burden of proving that there has been natural disaster damage to their house and garage, as claimed. This required proof, on the balance of probabilities, that the pleaded damage was caused by the landslip.[80] In closing, Mr Shand submitted that common sense, logic, and 23 independent people prove that more likely than not the damage that exists to the Property was caused by the landslip. Further, he submitted defendants' evidence was tainted by collaboration and the lack of independence and impartiality, and was also weakened by previous assessment errors fundamental to the defendants' case.

[337] I have already dealt with the credibility challenge raised by Mr Shand in relation to the defendants' experts and their evidence, applying to their evidence the reasons for my preference for one expert over the other in reaching my conclusions. For completeness, I reject the allegation that the experts' evidence was tainted because of their relationship with EQC. The expertise was critical to the determination of the factual contest between the parties, particularly in the absence of relevant expertise in engineering and geotechnical evidence being called by the Goodiers.

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[80] See [84] of this judgment.

[338] I accept the defendants' submission that, despite the obvious relevance of geotechnical evidence in a case such as this, where the Goodiers allege that the landslip has caused damage to their house and garage, geotechnical evidence is critical, particularly where the defence to their claim was that there was no mechanism that caused the damage to the house by the landslip. The Goodiers could not refute Mr Peters' evidence that the Goodiers' house was built on firm ground and there was no disturbance between the house and the headscarp, eight to 10 metres away, where the landslip occurred.[81] Nor could the Goodiers refute Mr Smith's evidence, with contrary engineering evidence, that the loss of soils under the southwest corner of the garage had not caused any damage or movement to the garage.[82]

[339] The Goodiers' case was based on the observations of their 23 independent witnesses of elements within the Property, before and after the landslip, together with the Goodiers' evidence, to prove the damage alleged. However, they could not explain the link between the landslip and the Property and Mr Csiba, the structural engineer for the Goodiers, did not have a plausible or viable explanation for the damage which is alleged to have occurred. I specifically rejected his vibration theory for the reasons set out above.[83]

[340] I consider Mr Shand's submission essentially relies on the inferences that can be drawn from the lay witnesses and the Goodiers' observations and memories of the Property before and after the landslip. I turn, then, to consider the authorities on inferences.

Inferences

[341] In *Jarden v Lumley General Insurance (NZ) Ltd*, the High Court, referring to the judgment of Lord Brandon in *Rhesa Shipping SA v Edmunds*, explained that proof on a balance of probabilities must be applied with common sense.[84] It requires the Judge to be satisfied on the evidence that an event or outcome is more likely to have occurred than not.[85]

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81 See [230]–[238] of this judgment.
82 See [189]–[197] of this judgment.
83 At [237] of this judgment.
84 *Jarden*, above n 50 at [52], referring to *Rhesa Shipping SA v Edmunds* [1985] 1 WLR 948 (HL).
85 *Jarden*, above n 50, at [52].

[342] It was also recognised in *ACC v Ambros*, though notably in the medical context, that courts usually "proceed on their general impression of the sufficiency of the lay and scientific evidence to meet the required standard of proof… The legal method looks to the presumptive inference which a sequence of events inspires in a person with common sense".[86] The legal approach to causation is therefore different from the scientific approach. In law, problems of causation arise in the context of "ascertaining or apportioning legal responsibility for a given occurrence."[87] The Court of Appeal concluded that:

> [67] The different methodology used under the legal method means that a court's assessment of causation can differ from the expert opinion and courts can infer causation in circumstances where the experts cannot. This has allowed the Court to draw robust inferences of causation in some cases of uncertainty... However, a court may only draw a valid inference based on facts supported by the evidence and not on the basis of supposition or conjecture… Judges should ground their assessment of causation on their view of what constitutes the normal course of events, which should be based on the whole of the lay, medical, and statistical evidence, and not be limited to expert witness evidence.

[343] In making this observation, the Court went on to emphasise that there must be "sufficient material pointing to proof of causation on the balance of probabilities for a court to draw even a robust inference on causation. Risk of causation does not suffice."[88]

[344] In *Strathboss Kiwifruit Ltd v Attorney-General*, Mallon J too confirmed that the court must be careful to draw the distinction between mere conjecture and a reasonable inference.[89] Drawing on guidance from Lord Justice Toulson in *Milton Keynes Borough Council v Nulty*, Mallon J explained that in assessing a circumstantial case, the court should ask itself whether the strands of circumstantial evidence are best accounted for by the plaintiff's explanation.[90] This assessment involves looking at all the strands of circumstantial evidence as a whole, whether the individual strands relied upon are in themselves properly established, what factors point away from the suggested inference, and what other explanation might fit the whole of the evidence.[91]

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86 *ACC v Ambros*, above n 40, at [65].
87 At [66].
88 *ACC v Ambros*, above n 40, at [70].
89 *Strathboss Kiwifruit Ltd v The Attorney-General* [2018] NZHC 1559, at [991].
90 At [993], citing *Milton Keynes Borough Council v Nulty* [2013] EWCA Civ 15 at [34].
91 At [993].

At the end of this assessment, the court must "stand back and ask itself the ultimate question of whether the plaintiff's explanation is more likely than not to be true."[92] Lord Justice Toulson framed it as a "satisfied" test:[93]

> The civil "balance of probability" test means no less and no more than that the court must be satisfied on rational and objective grounds that the case for believing that the suggested means of causation occurred is stronger than the case for not so believing.

[345] In this case, standing back and asking the ultimate question of whether the Goodiers' explanation is more likely than not to be true, I am not satisfied that the landslip was the cause of the damage observed by these witnesses.

[346] First, the defendants' experts have demonstrated through their geotechnical and structural engineering evidence that the damage to the Property, both the house and the garage, was not caused by the landslip in June 2015. I have found the defendants' expert evidence is sound. In the absence of any geotechnical or structural engineering evidence to seriously contest the defendants' evidence, there is no reliable basis for finding that the landslip caused the claimed damage.

[347] Second, the defendants have pointed to alternative explanations for the damage to the Property. In relation to the house, Mr Smith and Mr Donnan gave evidence that as a result of the complex design and the standard of construction of the house, over time, construction defects have caused the claimed damage to the house. In relation to the garage, Mr Smith gave evidence that any variation in the floor levels and related garage damage are more likely the result of poor construction tolerances and minor movements soon after construction resulting from the ineffective founding of the pile. While I am not required to make any findings on alternative explanation, I note these explanations are consistent with the evidence of damage to the Property.

[348] I am satisfied, on the evidence from the defendants' experts, that the landslip was not the cause of the damage observed by the Goodiers and their witnesses. I do not find, as a matter of common sense or logic or, indeed, reasonable inference that the Goodiers and their witnesses have proved to the standard of balance of

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92 *Strathboss Kiwifruit*, above n 89, at [37].
93 *Nulty,* above n 90, at [35].

probabilities that the damage claimed was caused by the landslip. No such reasonable inference can be drawn on the evidence, given the rational and geotechnical evidence to the contrary.

[349] Lastly, EQC has invited the Court to draw an adverse inference that the reason no geotechnical engineer or engineering geologist was called by the Goodiers, as the litigation funder had earlier suggested, is that this evidence was not available to them.[94] EQC submits the only logical inference to be drawn is that no such expert would be prepared to express an opinion that the landslip could have caused the alleged damage to the Goodiers' Property.

[350] I have accepted the geotechnical evidence from EQC that the landslip, with the saturation of loose soils on the edge of the headscarp did not cause the alleged damage to the Goodiers' Property. On that basis, an adverse inference does not need to be drawn.

No further liability

[351] I have found that the Goodiers have failed to establish that their claimed damage to their house and garage was caused by the landslip. There is no further liability for either EQC or IAG, other than that which they have already accepted and paid. It follows that, for the same reason I disallowed the claim for general damages against IAG, general damages are not payable by EQC in the absence of any findings of liability.[95]

[352] For completeness, I find that the s 124 Notice under the Building Act 2004 does not have any impact on IAG or EQC's obligations under the Policy or the EQC Act, in light of my findings that the claimed damage to the house and garage was not natural disaster damage.

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94 *Ithaca (Custodians) Ltd v Perry Corporation* [2004] 1 NZLR 731 (CA) at [153]–[154].
95 *Jarden*, above n 50, and see [89] of this judgment.

Summary of conclusions

[353] In summary, I find that the damage to the house and garage was not caused by the landslip. I have reached the following conclusions about the evidence of damage to the Goodiers' house:

(a) I accept the evidence of Mr Peters that there is an absence of a causal mechanism to link the natural landslip with the claimed damage to the house. I reject Mr Csiba's "vibration" theory and his evidence which attributes the damage to the house to the landslip.

(b) I am satisfied on the balance of probabilities that the Goodiers' house has been built on undisturbed stiff/dense material which was unaffected by the landslip, which comprised the movement of soils that had been excavated and placed downslope of the house and overlaid the ground under the garage.

(c) There is no causative link between the movement of soils down the head escarpment of the slip and the solid soil structure upon which the house is built, some eight to 10 metres away. The well-laid pavers on the driveway, which are sensitive to land movement occurring underneath them, indicate clearly that they had not moved. They are undisturbed, and were not affected by the natural landslip.

(d) There has been settlement of the southern carport post and sagging of the workshop timber beam causing elements of damage to the house, but such settlement and damage is unrelated to, and not caused by, the landslip.

[354] I have reached the following conclusions about the evidence of damage to the Goodiers' garage:

(a) The southwest pile was founded on unsuitable material, namely the fill soils that slipped away during the landslip.

(b) I accept the evidence of Mr Smith that the pile on the southwest corner of the garage is not load-bearing and has not been load-bearing for some time. The garage is supported by the thickened perimeter foundation to transfer the weight from the unsupported corner and suspended pile.

(c) Therefore, the garage is not supported by any of the loose-fill soils that have slipped away during the landslip. Because the pile was not contributing materially to the support of this corner of the garage, the loss of soils under this corner has not caused any damage or movement to the garage. Significantly, I find there has been no lateral movement of the garage slab.

(d) Any particulars of damage claimed in respect of the garage have therefore not occurred as a result of the landslip.

PART V – SUMMARY OF FINDINGS

What is the nature and extent of the natural disaster damage to the "home" (as defined in the Policy) and "residential building" as defined in the Earthquake Commission Act 1993?

[355] The damage to the Goodiers' home and garage did not occur as a result of the natural landslip and is not "natural disaster damage".

Was it caused by the landslip?

[356] There is no causal connection between the landslip and the damage to the house and garage.

What is the liability of EQC and IAG for the cost to reinstate?

[357] There is no further liability for either EQC or IAG to reinstate, other than that which they have already accepted.

Does the s 124 Notice have any impact on EQC and IAG's liability or obligations?

[358] The s 124 Notice has no impact on EQC and IAG's liability or obligations.

Costs

[359] If the parties cannot agree over costs, those parties seeking costs should file memoranda within 20 days of this judgment.

[360] Reply memoranda for the Goodiers are to be filed within four weeks of their receiving the memoranda for costs.

[361] Any reply is to be filed within two weeks of the defendants receiving the Goodiers' memorandum.

[362] The memoranda are to be no longer than 10 pages.

Cull J

Solicitors:
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DLA Piper New Zealand, Wellington for the Second Defendant