IN THE HIGH COURT OF NEW ZEALAND
CHRISTCHURCH REGISTRY

I TE KŌTI MATUA O AOTEAROA
ŌTAUTAHI ROHE

CIV-2013-409-001333
[2018] NZHC 2102

BETWEEN	DEREK RICKY BLIGH Plaintiff
AND	EARTHQUAKE COMMISSION First Defendant
AND	IAG NEW ZEALAND LIMITED Second Defendant

Hearing: 19 February – 6 March 2018

Appearances: R J Lynn and E J Flaszynski for the Plaintiff
N S Wood and J W Upson for the First Defendant
P M Smith and S J Connolly for the Second Defendant

Judgment: 16 August 2018

JUDGMENT OF NATION J

Introduction

[1] Mr Bligh owns a residential property at 29 Waddington Road, Waddington. It is in an area affected by the Darfield earthquake, the first major earthquake in the Canterbury earthquake sequence, which occurred at 4.35 am on 4 September 2010.

[2] The house is two storey. Mr Bligh describes it as Georgian style. Below is a street view image of the property taken in July 2012, after the earthquake.

[3] The ground floor of the house was built in the 1860s. The ground floor walls of the house are made of unreinforced concrete. The first floor was added around 1897. Beams of hardwood were placed on top of the concrete walls. On top of those beams, the walls were double brick.

[4] To the rear of the house is a timber-framed structure (the annexe). It includes a shower and a toilet, a laundry and a sleepout, situated over a cellar which was formerly a well. Separated from the house is a large out-building I refer to as the garage but it is more in the nature of a large shed.

[5] Mr Bligh purchased the house in April 1985. He planned to make various alterations and had made some significant progress in this regard. Around 1988, in accordance with detailed engineering designs, the wooden beam above the concrete walls was replaced with a reinforced concrete beam. The ground floor was removed and replaced with a reinforced concrete slab, with deeper concrete beams next to the foundations and at intervals across the floor. The roof was replaced. In the late 1980s, Mr Bligh chipped the plaster off the exterior of the first floor walls on the east, north and some of the west side of the house. Substantial new windows and doors were installed on the ground floor. All the downstairs interior walls were removed, as was the ground floor ceiling.

[6] Unfortunately, because of illness and a series of unanticipated life events, there was little progress with the planned improvements after the early 1990s. In 1991, all internal walls on the ground floor had been removed with only odd posts in places to prop up the first floor. Exposed electrical wiring hung down from posts and the floor above. Mr Bligh continued to live in the home with the interior in a substantially altered but incomplete state.

[7] In these proceedings, Mr Bligh claims that the first floor walls and other parts of the house, the annexe and the garage suffered major structural damage in the Darfield earthquake. He claims the cost of repairing that damage will be in excess of $950,000.

[8] Mr Bligh had insured the property with State (now IAG) and, through that policy, was covered by the Earthquake Commission Act 1993 (the EQC Act).

[9] EQC had various experts inspect the building for earthquake damage. Initially, assessors thought there was earthquake damage. An experienced builder employed by EQC, Mr Malcolm Clark, inspected the property on 8 December 2010. An engineer, Mr Peter Smith, carried out a detailed inspection on 23 December 2010. Another engineer, Mr Graeme Robinson, reviewed various reports and inspected the property himself on 12 January 2011. It was their advice to EQC that the buildings had not suffered any material damage as a result of the Darfield earthquake.

[10] Under the house insurance policy, IAG would be liable to repair Mr Bligh's home only if it suffered material damage as a result of the Darfield earthquake and the cost of repairing that damage would be in excess of the EQC cap of $115,000 including GST. IAG supports the position taken by EQC over whether there was material damage to the home. It says there was no damage and, if there was any, it would not have cost more than the EQC cap to repair, so IAG has no liability to Mr Bligh under its policy.

[11] Mr Bligh is adamant that the experts engaged by EQC were wrong in the opinions they came to.

[12] Mr Bligh's opinion, the evidence in his support from a structural engineer Mr Mark Kearney, and the opinions of other witnesses for the parties were the subject of detailed examination when these proceedings were heard earlier this year.

The legal context

The IAG policy

[13] Under the IAG policy, Mr Bligh was covered for sudden accidental loss to the home that happened during the period of cover. There is no dispute the house, annexe, garage and water tank were insured under the IAG policy. "Accidental" was defined in the policy to mean "unexpected and unintended by you". "Loss" was defined to mean "physical loss or physical damage".

[14] Under the policy, IAG agreed with Mr Bligh:

> If you have a loss that is covered by this policy and you repair or rebuild the home, we'll pay: cost of repairing or rebuilding the home to a condition as similar as possible to when it was new, using current materials and methods.

[15] Losses were covered by IAG only to the extent they were not covered by EQC, and then only if EQC had not declined the claim.

Earthquake Commission cover

[16] EQC accept that, because Mr Bligh had a "contract on fire insurance" with IAG in respect of a "residential building", his building was deemed to be insured under the EQC Act against "natural disaster damage" for its "replacement value".[1] The limit on EQC's liability for the costs payable by an insured replacing or reinstating the property was $115,000 inclusive of GST.[2] If a property suffers natural disaster damage during the period for which it is insured under the EQC Act, EQC must settle any claim to the extent to which it is liable under the EQC Act. At EQC's option, EQC may settle by payment, replacement or reinstatement under s 29(2) EQC Act or by a combination of payment and replacement or reinstatement.[3]

[17] In relation to property, "natural disaster damage" is defined as meaning "any physical loss or damage to the property occurring as the direct result of a natural disaster".[4] 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.[5] 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.[6]

[19] In *Krall 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.[7] The Court of Appeal held that the loss flowing from the insured person's inability to use the house in these circumstances was not

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1 Earthquake Commission Act 1993, s 18.
2 Earthquake Commission Act 1993 ss 18(1)(c), 29(3).
3 Earthquake Commission Act 1993 Sch 3, cl 9(1)(a).
4 Earthquake Commission Act 1993 s 2(1)(a).
5 *O'Loughlin v Tower Insurance Ltd* [2013] NZHC 670 at [43].
6 *Earthquake Commission v Insurance Council of New Zealand Inc* [2014] NZHC 3138 at [70].
7 *Krall v Earthquake Commission* [2015] NZCA 13.

"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.[8] They held that "damage" had to be harm done to something that impairs its value or usefulness.[9]

[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:[10]

> … 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:[11]

> 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:[12]

> 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.

[23] Mr Lynn, for Mr Bligh, referred to Blanchard J's judgment for the Court of Appeal in *Bayley v Manukau City Council*.[13] There, the Court was concerned with the tests under ss 93 and 94 Resource Management Act 1993 (RMA) as to whether the activity for which consent was sought would have any effect on the environment which was more than minor and would adversely affect any person. In discussing the different tests, Blanchard J said the relevant authority must first determine whether the impact of an adverse effect on the environment was more than minor. If so, that

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8 *Krall v Earthquake Commission*, above n 7, at [35].
9 *Krall v Earthquake Commission*, above n 7, at [37].
10 *Sadat v Tower Insurance Ltd* [2017] NZHC 1550 at [255].
11 *He v Earthquake Commission* [2017] NZHC 2136 at [67].
12 *Arrow International Ltd v QBE Insurance (International) Ltd* [2009] 3 NZLR 650 (HC) at [82].
13 *Bayley v Manukau City Council* [1999] 2 NZLR 568.

adverse effect could be disregarded only if it was "de minimis". He held that an adverse effect on a person could be disregarded as de minimis only if it is so trifling that the law should regard it as of no consequence. That was a more stringent test than whether the adverse effect is minor.

[24] Mr Lynn also submitted that damage should not necessarily be considered de minimis simply because the repairs required to remedy the damage caused by the insured event (the earthquake) would be no different than what had been required to remedy pre-existing defects. He gave the example of damage which produced an unsightly crack in the middle of the glass in a window, where the frame of the window was already infested with borer so that it had already required replacement. He similarly referred to the situation where there was a widening to a pre-existing crack in the floor which did not materially change the structural integrity of the concrete floor such as it was before that additional damage.

[25] I accept Mr Lynn's submission to the extent he argued there can be material damage even when the costs or work required to repair the damage suffered in the earthquake is no different from what that work or costs would have been before the earthquake. That, however, is a matter to be considered along with other relevant facts in the particular circumstances of the case. In both instances he referred to, there would have been material damage in terms of the test which is to be applied. With the window example, there was a reduction in both the functional and aesthetic value of the window. With the example of the widening of a crack on an unpainted concrete floor, there could be a change to the aesthetic value of the floor. Whether the work required to remedy the damage would be the same as required to remedy pre-existing problems, can thus be, as Mr Wood submitted, a measure of whether the de minimis threshold is met. However, it is not necessarily "*the* measure".

[26] The cases I have referred to and the examples Mr Lynn gave illustrate that, 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.[14]

[27] My conclusion, that the damage has to be such that it affects the use or amenity of the building, parallels the judgment of the Full Court where it found that, with a claim concerning land, the damage had to affect the use or amenity of the land.[15]

[28] Mr Bligh's claim is that nearly all the damage his building suffered was of a structural nature. His view is that the building requires repairs to restore the building's structural integrity, not just to restore the aesthetic value of what was there before the earthquake.

[29] I accordingly accept the submission of Mr Wood for EQC that:

> In summary, the task for the Court is therefore to identify the particular physical change, alteration or disturbance (if any) that occurred to the structure or materials of Mr Bligh's house (and garage) as the direct result of the 4 September 2010 earthquake and how (if at all) any such physical change materially affected the structural integrity or performance of the house for the worse.

[30] There are aspects of the claim that relate to aesthetic and non-structural aspects of the house and garage although, because of the state the interior of the home was in before the earthquake, the aesthetic value of what was there previously was limited. As to those aspects of the house and garage, I must determine whether, having regard to the state of the house and garage before the earthquake, there has been damage that has materially altered the aesthetic value of what was there before the earthquake.

Burden of proof

[31] There is no dispute that Mr Bligh has the burden of proving, on the balance of probabilities, the facts that are material to his claim. He thus has the burden of proving there was damage caused by the earthquake and what is required to remedy that damage.

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14 *Parkin v Vero Insurance New Zealand Ltd* [2015] NZHC 1675 at [20].

15 *Earthquake Commission v Insurance Council of New Zealand Inc* [2014] NZHC 3138, [2015] 3 NZLR 381.

[32] Because he bears the burden of proof, EQC and IAG do not have to prove the truth of an alternative case as to what might have caused the damage. Even where they do offer an alternative explanation:[16]

> It is thus open to the Court to conclude that the cause of the damage, even on a balance of probabilities, remains in doubt.

In that situation, the insured will have failed to discharge his burden of proof.[17]

[33] In his opening submissions and citing comments made by the Court of Appeal in *Jarden*, Mr Lynn suggested that, if Mr Bligh established a credible prima facie evidential foundation for his allegations, the burden would effectively shift to the defendants.

[34] I accept, however, that the evidential burden will shift only if there is credible evidence supporting Mr Bligh's allegations to the extent required to meet the burden of proof which is on him. Ultimately, whether that burden has been satisfied must be considered having regard to all the evidence that has been presented, including the evidence for the defendants. Mr Bligh will fail to have met the burden of proof which he has if, when considering all the evidence, I hold he has not proved the particular material allegation on the balance of probabilities.

[35] The burden of proof is particularly important in this case. It was suggested to Mr Smith in cross-examination that there was various damage he had observed, the cause of which he could not be certain. He acknowledged that was the case. Mr Smith was somewhat uncertain as to what could have caused the cracking he observed at mortar joints above some windows in the interior and on the exterior of the east wall. He could not exclude the possibility for existing cracks to have widened or extended as a result of the earthquake, for there to have been cracking to the mortar joints in the east wall passage, possible lateral movement of a timber lintel in the west window on the south wall and possible movement of a top row of bricks on the first floor walls. He referred to a possibility that a garage pedestrian door had dropped because of an earthquake.

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16 *Jarden v Lumley General Insurance (NZ) Ltd* [2015] NZHC 1427 citing *Rhesa Shipping SA v Edmunds* [1985] 1 WLR 948.

17 *Jarden v Lumley General Insurance (NZ) Ltd* at [90] – [91].

[36] While Mr Smith thus acknowledged that, in certain respects, he could not exclude the possibility of earthquake damage, it was his opinion, based on what he said was a careful examination of the damage with due regard to the historical alterations to the house and other evidence available to him, that there was no earthquake damage. By bringing the claim, Mr Bligh has had the burden of proving, on the balance of probabilities, that the conclusion Mr Smith came to was wrong.

[37] It also needs to be said that my assessment of the evidence and my ultimate decision as to whether Mr Bligh has discharged the onus of proof must be made independently and objectively, neither influenced by feelings of sympathy or prejudice. That is particularly significant in this case where Mr Bligh has faced a struggle to bring his claim to court and is seriously ill.[18] Some might also think there could be prejudice against EQC as a state funded insurer, or against IAG as a major insurance company who had agreed to insure Mr Bligh's property. Mr Bligh and both EQC and IAG have, however, put their respective cases before the Court.

[38] My duty is to make my decision objectively and independently on the evidence presented. Thousands of people in Canterbury have resolved claims with EQC and their insurers on the basis of what the parties have accepted was earthquake damage. On many occasions, settlement has been achieved without too much difficulty. On other occasions, reaching agreement has been far from easy. Here, because of all that remains in dispute, it is for me to decide what has been proved.

Assessing credibility

[39] In assessing the credibility of witnesses and the utility of expert witness opinions, I have been assisted by evidence as to the state of the buildings both before and after the Darfield earthquake which, in significant ways, is independent of the witnesses.

[40] In 1988 Mr Bligh applied for a building permit for renovations to his home, including replacement of an original wooden beam. With the plans, was a letter from

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[18] Judgment was given for EQC and IAG by Clarke J in *Bligh v Earthquake Commission* [2010] NZHC 2619. The circumstances in which that happened are set out in the judgment of Associate Judge Matthews setting aside that judgment: *Bligh v Earthquake Commission* [2017] NZHC 995.

Mr Bligh's engineer, Mr Paul Kaye, summarising the nature of the work and why it was required. Mr Kaye has since died. Mr Kaye's statements as to the deteriorated condition of the wooden beam are hearsay. Mr Bligh confirmed in evidence that Mr Kaye has died, making him "unavailable as a witness" for the purposes of the Evidence Act 2006.[19] I consider the circumstances relating to the statements provide reasonable assurance that the statements are reliable and therefore admissible.[20]

[41] Just before the scheduled trial of these proceedings, in October 2016 Mr Bligh provided to EQC/IAG photographs from a family album showing the removal of the original wooden beam and its replacement with a concrete beam. These photographs provided objective information as to the state of the wooden beam at the time, the method of reconstruction and the way this might have impacted on the first floor brick walls.

[42] In 1992, Mr Bligh applied for building consent for alterations to the garage. Included in that application were designs for the erection of two steel portal frames to substantially strengthen one end of the garage and provide the support for a wide tilt door opening. There were also detailed specifications as to the foundations that were to be built at the foot of each of the portal frame supports.

[43] In 2007, an engineer, Mr Grant Wilkinson, was employed by Mr Bligh with respect to the next stage of proposed renovations. He took a large number of photographs of the home (the 2007 photographs).

[44] Mr Wilkinson inspected the house on the instructions of assessors for IAG on 28 September 2010, and again on the instructions of Mr Bligh on 13 January 2011. A number of the photographs he took on both occasions have been produced as evidence.

[45] Post-earthquake photographs of relevant parts of the house and the garage taken by Mr Bligh and other witnesses have also been produced.

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19 Evidence Act 2006, s 16(2)(a).

20 Evidence Act 2006, s 18. The statements were included in formal building plans submitted for a building permit by a professional engineer.

[46] I have thus been able to assess the evidence of witnesses, regarding both the pre-earthquake state of the house and claimed earthquake damage, against pre and post-earthquake photographs and records. My task in this regard was assisted by the comprehensive way in which all counsel directed the various witnesses to the earlier documentary information and the photographs. The parties were well served by counsel, whose familiarity with the evidence and photographic records demonstrated a comprehensive grasp of what was at issue, in all its considerable detail.

[47] I have had to make an assessment as to the credibility of certain witnesses, particularly the lay witnesses. The most important of these was Mr Bligh.

[48] Mr Bligh's credibility is especially important because he asks the Court to accept his evidence that the damage he is claiming for became apparent only after the Darfield earthquake and that the earthquake was of such a nature and magnitude that it was more likely than not to have caused the damage he described.

[49] Issues of credibility must involve an assessment of a witness's honesty in the evidence they have given. If a witness has been shown to have been dishonest, their evidence in respect of a matter where they have been dishonest will be put to one side. Dishonesty may also reduce the weight or value of other evidence the witness has given because it may detract from the reliability of that evidence. Nevertheless, just because a witness has been dishonest as to one aspect of his evidence, does not mean that all his evidence should be regarded as having been given dishonestly.

[50] Just as honesty is important, so too is reliability, because an honest witness can nevertheless be mistaken. That is particularly material in this case.

Mr Bligh

[51] Mr Smith said that, in his experience, it is common for people who are living in a house not to be aware of or concerned about what, from a living point of view, might have been to them inconsequential defects in a home prior to an earthquake. That accords with common human experience. I also accept that, after an earthquake, whether they continue to live in their home or not, people may not have had the

opportunity, time, inclination or expertise to identify, in all its detail, damage which may have resulted from the earthquake.

[52] It is for that reason I exercise some caution in weighing in the balance whether Mr Bligh referred to particular damage when his home was inspected for damage either by people acting on his behalf or for IAG or EQC at different times. Mr Bligh has however discussed the damage with various experts and others he engaged as these proceedings have progressed. In both his evidence before me and in his correspondence and communication with others over the years he has pursued his claim, he has demonstrated an intense awareness of the detail of what he claims was earthquake damage, and what others have to say about it. In certain respects, the consistency of his claims is relevant to an assessment of his credibility.

[53] With the delay between the Darfield earthquake and the finalisation of that evidence, there is the potential for his opinions to be based on reconstruction or supposition, but not necessarily so. The potential for that is somewhat greater because Mr Bligh's memory has been affected by his health problems.

[54] Mr Bligh's serious ill-health dates back to at least 2006. In June 2011, a neurologist said he was suffering from a moderately severe degree of Parkinson's disease and his memory then was "not so good". He suffered a heart attack in 2006. He was diagnosed with serious forms of cancer in 2012 and 2013.

[55] Nevertheless, I accept it has been mainly Mr Bligh's short-term memory that has been affected. Having lived in his home for decades before the earthquake and being involved in the reconstruction of various parts of the home, with plans to do a lot more, it could be expected that his memory of the general nature of his home before the earthquake would be firm and have remained clear. It is in relation to the detail that there is greater potential for unreliability. That potential must be greater when Mr Bligh was, for years, tolerant of living in an old house, the interior of which had been significantly dismantled and refurbishment had come to a standstill.

[56] The demeanour of witnesses in giving their evidence has been of little importance, as is often the case. Mr Bligh, because of his Parkinson's disease, speaks

very quietly and there were some instances when what he said was not clear to the Court transcribers. Although frail, Mr Bligh was firm and steadfast in his opinions. He demonstrated an understanding of the questions that were asked of him and the potential significance of them. When there was the potential for an inference adverse to him to be drawn from the evidence he had given, he was quick to proffer an explanation to counter that. He rarely demonstrated the intense anger and frustration that was evident in his exchanges from time to time, over a number of years, with EQC staff, included as they were in the bundle of documents before the Court. He was respectful to the Court and to counsel.

[57] So, my assessment as to Mr Bligh's credibility must be made with a careful consideration of what he said in evidence as against all the evidence that has been presented to me.

[58] Mr Wood for EQC did seek, somewhat tentatively, to put before Mr Bligh findings made by a Judge in 1981 that he had made dishonest statements when he was investigated for a potential theft and when giving evidence on the matter.[21] I allowed the cross-examination provisionally. The conclusions I have reached as to Mr Bligh's credibility are however based squarely on what he has said as to his present claim, both as it progressed and in his evidence before me. That being the case and given how long ago Mr Bligh was involved in the case referred to, I determined evidence as to that case not to be substantially helpful in assessing Mr Bligh's credibility. I thus disregard it as inadmissible.[22]

[59] Mr Smith identified damage to the first floor brick walls after the earthquake. He attributed the likely cause of that damage as being a drop in the first floor brickwork, either as a result of rot in the wooden beam that had separated the two floors before the installation of the concrete bond beam, damage to the brickwork with the installation of that concrete bond beam, or through the removal of exterior plaster in the 1980s.

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21 *Bligh v Police* CA104/81, 16 September 1981.
22 Evidence Act 2006, s 37.

[60] Given the significance of the wooden beams as a potential explanation for the damage that was observed after the earthquake, Mr Bligh's evidence as to the state of the wooden beam before the installation of the concrete beams was of importance.

[61] Mr Smith explained that, if the wood had been rotten, the deterioration in the wood was likely to be more marked on the exterior side of the wood where it was exposed to the elements. He said, if this had been the state of the wood, the outer side of bricks would have likely sunk relative to the inner wall of bricks. He said the dropping of bricks in this way would logically explain the vertical cracks that appeared in parts of the exterior brickwork. It also explained why, at the point of one of those cracks, the exterior wall had sunk vertically in relation to a steel dowel that protruded to the exterior from the inner wall of bricks.

[62] In giving oral evidence further to his brief, Mr Kearney was asked hypothetically what could have been the result of the timber rotting or decaying. He said the beam had been placed there to provide support for the brick wall. If the timber had deteriorated, it would have crushed/compressed and it would have been quite possible for the brickwork, either both layers or one layer, to vertically settle.

[63] Mr Kearney also accepted that, if the timber beam had deteriorated and caused differential settlements, that could have caused cracking in the plaster before the earthquakes.

[64] In his evidence as briefed, Mr Bligh said he was able to observe the condition of the original wooden bond beam before it was replaced. He said it had borer damage in some places but was not decayed. He said he had not observed any pre-existing damage to the walls before the beam was replaced. Mr Bligh rejected Mr Smith's opinion that the timber had deteriorated and had been defective. He sought to justify his answer, not by relying on his observation as to what he had seen of the timber beam before the earthquake, but by interpreting photographs showing parts of the beam at the time it was replaced. Mr Bligh said that he could see by the photographs that the builders had been using chisels and chainsaws to remove the wood. He said that, had it been rotten, they would have simply pulled it out with their hands.

[65] Mr Bligh's evidence as to the wood not having been rotten was significant because of its potential to have undermined Mr Smith's opinion that the cracks in the brick wall he observed after the earthquake had existed prior to the earthquake and had likely been caused by deterioration in the wood beam. It was also important because the expert engineer called to give evidence for Mr Bligh, Mr Kearney, rejected Mr Smith's opinion that the brickwork could have moved due to deterioration of the timber support. Mr Kearney said he had reviewed photos and said the timber did not appear to be overly deteriorated. He said the timber he observed from the photos looked like it was able to provide support.

[66] Mr Kearney enlarged on this by commenting on photographs taken of the beam at the time it was replaced. He said:

> The existing timber beam was difficult to move and required a great deal of chiselling out. The photos do not show a deteriorated rotted timber but rather a dry timber that has not rotted or deteriorated in any significant fashion. This timber cannot be said to have rotted, compressed and caused the replacement seen in the cladding brickwork.

[67] Mr Kearney accepted that the main reason he disagreed with Mr Smith's explanation was that he did not accept the timber had deteriorated. He said this was based on his interpretation of the photographs but also the descriptions from the owner as to how difficult it was to chisel the wood out, including through the use of a chainsaw. He did not accept that the photographs showed deteriorated timber as Mr Smith said they did.

[68] Mr Kearney and Mr Bligh were then confronted with the information that Mr Bligh's previous engineer, Mr Kaye, had sent to the Malvern County Council in 1988 when seeking approval for the strengthening, alterations and renovations of Mr Bligh's house. On the plans, the engineer wrote "the exterior walls are tied to membranes, new concrete band is to replace timber (rotten) band". Mr Kearney also accepted that, in a letter to the City Council dated 30 March 1988, Mr Kaye had indicated the replacement of the timber beam with concrete would improve the structural integrity of the building and had recorded the proposed alterations would involve the removal of "rotten timber" at first floor level.

[69] Mr Kearney accepted that seeing this did cause him to alter his opinion about whether the timber beam had deteriorated by 1988.

[70] EQC had the claim assessed by an engineer, Mr Robinson, who inspected the property on 12 January 2011.

[71] Mr Bligh did not deny telling EQC's reviewing engineer, Mr Robinson, in January 2011 that "the concrete band replaced rotten timber beams that originally ran around the perimeter at first floor joist level". This was as recorded by Mr Robinson at the time.

[72] Despite all of this, before me, Mr Bligh still would not accept the beam had been rotten. In sticking to his opinion, he relied not on observations he had made but on the supposition that, if the beam was rotten, then the floor joists would be rotten as well because they were a much softer wood than the Australian hardwood beam. When Mr Bligh was directly confronted with Mr Kaye's statement that the concrete band was to replace rotten timber, Mr Bligh said that Mr Kaye might have thought the band was rotten but would not have known for sure because he was not able to check as it was encased in plaster. He asserted that Mr Kaye's description was a guess based on the age of the house.

[73] All of this illustrates how, on a fundamentally important issue, Mr Bligh's evidence as to the state of a particular and important part of the building pre-earthquake was, at best, unreliable. Mr Bligh was unwilling to accept what I find was the reality of the situation and instead resorted to adopting a contrived explanation to suit his case.

[74] Following a first detailed inspection of the property on 23 December 2010 and a further inspection after proceedings had issued on 26 November 2014, Mr Smith's opinion was that the cracking he observed in the brickwork could not be attributed to the Darfield earthquake. At the time he formed that opinion, he knew the brickwork had been constructed over timber directly on top of the unreinforced concrete walls below.

[75] Mr Smith's initial view, that it was likely the timber beam had significantly deteriorated so as to require its removal and replacement with a concrete band, was later confirmed by the plans of the engineer, Mr Kaye, to the Council at the time the work was to be done. It was also confirmed by photographs.

[76] In a minute of 29 October 2013, Wylie J made directions for tailored discovery, specifically referring to the need to provide pre-earthquake photographs of Mr Bligh's house and documents such as building plans and correspondence with the local authority in relation to the house. Mr Bligh's affidavit of documents of 10 February 2014 disclosed only Mr Wilkinson's pre and post-earthquake photographs. The relevant photographs showing the timber beam being replaced were not provided until October 2016. When asked for an explanation for the late disclosure, Mr Bligh's then lawyers, by memorandum, said Mr Bligh had received the photographs electronically from relatives in Ireland about two weeks earlier.

[77] Under cross-examination, Mr Bligh accepted that what his counsel had said must have recorded what he had told his previous lawyers. It was established, through cross-examination, that Mr Bligh must have had the photographs at least by March 2016 because one of the photographs had been reproduced in a report from Mr Johnstone prepared in March 2016. Mr Johnstone was associated with Canterbury Earthquake Services/Claims Resolution Services and was assisting with Mr Bligh's claim. Mr Bligh accepted under cross-examination that he thus must have had the photographs earlier than he had told his previous lawyers. He explained this by saying that perhaps he had forgotten about them and then rediscovered them.

[78] What happened in this regard was unsatisfactory and does reflect negatively on Mr Bligh's reliability as a witness. What happened over discovery does not however establish that Mr Bligh deliberately concealed these photographs. Mr Johnstone prepared a brief of evidence for the trial of these proceedings that was scheduled to begin on 31 October 2016. Mr Johnstone and Canterbury Earthquake Services were closely associated with Mr Shand, the lawyer who was then acting for Mr Bligh. Mr Bligh could have reasonably assumed that the photographs he made available to Mr Johnstone would come to the notice of his solicitor and thus the other parties.

[79] For the reasons explained by Mr Smith and from my own observation of the photographs, I accept that they show there had been a significant decay within the timber beam. That is also consistent with Mr Kaye's description of the beam as "rotten".

[80] The photographs significantly affect the assessment I make as to the general credibility of Mr Bligh and the weight to be given to the opinions of Mr Kearney.

[81] Under cross-examination, Mr Bligh was reminded of what the engineer, Mr Wilkinson, had said after he had inspected the house on 28 September 2010. Mr Wilkinson had recorded in a report "the dwelling performed remarkably well considering the size and close proximity of the magnitude 7.1 Darfield earthquake" and said "from a safety perspective the dwelling is likely to have about the same seismic strength as its strength before the earthquakes".

[82] Mr Bligh was referred to Mr Smith's report of December 2010 following his inspection of 23 December 2010. Mr Smith had said "a close inspection of the cracking which was present in these walls, failed to identify any cracking which didn't pre-exist the earthquake". He also said in his report that the structure of the building had been detrimentally affected by the alterations. Mr Smith was satisfied the Darfield earthquake had not affected the safety of the building for occupancy.

[83] Confronted with the fact two engineers had expressed an opinion that the earthquake had not affected the structural strength of the building, Mr Bligh was first asked whether he accepted that had been the opinion of the two engineers. He had difficulty answering that precise question but said he did not accept the correctness of their opinion. His reason, as he put it, was "I don't believe it, it was the magnitude of the earthquake, it's impossible for there not to be some damage." In that context, he referred to seeing a model on YouTube of how a brick house, which he considered was like his, would vibrate during an earthquake, all the bricks coming apart and then going back together.

[84] After this exchange, he was confronted with the opinion of the further EQC engineer, Mr Robinson, in his report of 24 January 2011. Specifically, Mr Robinson's conclusion was put to Mr Bligh:

> I concur fully with Peter Smith's opinion that the building is structurally undamaged as a result of the Darfield earthquake and is no less safe to occupy than prior to the earthquake although the building safety has been affected by the removal of the ground floor walls and support to the first floor.

[85] At this point, Mr Bligh became agitated. His response to this was:

> Of course he would because it [sic] seven and a half years now and he is still trying to get out of the claim, spend millions of dollars on lawyers, the EQC and insurance company, there's thousands of people out there suffering, suffering like no one knows, people committing suicide because of what you do.

[86] It is of significance to me that, confronted with these opinions, at several points in his evidence Mr Bligh had an explanation for rejecting the engineers' opinions but, at those points, that rejection was based not on what he had seen or observed of the actual damage but on a belief. It is because of the intensity of that belief that there is a greater potential for his assertions as to whether damage was caused by the earthquake to have been based on supposition rather than an accurate memory of what he had observed before the earthquake and what he observed afterwards.

[87] As will be apparent in my subsequent consideration of Mr Bligh's claims and as to particular damage, there have been clear instances where he has not demonstrated the consistency I would have expected from a reliable and credible witness. For instance, I refer to his claim in respect of damage to the walls of the cellar in the annexe and his claims in respect of damage to the garage roof.

[88] There have been numerous instances where he has made firm assertions either about alleged earthquake damage or the state of his home before the earthquake and it has been clearly established that what he was saying was not true. In this regard, I refer to his evidence as to whether before the earthquake there could have been a quadrant on top of a skirting board in one of the upstairs bedrooms obscuring a pre-existing gap between the skirting board and the wall, his evidence that the crack on a path on the western side of the house was caused by the earthquake, and his firm

evidence that there was no cracking of the concrete floor of the house before the earthquake.

[89] As to each of the matters I have just discussed, Mr Bligh's credibility as a witness has been severely dented. There are other instances, which I will refer to, where his assertions as to damage having been caused by the earthquake has been undermined by the evidence of other witnesses or conclusions I have drawn from the photographic evidence presented to me and discussed by the various witnesses. It is for that reason that Mr Bligh has not been able to prove his case to the required standard simply on the basis that he says the damage he claims for only appeared after the earthquake and therefore must have been caused by the earthquake.

Mr Jerome Larason

[90] The evidence for Mr Bligh from his witnesses, Mr Larason and Mr Peter de Boer, was of little assistance to his case.

[91] Mr Larason said he is a friend of Mr Bligh. His primary contact with him was in picking him up and dropping him off before Freemasons meetings in Oxford. He shared with Mr Bligh an interest in restoring historic brick homes. He recalled a particular visit in the late 1990s when he had gone into the main living area of the house, had been seated on a couch opposite a log burner and had looked at French doors which Mr Bligh had recently installed. His evidence was that the work around the window had been done to a high standard. He also said he was particularly impressed with the bond beam strengthening work at the top of the wall and "how visually pristine the old concrete was at that time". He described the building as being "in fine shape" when he first saw it.

[92] Mr Larason said he was shocked by what he described as "the heavily cracked concrete floor" after the earthquake. He suggested Mr Smith's opinion as to cracking of the first floor brickwork pre-dating the earthquakes was inconsistent with what he saw of how "sound, tight, and free of noticeable cracking" window arches on the north and south facing walls of the house were when he saw the house before the earthquake.

[93] I do not consider Mr Larason's observations of the house were made with the sort of attention to detail to justify his opinions being given much weight. His observations of the work around the replacement French doors appeared to have been based on the view he had from the couch and not from any close-up scrutiny. Although he had commented on the state of the concrete associated with the new beam, when asked to look at some close-up photographs of certain areas associated with the beam, he was unable to identify what the photographs were of.

[94] Apart from the one occasion when Mr Larason said he had sat on the couch in the living area, it appeared that, in picking up and dropping off Mr Bligh, he had simply driven to the property and walked to the house. If he had entered the house on such occasions, it was only briefly. He had not noticed a crack above one of the window archways which Mr Bligh accepted was there before the earthquake. Although he said he had not observed any cracks on the living area floor when he had been there, the state of the floor was not a matter of particular interest to him. He commented that, at the time of the visit, there was more furniture in the room than there was later, when Mr Bligh's partner was no longer living there.

[95] Even if Mr Larason's impression of the building overall was that it was tidy with no obvious problems, that was inconsistent with the state of the building when Mr Wilkinson took the 2007 photographs.

[96] Mr Larason's evidence thus did not assist Mr Bligh in proving what the general condition of the house was before the first major Canterbury earthquake in September 2010 or what the structural integrity of the house, particularly the first floor brick walls, was before that earthquake.

Mr Peter de Boer

[97] Mr de Boer said he had been a friend of Mr Bligh for approximately 11 years and, since 2010, had maintained regular contact and visited the property. He said he had visited the house before and after the earthquake but described those visits as being of a social nature. He said he had visited the property on "several occasions" before the earthquakes. He said the building had been in a "state of renovation". The only feature of the building which he commented on with any specificity was cracking to

the floor. He said he had not seen that before the earthquake and thought he would have if it had been there.

[98] Mr de Boer gave evidence as to the way Mr Bligh spoke of what he wanted to achieve with the building and his pride in what he was doing, but that has to be of little relevance to me in determining just what the state of the building was before the September 2010 earthquake.

[99] Mr Kearney and Mr Smith agreed that the cracks radiating out from where there had been a fireplace were shrinkage type cracks. They would have been apparent soon after the concrete slab was formed in the late 1980s or early 1990s. It is thus clear that at least some of the cracking was there well before the 2010 earthquake. It is not necessarily cracking that someone would be expected to have noticed on a social visit.

Ms Dawn Clark

[100] Mr Bligh's close friend and former partner, Ms Clark, was also called as a witness for him. She had been asleep in an upstairs bedroom of the house in the early hours of the morning when the earthquake occurred. She described how frightening the earthquake was. She was aware plaster had fallen from the ceiling onto the bed. The pair went outside and sheltering in a car for the early hours of the morning after the earthquake, then went to check a house that Ms Clark owned at Glentunnel. They returned to Mr Bligh's property later that day.

[101] Mr Bligh ended up staying at Ms Clark's property from September 2010 until early 2014. Ms Clark had visited Mr Bligh's property from time to time since the earthquake but had never gone upstairs again because she felt unsafe there. She said that, when she returned to the property on the day of the earthquake, she was traumatised.

[102] She had never made a close inspection of Mr Bligh's home to see what damage it had suffered as a result of the earthquake. She did, however, identify two specific items of damage which she noticed after the earthquake. The first was what she said was a gap between the side of the window frame upstairs and the wall lining. She was

however clear that she had never looked at that specific area before the earthquake and thus could not say whether there had been a gap in that area before the earthquake.

[103] Ms Clark also said that, after the earthquake, she noticed for the first time the cracking on the ground floor slab. The cracking she referred to included both the longitudinal cracks and the cracks spreading out from the concrete base where the fireplace had been. I accept that Ms Clark could not recall seeing any cracks on the ground floor slab before the earthquake but this has to be of little weight to me in determining whether such cracks were there before the earthquake.

[104] Given the evidence of the engineers, at least some of the cracks would have been apparent within a year or two after the slab was laid in the early 1990s. With the changes that had occurred in the downstairs area and the larger quantity of furniture in the room at the time, that hair-line cracking would not have been of significance to Ms Clark as a visitor to the home. At least some of the longitudinal cracking in the kitchen area would have been hidden by vinyl floor coverings remaining as late as 2007. The coverings are apparent in photographs taken by Mr Wilkinson.

[105] Ms Clark's evidence thus does not assist Mr Bligh in proving there was structural damage to his home in the earthquake but her evidence as to plaster falling from the ceiling onto the bed was consistent with what had been some plaster fill from cracks in the tongue and groove above the bed being displaced as a result of the earthquake.

Mr Peter Smith and Mr Mark Kearney

[106] Of crucial importance in this case is the evidence given by the parties' structural engineering expert witnesses, Mr Kearney for Mr Bligh and Mr Smith for EQC and IAG. Both are experienced civil engineers who have had extensive involvement in assessing damage caused to buildings by the Canterbury earthquakes and the repair strategies required to deal with such damage. Both presented their evidence in a balanced way, appropriate for experts whose role is to assist the Court. However, I give greater weight to the opinions expressed by Mr Smith.

[107] Mr Smith was eminently qualified to assist the Court with the expert evidence he gave. He has had nearly 50 years' experience as a structural engineer with experience over decades of carrying out earthquake damage assessment of domestic buildings for EQC. His expertise is obviously recognised by his peers. He gave expert structural engineering advice to the Canterbury Earthquakes Royal Commission. When he gave evidence, he was then President of the New Zealand Society for Earthquake Engineering Incorporated. He had worked with MBIE and other technical groups on the securing of unreinforced masonry facades.

[108] Through cross-examination, it was suggested that, because of his extensive association with EQC in giving expert evidence, Mr Smith might have a bias towards discounting damage as earthquake damage. I do not accept that his independence as an expert would be compromised on that basis. I can take judicial notice of the fact that, on many occasions, EQC has been engaged in litigation where they have ultimately accepted liability for damage that has been the subject of dispute. Importantly however, I am satisfied that, when Mr Smith was first assigned to inspect Mr Bligh's property, he approached his task with an open mind and carried out a thorough and detailed inspection. He was balanced, measured and careful in the opinions he expressed. An illustration of this was his acknowledgement that he could not discount the possibility that the Darfield earthquake had caused some of the damage in the particular ways put to him by Mr Lynn. Those opinions were also thoroughly tested by counsel against the photographs that showed the actual damage he was commenting on in ways that enabled me to assess the weight I should give to his opinions. His opinions were of real assistance to me.

[109] Mr Smith had a significant advantage in assessing the nature of the damage in that he first inspected the property on 23 December 2010 and was able to examine the outside of it. That examination included climbing up a ladder and examining cracks to the brickwork with a magnifying glass. He was thus better able to assess the age of those cracks, relative to the Darfield earthquake, than Mr Kearney was. It was the sort of examination which Mr Wilkinson had, in his reports, indicated would be necessary but which Mr Wilkinson himself did not make.

[110] Mr Smith carried out further detailed examinations on 29 January 2014, 26 November 2014 and 23 November 2017.

[111] On 29 January 2014, Mr Smith inspected the house and garage. Mr Bligh and two representatives from the litigation funder, Canterbury Earthquake Services, Messrs Johnstone and Betts, were present, as was a quantity surveyor, Günther Hanne, appointed by EQC. On 26 November 2014, Mr Smith inspected the property with an engineer, Mr Pavol Csiba, acting as an expert for Mr Bligh in the proceedings that were then before the Court. These inspections were for the purpose of the experts producing a joint report for the Court, which they completed on 22 October 2015, highlighting areas of agreement and disagreement.

[112] In making his inspection at that time, Mr Smith must have had his attention drawn to those features of the damage which both engineers then considered significant and features of that damage which might have been consistent with either pre-earthquake or earthquake damage. Mr Kearney was not involved in that process.

[113] Mr Kearney inspected the property on 31 October 2016, the morning of the first scheduled trial of these proceedings. Employees of his firm had previously photographed and inspected the property on 5 October 2016. There remains uncertainty as to whether Mr Kearney was at the property at all on that occasion. In his brief of evidence served on 14 October 2016, prepared for the first scheduled trial, he summarised what he said was "the damage caused by the Canterbury earthquake sequence that I could observe, or discern from other reports, or as advised by the owner".

[114] In his evidence, Mr Smith said the opinions he was expressing were based on his inspections, reports he had referred to and other specified material. He indicated that the material he had considered did not include what he had been told about the damage by Mr Bligh.

[115] In his evidence for this trial, Mr Kearney said the conclusion he had reached as to the damage caused by the Canterbury earthquake sequence was based in part on what he had been "advised by the owner". In all the circumstances of this case and

the findings I have made about Mr Bligh's credibility, to the extent Mr Kearney relied on or was influenced by Mr Bligh's beliefs, the foundation for Mr Kearney's opinions was questionable.

[116] The way in which this has affected the weight to be given to the engineers' opinions is illustrated through the way I have had to consider their opinions as to whether decay in the wooden beam around the building could have caused damage to the first story brickwork. Mr Kearney accepted, in cross-examination, that his view as to the extent of the deterioration had been influenced to some extent by what Mr Bligh had told him about the state of the wooden beam.

[117] I find that Mr Kearney allowed Mr Bligh's views to inappropriately influence the ultimate opinion he came to on this issue but also the way he interpreted the photographs showing the state of parts of the wooden beam when it was replaced. I have examined the photographs myself and considered Mr Smith's interpretation of those photographs. I do not accept that Mr Kearney was justified in minimising the potential for pre-existing damage to the brickwork to have resulted from the deterioration of the beam on the basis the photographs, provided by the home owner of the concrete beam installation, showed "the removed timber did not appear to be overly deteriorated".

[118] I find Mr Kearney was wrong in the assessment he made of particular recorded damage in certain instances. Because of that, I find myself having to be much more cautious in accepting his opinions overall than is the case with Mr Smith's evidence.

[119] Mr Kearney referred to the dislodgement/displacement of bricks as being damage which could not have arisen just as a result of long-term static settlement. In summarising the damage that he considered had been caused by the Canterbury earthquakes, he referred to the horizontal displacement of an external brick at the north-western corner. This conclusion was based on a misleading interpretation of a photograph which had been shown to him by Mr Bligh. Under cross-examination, Mr Kearney acknowledged that, in reaching his view as to the dislodgement of the brick, he had relied on what he had been told by Mr Bligh. He could not say from anything he had observed that the dislodgement was caused by an earthquake or earthquakes.

[120] Mr Smith explained that the photograph of the particular brick, which Mr Kearney relied on as evidence of the earthquake damage, showed that the brick was in a different position than it had been when Mr Smith took the photograph of it in December 2010. Mr Smith's photograph from 23 December 2010 showed the brick to have been in the same position as was portrayed in the 2007 photographs.

[121] Mr Kearney also said in his brief of evidence that his conclusion, that the specific damage to the property and exacerbated historic damage was more likely than not to have resulted from the Canterbury earthquake sequence, was based in part on the proximity of the building to the earthquake(s).

[122] The level of peak ground acceleration (PGA) in an earthquake is a factor indicating how much damage could be expected to have been caused by an earthquake. Generally, the higher the PGA in a given location, the more damage might be expected to the buildings in that area. The geotechnical engineer, Mr Gordon Ashby, cautioned that PGA is not determinative and other variables, such as topography, the soil profile and the structure of the building itself, would also influence the extent of resulting land or building damage. Using one of the two commonly accepted methods for measuring PGA, the acceleration at Mr Bligh's property on 4 September 2010 reached 0.19 g. By comparison, the 22 February 2011 earthquake recorded PGA/h values of 1.2 g and 0.38 g at the Heathcote Valley and Christchurch Hospital.

[123] Mr Ashby also referred to the modified Mercalli intensity (MM) as a widely accepted measure of the felt intensity of an earthquake. Again, he explained the application of the scale has its limitations. Nevertheless, on a scale of one to twelve, with one being at the low end of intensity, he calculated the level of felt intensity in Waddington for the Darfield earthquake as being between six and seven. He said this was consistent with the likely PGA for Mr Bligh's property and the calculated likely level of shaking on the MM scale which suggested that well-constructed buildings could be expected to have only modest damage.

[124] Application of both the MM and PGA scales showed that Mr Bligh's property was away from the area most intensely affected by the Darfield earthquake. Where it was most intense, the effects on the MM scale would have been between 8.0 and 8.9.

[125] There was no expert evidence that the earthquake sequence, and particularly the Darfield earthquake (which was the earthquake most likely to have had an impact), had to have caused any of the damage observed simply because of the location of that earthquake or its force.

[126] Whether damage would have been caused to Mr Bligh's buildings by the earthquakes, particularly the Darfield earthquake, would have depended to a significant extent on the nature of the buildings.

[127] Mr Bligh's home had solid concrete ground floor walls. It was not suggested by any of the experts that those walls suffered significant structural damage in the earthquakes.

[128] The concrete ground floor slab was constructed according to engineering designs approved by the Malvern District Council. The slab was to be generally 100 mm thick. Next to the perimeter foundations and at regular intervals across the floor, the concrete was deeper with additional reinforcing. The concrete slab and those concrete beams thus braced the perimeter foundations.

[129] There was agreement that the concrete beams were well designed with significant reinforcing and installed to a high standard. I accept there was no structural damage to them in the earthquakes. In several places, there was a short horizontal crack apparent after the earthquake. Both Mr Clark and Mr Smith were certain that these horizontal cracks were what they described as cold cracks of the sort that can typically occur through the way the concrete is poured. There was no suggestion from Mr Kearney that those cracks would have affected the structural strength of the beams.

[130] Mr Kearney also agreed there had been no change in the area where there was horizontal cracking in the concrete beam apparent in the photographs of that area taken by Mr Wilkinson before and after the earthquake.

[131] On all sides of the house, there were, at close and regular intervals, concrete upstands in the beam extending vertically into the brick walls above to a level of three bricks. The beam thus provided support for the bricks vertically and, with those

upstands, also provided support laterally. With the concrete beam in place and with there being no vertical cracks in that beam as a result of the earthquake, it was not possible for either of the double brick walls above to drop as a consequence of the earthquake. It was also not possible for the outer side of bricks to drop relative to the inner plane, as had been possible with the rotting of the timber beam and the temporary loss of support for bricks during the reconstruction process. The brick walls above the beam had always been interlocked at the corners. The walls supported the roof but it was of light construction with steel trim deck roofing.

[132] As Mr Clark pointed out, and as shown by photographs, there was no disruption to the connection between the southern wall of the house and the annexe. The annexe was generally of light-weight construction. It was effectively a lean-to. The fact there was no disruption to the connection between the southern wall and the annexe, is further evidence as to just how stable and solid the main house structure was during the Darfield earthquake, and subsequent earthquakes.

[133] The support provided by the concrete beam and the new concrete floor readily explains why there might well not have been any further material damage to the brickwork as a result of the earthquakes, consistent with Mr Smith's observations on 23 December 2010 and later.

[134] Mr Smith pointed out that it is possible for brick masonry buildings to be totally undamaged in a significant earthquake. That had happened subsequently in the Kaikoura earthquake and in Wellington where almost all the unreinforced masonry buildings were subjected to severe shaking but where there had been few areas of damage in those buildings.

[135] In his second brief for the rescheduled trial, Mr Kearney described damage to the bricks more generally, referring to "cracking, some fell out, and some are loose, and some can be pulled out by hand". He said this was all indication of movement/shaking to the wall, and *the only external* force that can be considered to have acted on the wall brickwork is the earthquake(s). He noted, however, that any movement in unreinforced brickwork will compromise its structural integrity. I do not consider Mr Kearney was justified in saying that the only external force that could

have acted on the wall brickwork was from the earthquakes, given the brick walls had to be supported by the timber beam and there was significant evidence that at least some of that support was lost with deterioration of the beam and with the process of reconstruction.

[136] Mr Kearney suggested the cracking in the south-east corner of the garage could have occurred because there was another slab under the garage that might have acted as a lever on the newer slab. Mr Smith had seen no evidence of an underlying slab and there was no photograph showing such a slab.

[137] Mr Smith's evidence as to the damage he observed and commented on was extensive, meticulously detailed and supported by photographic evidence consistent with his observations. Mr Kearney's investigation was, in my assessment, not as detailed or as thorough as Mr Smith's.

[138] Ultimately, I afford greater weight to the opinions expressed by Mr Smith because I was able to assess the validity of those opinions against what was apparent as to the physical state of the building and the features each expert referred to. With the careful assistance of all counsel, each engineer discussed the particular damage that had been observed with reference to photographs of that damage. I had the benefit of contextualising this evidence with a site visit. Generally, Mr Smith's opinion as to how observable damage had probably been caused was more consistent with the physical damage as recorded than was Mr Kearney's evidence.

Mr Malcolm Clark

[139] Mr Clark has been employed by EQC since September 2010. He has held a variety of roles identifying earthquake damage and advising on repair strategies. He was initially appointed as an estimator but has had a number of promotions until, in September 2015, he was promoted to technical manager, managing and mentoring a team of five but more recently four technical advisers.

[140] He completed an apprenticeship in carpentry and joinery in 1981 and obtained an advanced trade certificate in 2008. His employment with EQC did not disqualify

him from giving evidence as an expert.[23] A witness with a financial interest in earthquake litigation through litigation funding arrangements is not disqualified from giving evidence as an expert.[24] I accept that Mr Clark's involvement as a technical adviser to EQC did not inherently mean that he would be biased against finding claimed damage resulted from the earthquake. It is a matter of public record that EQC, either without litigation before the Courts or after proceedings have been issued, has accepted liability for damage to the extent of the "cap". Ultimately, my acceptance of Mr Clark's evidence as an expert is based on my acceptance that his opinions have been based squarely on what he observed, his knowledge of construction methods and building materials, and how they might perform in different situations to explain what he observed of the damage described in his evidence.

[141] Mr Clark was assigned the task of inspecting the property after a complaint was made because it was considered his experience qualified him to do the inspection, particularly his experience in dealing with historic buildings in the United Kingdom.

[142] What Mr Clark observed and the opinions he expressed could be understood and checked as a matter of logic and as against the photographic record of what he observed. His particular expertise was helpful to me in determining the issues I had to deal with.

[143] Mr Clark's evidence is important because he inspected Mr Bligh's house and garage internally on 8 December 2010. Mr Smith inspected just the exterior of the house on 23 December 2010. Because Mr Bligh was not present, Mr Smith was unable to inspect the inside of the house or garage at that time.

[144] Mr Bligh was present during Mr Clark's first visit on 8 December 2010. Mr Clark was aware EQC had first inspected the property on 5 October 2010 and an original EQC scope of works and statement of claim appeared to acknowledge damage as a result of the earthquake event. At the time of the inspection, Mr Clark noted he

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23 *C & S Kelly Properties Ltd v Earthquake Commission and Southern Response Earthquake Services* [2015] NZHC 1690 at [146]; *Geddes v New Zealand Dairy Board* HC Wellington CP52/97, 27 August 2003; *ANZ National Bank Limited v Commission of Inland Revenue* (2005) 18 PRNZ 114 (HC) at [23];

24 *Prattley Enterprises Ltd v Vero Insurance New Zealand Ltd* [2016] NZCA 67 at [99].

found no damage that resulted from the earthquake although he considered the dwelling had extensive superficial cracking mainly of an aged type. He noted the dwelling was an ongoing "work in progress", the lower story being totally "open plan" with the removal of all internal walls. He noted the upper level floor was propped by a number of mismatched timber supports, causing the upper level floor to sag and move as they walked over it. He was taken to the large garage that Mr Bligh claimed had suffered earthquake damage. He noted his observations as to the cracks there.

[145] Mr Clark inspected the property again in August 2016 after Mr Bligh had served his evidence for the original hearing scheduled for October 2016. He inspected the buildings again in November 2017 in preparing his evidence for the 2018 hearing.

[146] As an illustration of how Mr Clark's carpentry expertise was of assistance to me, I refer to his evidence about apparent damage on front door mouldings. As part of his renovations, Mr Bligh had installed an impressive and elaborate front door to his house. It is apparent in the photograph which is at the beginning of this judgment. It sits between two new concrete columns with new concrete infill between the top of the door frame and the concrete beam. There are window panels on either side of the door and above it, framed by painted wooden mouldings. Mr Bligh claimed in evidence there was cracking at mitre joints in the mouldings on the door in several places. The cracking is evident in close-up photographs of the door that Mr Bligh took in November 2017.

[147] Mr Clark was of the opinion there was no cracking elsewhere on the framework in the panels next to or above the door. He would have expected to see further cracking if the cracking on the door joinery was earthquake related.

[148] Mr Clark elaborated on this further when giving evidence. He pointed out that, near these areas, there were hard surfaces which rain could bounce upwards from, putting further moisture on the door. He also said that, with the orientation of the building, the doors would be getting a lot of sun throughout the year which was more likely to cause the change in paint structure at the corners. He said there was more potential here for cracks to appear because the ends of the adjoining wood had not been painted, as is normally recommended. He explained that, if there had been

earthquake movement to the door, he would have expected to see evidence of related movement to the side panels because they were rigidly in place and there would not be the potential for flexing, as can happen with a door, where there is a gap between the door and the doorframe.

[149] Mr Clark's explanation was logical, consistent with the photographic evidence and thus compelling.

The claimed damage as particularised

[150] I deal now with the various alleged areas of earthquake damage as particularised by Mr Bligh in his statement of claim and as categorised by Mr Lynn in his opening submissions.

New cracking and exacerbation of existing cracking generally to all brick walls
Exacerbation to the vertical cracking on the first floor brickwork walls
Horizontal displacement of external brick at north western corner
Dislodgement of brick on south western outer face of the first floor
Separation of the outer bricks from the inner bricks including at the edges of the brick work around window openings on the external walls
Loosening of window frames with relation to the surrounding brickwork

[151] In opening, Mr Lynn said this was the major focus of Mr Bligh's claim.

[152] Mr Wood, for EQC, submitted the most significant factual issue in the proceeding was whether the Darfield earthquake structurally damaged the first floor brick walls.

[153] Mr Bligh said there had been some cracking of the brick walls before the earthquake. He said that, on the external walls where the brick had already been exposed before the earthquakes, he noticed new cracks and existing cracking that had worsened. Mr Bligh said there was new cracking around windows on the south wall, a pre-existing crack above a window had opened up, and there was new cracking on other walls in the top tier brick layers which he inspected from a ladder. He said joins had been tight before the earthquake. He said that many of the bricks on the top tier, visible from inside the roof space particularly on the north side of the house, had cracked and the mortar had come adrift. He said they were not damaged like this when he had replaced the roof or the fireplace in the 1980's.

[154] It was Mr Kearney's evidence that, to repair this damage to required contemporary standards, the brick walls would have to be strengthened through the application of shotcrete to both the internal and external surfaces of the brickwork. The shotcrete is sprayed over reinforcing so as to effectively brace the whole wall on both sides. The walls would be further strengthened by tying the two planes of brick to each other internally with Helifix ties.

[155] It was also contended for Mr Bligh that, if this was necessary to provide adequate structural strength for the brick walls, aesthetically the shotcrete would also have to be applied to the ground floor concrete walls so there would be a uniform surface on both levels of the house.

[156] The application of shotcrete would also fix the cracks that Mr Bligh claimed had occurred as a result of the earthquake, as apparent in the plastered surface above the windows on the south wall of the house and on the concrete beam. Application of the shotcrete on the internal side of the brick walls might have necessitated cutting away part of the first floor around the perimeter so that shotcrete could be applied to the bricks adjacent to the flooring.

[157] Mr Smith was of the opinion that the weaknesses in the brick walls, as apparent from the cracks and other damage he observed, indicated there were largely localised areas of damage. He was of the opinion that those localised areas of damage and any general weakness in the brick walls from the damage he had observed, could be remedied by the raking out and replacement of loose bricks and the installation of stainless steel helix bars. Mr Smith considered cracking, as apparent in the concrete beam, in other concrete at ground floor level and in the plaster above the windows on the south side, could be fixed through the application of an epoxy grout.

[158] The structural engineer, Mr Wilkinson, was engaged by Mr Bligh in early 2007 to provide advice on the completion of Mr Bligh's intended renovations. He also visited the property twice after the Darfield earthquake, producing two reports on the damage and taking further photographs. Mr Wilkinson did not give evidence but his reports and photographs were relied on by both structural engineers who gave evidence. All parties accepted that his reports were to be treated as admissible

evidence. The fact he was not called obviously affects the weight I can give to those reports.

[159] Mr Wilkinson was first engaged by assessors for IAG to provide a report for IAG. He inspected Mr Bligh's property on 28 September 2010. He introduced his report by saying it was "for the use of the building insurer to help assess the occupancy of the building in the short term and assess the structural damage from the recent earthquakes". He stated that:

> A brief walk over assessment was undertaken with Ricky Bligh representing the owner to assess the primary structural seismic suitability of the premises for occupancy following the earthquake that occurred on 4 September 2010 (and subsequent aftershocks up to the time of the inspection). The inspection was visual only for the inside and outside of the building and no drawings or documents were reviewed, and no calculations or other analyses were carried out. Electrical and mechanical equipment, gas connections, water supplies and sanitary facilities were not inspected, and second elements (partitions, windows, fittings and furnishings) were not considered.

[160] In the report, Mr Wilkinson said he was familiar with the house, having advised the owner on seismic strengthening options in around 2007. As to damage observed, Mr Wilkinson said:

> While I haven't checked the extent of cracking damage with the extensive photographs that I took in 2007, it is my opinion that the relatively extensive cracks in the walls are likely to have widened and lengthened as a result of the recent earthquakes. Some new cracks were clearly evident in the new concrete elements that the owner has constructed.
>
> The cracks that I observed were generally in the order of up to 0.5 mm wide which is to be expected even in modern concrete constructing using current standards. Several cracks were wider than 0.5 mm but they tended to be the historic cracks that could have widened slightly the recent earthquakes.
>
> It was not easy to distinguish between the historic cracking and fresh cracks without a very close inspection and an attempt made to log the cracks. As to building safety, the dwelling performed remarkably well considering the size and close proximity of the M7.1 Darfield earthquake.
>
> From a safety perspective, the dwelling is likely to have about the same seismic strength as its strength before the earthquakes.

[161] His comments under recommendations included:

> Clearly, all the superficial cracks and damage arising from the earthquakes as noted above will need repair.

> More time could be spent logging all cracks and specifically identifying those new cracks or those that have widened and or lengthened as a result of the earthquakes. The new cracks or wider cracks can be injected with epoxy to structurally reinstate the original strength of the uncracked concrete.

[162] Mr Wilkinson and his company, Ruamoko Solutions, was engaged by Mr Bligh to further inspect the property on 13 January 2011. Mr Wilkinson introduced it by saying it was a follow up report:

> … for the use of the owner and building insurer to help assess the occupancy of the building in the short term and assess the additional structural damage from the aftershocks that have occurred since our previous inspection.
>
> A brief wall over assessment was undertaken with Ricky Bligh, the owner, on 13 January 2011 to assess the primary structural seismic suitability of the premises for continued occupancy. The inspection was visual only for the inside and outside of the dwelling and the garage/shed and no drawings or documents were reviewed, and no calculations or other analyses were carried out.
>
> …
>
> Comments regarding this building are limited by the nature of the inspection, and are not intended to be used outside the context of this earthquake event, and reinspection may be required following further aftershocks.

[163] The report included verbatim comments made earlier as to damage observed to the dwelling. The observations made in the earlier report as to cracks in new concrete elements, with gaps up to around 0.5 mm wide, was followed with a new paragraph:

> The inspection on 13 January showed little change to the cracking of the walls and concrete floor slab, however, it is most likely that the thousands of aftershocks that have occurred since my inspection will have caused some of the cracks to slightly widen and lengthen.

[164] Following this was the same comment that more time could be spent logging all cracks and specifically identifying those new cracks or those that have widened and/or lengthened as a result of the earthquakes.

[165] Mr Wilkinson's report also included comments on the report provided by Mr Smith from December 2010 for EQC. Mr Wilkinson agreed that many of the cracks had been painted over but said a close inspection had revealed "very small shards of fresh concrete adjacent to the sides of some of the cracks suggesting recent movement

at those locations". He agreed with Mr Smith that the Darfield earthquake had not materially affected the safety of the building for occupancy. In saying there had been a widening of cracks and new cracks around bolts, he disagreed with Mr Smith's opinion that there was no new damage to brickwork.

[166] In a number of respects, Mr Wilkinson's opinions, as expressed in that report, were consistent with the conclusions reached by Mr Smith. He confirmed there was cracking of the brickwork that preceded the earthquakes. He did not consider, after either of his brief inspections, that the seismic strength of the buildings after the earthquakes would have been different to what it had been before. He considered that a very close inspection would be required to distinguish between historic cracking and fresh cracks.

[167] The first floor walls are of double unreinforced brick construction, 230 mm thick. Mr Smith observed the presence of wide cracking on the exterior with no cracking on the interior. He indicated that the walls were primarily two independent layers of brick with poor connectivity between them, as is apparent from the exterior of the north wall, the east wall and the northern portion of the west wall before the earthquakes.

[168] Mr Smith was at an advantage in that he first inspected the house on 23 December 2010. Mr Bligh was critical of the fact that this inspection took place when he was not present. Mr Smith says he tried but was unable to contact Mr Bligh. Mr Bligh says Mr Smith did not make any effort to contact him and believed this was deliberate. It might have been reassuring to Mr Bligh if he had been there but I accept there were good reasons for Mr Smith to take advantage of the opportunity to make the inspection at that time. I also accept that Mr Smith had tried to contact Mr Bligh to tell him of the visit and that it was for Mr Bligh's benefit that the inspection be carried out without delay. Had Mr Smith verified there was significant earthquake damage, his inspection would have expedited the settlement of Mr Bligh's claim.

[169] Mr Smith identified vertical cracks in certain parts of the exterior brickwork. He said such cracks were not typical of earthquake damage where cracking is more likely to be of a diagonal nature from lateral loading. It was accepted by all witnesses

that the reinforced concrete beam significantly strengthened the building. There was no evidence of vertical cracking in the concrete beam or any damage to indicate that it would have failed to support the brick walls above during the earthquake. The beam was on top of the solid concrete first floor walls. There was no evidence that the beam had dropped relative to the walls either below or above the beam as a result of the earthquake. Logically, it was thus unlikely there would have been vertical cracking of the brickwork as a result of the earthquake.

[170] Mr Smith explained that the surfaces of recently fractured concrete or masonry are clean and fresh. Older cracked surfaces show evidence of oxidisation and the build up of dirt and grime.

[171] Mr Smith said that, in his close inspection of the brickwork in December 2010, he found no cracking which, in his opinion, could be attributed to the Darfield earthquake. His other general observations were that:

- the cracks could be seen in the photographs Mr Wilkinson took before the earthquake;
- significant vertical cracks in the un-plastered first floor wall all coincided with the steel dowel embedded within the brickwork;
- the vertical displacement of the steel dowel identified that vertical settlement of the outer skin had occurred prior to the installation of the concrete band (which I accept because the concrete band on top of the concrete ground floor walls provided support for the brickwork above to prevent vertical dropping of the brickwork as a result of the earthquake); and
- consistent with Mr Kearney and Mr Bligh's evidence, he did not identify any reflected cracking to the internal surface finishes. This was consistent with his opinion that the external cracking had been present for many years and pre-existed both the Darfield earthquake and the installation of the concrete band at first floor level.

[172] Mr Smith could not discount the possibility of bricks moving in the earthquake but considered the loose, damaged or broken bricks were primarily the result of the way they were laid, the potential disturbance caused by removal of the internal plaster and disturbance resulting from deterioration of the timber between the unreinforced concrete ground floor and the unreinforced brick first floor walls.

[173] Mr Smith said he knew the brickwork had been constructed over timber directly on top of the unreinforced concrete walls below. Mr Smith's initial view, that it was likely the timber beam had significantly deteriorated so as to require its removal and replacement with a concrete band, was confirmed by the plans of the engineer, Mr Kaye, to the Council at the time the work was to be done. It was also confirmed by photographs.

[174] Mr Smith considered there could have been damage to the first floor brickwork through the process of removing the timber beam and replacing it with concrete. There was no disagreement that the work had been carried out to a high standard. A steel plate was installed to support the brickwork. Jacks were made and put in place to provide support for the steel plate between the top of the concrete ground floor walls and the steel plate. Substantial steel reinforcing rods ran horizontally to provide reinforcing for the concrete beam. Bricks above the beam were removed at regular intervals so there could be concrete upstands going vertically into the wall, presumably to stiffen the brickwork against lateral movement.

[175] The portions of the timber beam that are evident in the photographs and which show decay appear to be only small portions of the original beam. In all the photographs, significant portions of the beam have been removed. The photographs show the jacks that were put in place to provide support instead of the beam and also reinforcing rods prior to the replacement of the total beam with concrete.

[176] It is easy to understand how, with all this work being done, there could have been damage to existing brickwork and at least a temporary loss of vertical support which could result in cracking. Mr Smith referred to photographs taken during this reconstruction process. One showed an area where there were no longer bricks immediately above the beam so there was, when the photograph was taken, no support

for the bricks above. The photograph showed loose bricks placed within that gap. Another photograph showed a bottom row of bricks that were loose, having dropped from the row above. Another showed a gap of approximately 10 mm between bricks and a length of wood which remained below the brickwork, consistent with a loss of support for bricks above through the jacking up process and damage to the mortar.

[177] Mr Smith said that the timber most susceptible to decay would have been on the outside of the beam where it was exposed. The weight of the outer layer of the first floor brick walls on the decaying timber could well have resulted in differential movement to the first floor brick walls. He said that such movement would explain the vertical displacement of the dowel clearly evident in a photograph showing a significant historic crack in first floor brickwork on the east wall at the north end.

[178] Plaster covering the brickwork had been removed after the beam had been replaced. Mr Smith considered it probable that removal of the plaster surface may have also resulted in damage to the brickwork, particularly near the top of the wall where there was less weight acting on the bricks which he said were embedded in a weak lime-based mortar.

[179] It was Mr Smith's opinion that the majority if not all of the damage to the brickwork was caused by:

(a) the expansion of corroding metalwork in the wall;

(b) removal of the external plaster;

(c) movement of the brickwork due to deterioration of the timber which had, for many years, supported the brickwork and which was exposed to the effects of external moisture; and/or

(d) the removal of the timber beams and installation of the concrete band at first floor level.

[180] Mr Clark had looked at the brickwork on 8 December 2010. He said he was conscious of how brickwork can become an issue under a seismic event and he looked for indicative signs of that, particularly of step cracking that would indicate earthquake

damage. It did not appear to him then that there were any sharp edges to the cracks in the bricks.

[181] Mr Clark considered the brick walls appeared exactly as he would have expected where plaster had been hacked off. The fact there was no plaster on the bricks made it easier to assess whether there had been earthquake damage to the bricks.

[182] Mr Clark saw nothing around the windows that was normally indicative of earthquake damage.

[183] Mr Clark was clear that he did not observe anything on his visit to the property in 2010 to indicate that existing extensive cracks in the walls were likely to have widened or lengthened as a result of recent earthquakes, as Mr Wilkinson had suggested was likely.

(i) The south wall

[184] Mr Smith observed that the particular vertical cracking on the south wall near its western end was in an area where he considered it was likely to have been caused by decay in the supporting timber prior to installation of the concrete band. He observed vertical cracks near the west end of the south wall and what he considered to be similar pre-existing cracking to the east and west wall. He observed paint in cracks on the south wall, the crack edges were eroded and the surfaces aged. There was the residue of an asphaltic sealer in a crack, established moss/lichen growth in the crack and the crack was not reflected in the interior.

[185] Mr Bligh referred to an area of bricks on the south wall. The bricks sit on what appears to be an upstand of the concrete beam. Near the bricks was the end of a bolt that Mr Bligh said held a stringer for the annexe to the second story brick wall. The photographs show gaps around some bricks near the bolt and immediately above the concrete upstand. Mr Bligh says these were exposed when he removed plaster from the surface on that area after the earthquake. He said that, before he had taken the plaster off in these areas, the plaster was undamaged. He removed the plaster to investigate what, if anything, had happened beneath it. Mr Bligh attributed the state of the bricks in this area to the earthquake.

[186] Mr Smith explained how it appeared, from the nature of the concrete and shaping of the bricks in this area, that there had been a crude installation of the bricks at that point, in association with the concreting work, which would explain gaps in the brickwork in that area. He said he was absolutely satisfied the damage related to the installation of the concrete band. He pointed out that, if cracks around the bricks had resulted from lateral movement in the bricks, he would have expected to see a crack in the concrete beam below those bricks. I accept Mr Smith's evidence as to this area of brickwork.

[187] Mr Smith identified gaps in the mortar around a lintel at the top of a window on the west side of the interior south wall of the bedroom in the south-west corner of the house. There was vertical cracking in the mortar joints to the brickwork above the window in this area visible on the inside of that wall. Mr Smith considered the potential movement of brickwork in relation to the lintel could have been earthquake damage. However, he discounted this because of the localised nature of the damage and the absence of damage to the exterior at that point. Cracking on the exterior of the wall nearby. All this indicated to him that the damage at that point was more likely to have occurred during removal of the plaster on the interior side of this wall.

(ii) The east wall

[188] Mr Smith made similar observations as to vertical cracks at the north and south ends of the east wall. He said the cracks are visible, as I accept they were, in Mr Wilkinson's pre-earthquake photographs. With regard to most of these areas, he noted the cracking was not reflected in the interior and was in areas where the bricks were of low strength and lime mortar was weak. The damage was also in areas which would have been vulnerable to damage during construction of the concrete beam. Mr Smith observed loose bricks at the south end of the east wall but, for a number of reasons, did not consider the damage to be earthquake related. The area of loose bricks was isolated, the bricks were immediately above an area where the timber was removed and replaced by the concrete band, the cracking was not reflected in the interior plaster and there was no mortar in some brick joints.

[189] Mr Bligh referred to what he said were loose bricks and cracks in bricks that had moved on the internal layer of bricks above the lintel of a window on the eastern wall of the house in the stairway. The cracks and evidence of movement are not apparent in the photographs. Mr Bligh described this as hidden damage because the bricks in that area had previously been covered by wallpaper. He does not, however, describe any folds or cracks having been evident on the wallpaper before he took it off.

[190] Mr Smith noted some cracking and de-bonding of mortar below a top layer of bricks on the eastern interior wall of the house at the end of the passageway. It was the area where plaster over the bricks had been removed. The brickwork was undamaged. Mr Smith said it was likely to have resulted from movement in the brickwork as a result of deterioration of the timber beam and the re-levelling of the foundation. The bricks would have been unlikely to drop so as to cause the mortar to fail once the concrete beam was in place.

[191] Mr Smith did observe cracking of the mortar joints above and below the window on the east wall exterior. He considered it was likely present before the earthquake but said it was in an area where earthquake damage could be expected. He considered the damage could have been caused by the non-earthquake matters already referred to but said he could not exclude the possibility that there was some movement of the joints during the earthquake because this was an area of the wall which would be vulnerable to earthquake stresses.

(iii) The west wall

[192] Mr Smith observed cracking with an aged appearance on the west wall. There was some minor staircase cracking at the south end of the west wall in an area where there was likely to have been previous advanced rot of the timber. That particular cracking was not reflected on the interior of the wall and was near an old vertical crack.

(iv) The north wall

[193] Mr Bligh referred to what he said was evidence of cracking around the window frames and architraves on the northern wall in the main upstairs bedroom. His friend,

Ms Clark, had also referred to cracks around the window as being evidence of earthquake damage.

[194] Mr Bligh described how the bricks had moved away from the window frame as a result of the earthquake and of his not noticing any gap between the frame and the external bricks before the earthquake. A photograph taken after the earthquake of the bricks next to the window frame showed how the window frame sat against the brick wall. At that point, there was no cracking between the bricks so all bricks remained fixed in place as part of the wall. The photographs showed that certain layers of bricks remained tight against the window but there was a gap between the window frame and other bricks both above and below those that were tight against the window. Contrary to Mr Bligh's opinion, this indicated that the whole wall had not moved away from the window frame. It was consistent with the bricks not all having been in place tight against the window before the earthquake.

[195] Faced with the way some bricks were tight against the frame as being inconsistent with his evidence that the whole wall had moved away from the timber frame, Mr Bligh said the wall must have moved in a twisting manner. Although Mr Kearney expressed an opinion that the earthquake had caused "mass wall movement and deformation", Mr Smith said he saw nothing consistent with that theory. It is not consistent with the photographic evidence.

[196] Mr Bligh says the earthquake caused cracking around the architrave of the windows in the main bedroom on the northern wall but the gap is uniform around the architrave, both on the sides and at the top. The paintwork on the edge of the architrave also suggests that, at some stage, there was some form of beading or plaster against the architrave. It is no longer there, hence the uniform gap. None of that is consistent with there having been damage to the window frame where it was sitting caused by the earthquake.

[197] When I visited the property during the trial, I observed that the window frames upstairs on the northern wall of the house appeared and felt as if they were solidly in place. When I referred to my observation, Mr Bligh accepted that the window frames

in the main bedroom upstairs were held firmly in position. He had never observed or experienced anything to suggest they were not rock-solid within the wall.

[198] I consider Mr Bligh's explanation, as to how, after the earthquake, there could still have been bricks abutting the window frames, was another example of Mr Bligh being determined to assert there was earthquake damage, even when it was inconsistent with the photographic evidence. It was also another example of his readiness to come up with an implausible explanation in support of his case to counter the reality of the situation.

(v) Loose bricks on top of the walls

[199] Mr Smith inspected the roof space and saw loose bricks on the top of the brick wall. They are between rafters. Mr Smith said they appear to be loose bricks and just the result of poor workmanship. Mr Bligh said the bricks were not like that when the roof was replaced.

[200] Confronted with what the photographs showed, Mr Bligh said the gap between two part bricks had to have been caused by the earthquake. Again, his observation was based not on what he recalled of a close examination of these particular bricks before the earthquake but the fact that the house had been subject to a very violent earthquake and his supposition that the earthquake must have bounced the bricks around so much that mortar had been flung from them. There was no other evidence of that. Mr Bligh also said that the brickwork should have been well laid because the title to the house showed that the owner who had done the work was a bricklayer.

[201] Mr Smith said removal of mortar around bricks is not an earthquake phenomenon.

[202] Mr Smith said you would not get loosening of the bricks in the top from an earthquake, in ways that were apparent in the photographs, without some form of damage below it. Here, there was generally none.

[203] In his brief of evidence, Mr Kearney said it was difficult to determine with absolute certainty what damage to the property was a result of the earthquake sequence

and what damage pre-dated the earthquake sequence. The damage which he considered had occurred as a result of the earthquake sequences was cracking in the walls above and below windows, gaps in door joinery of varying widths and dislodgement/displacement of bricks which he said could not have arisen as a result of long-term static settlement alone.

[204] Mr Kearney was of the opinion that the windows no longer fitted their apertures which meant the earthquake had caused not only individual brick damage but it also "mass wall movement and deformation".

[205] Mr Smith disagreed with that conclusion and said he had seen no indication of any significant movement of the brickwork as a result of the earthquakes.

[206] There were a number of photographs taken looking along the brick walls beyond the window openings. The photographs were probably taken in an attempt to show a gap between the brick wall and the window frames. What is apparent from those photographs is that there is no apparent bulging, twisting or misalignment of the brick walls. They remain perpendicular and consistent with the vertical parts of the window frame. The photographic evidence of the walls does not indicate there has been "mass wall movement and deformation".

[207] I thus accept that the observed damage was not consistent with there having been mass wall movement and deformation.

[208] Mr Kearney's summary of damage caused by the Canterbury earthquake sequence, based in part on what he had been advised by Mr Bligh, included loosening of window frames with relation to the surrounding brickwork, resulting in the homeowner sealing the frames with tape to block the draught. It is significant that Mr Kearney provided no detail or photographic evidence to show there had been a loosening of the window frames. Mr Smith said that he found no evidence of such damage during his inspection.

[209] Mr Kearney said there was evidence of separation of outer bricks from the inner bricks at the edges of the brickwork around window openings on the external

first floor walls. Mr Smith says he examined accessible cracking above the windows. In nearly all cases, the cracking was aged with weathered edges to the plaster and weathered surfaces within the cracks.

[210] Mr Kearney discounted Mr Smith's explanation as to what was likely to have caused the damage to brickwork. With regard to the potential for damage through the removal of plaster, he based his opinion, in part, on the fact Mr Bligh had told him the plaster had been removed using hand tools and his view that, if this had caused damage, then the damage would have been more extensive. The damage to the walls is not extensive but Mr Smith explained why any damage of this sort could have been more localised.

[211] Mr Kearney discounted, to some extent, the possibility of there being damage to the brickwork as a result of deterioration in the wooden beam and the process of replacing that beam but, in both instances, acknowledged that some damage could have resulted from those methods.

[212] For reasons I have already referred to in detail, I am satisfied the potential for damage to the brickwork, as a result of deterioration in the wooden beam and the process of replacing it, was significantly greater than Mr Kearney had initially been willing to acknowledge.

[213] Mr Smith pointed out that Mr Kearney had not provided any explanation as to why the outer skin of brickwork appeared, in places, to have dropped vertically without a related dropping of the inner skin. Mr Smith's explanation was that the vertical drop in the outer skin was due to the rot in the timber beam.

[214] Mr Smith's conclusion was that almost all the damage to the brickwork was pre-existing. He acknowledged the possibility of some widening of cracks, however, said the widening was unlikely to require an alteration to the repair work and would not have affected the structural integrity of the house.

[215] Mr Smith properly acknowledged that he could not be certain as to what had caused all the damage to the brickwork he observed in December 2010. Neither EQC

nor IAG have to prove how the damage observed after the earthquake had been caused. It is nevertheless relevant, in deciding whether the damage observed after the earthquake was pre-existing, that there is a rational explanation as to how it might have been caused independently of the earthquake. I am satisfied, through all the evidence including the opinion evidence of Mr Smith, that there is such a rational explanation.

[216] Mr Smith detailed what he observed of the damage to the first floor brick walls in December 2010 after, by far, the most serious earthquake affecting Mr Bligh's house. He explained why he did not consider that damage to have been caused by the earthquake. I accept his evidence in this regard.

[217] I accept the damage Mr Smith observed, and the state of the brick walls after the earthquake, was not consistent with there having been mass wall movement and deformation. The evidence adduced does not prove there was individual brick damage caused by the Darfield or any other earthquake.

[218] Mr Blight saw the first statement of claim which was filed for him in the proceedings by earlier lawyers. Mr Bligh agrees that, in that claim, he apportioned 100 per cent of the damage to the house to the Darfield earthquake. When referred to that, he said he did not know if there was any further damage later on.

[219] Mr Bligh has thus been unable to prove, on the balance of probabilities, that the Darfield earthquake or any other earthquake caused structural damage to the first floor walls of his home in the way he particularised in his statement of claim.

Cracking of external plaster surface
Cracking to external plaster at windows on the southern face of the first floor

[220] In opening, Mr Lynn acknowledged the defendants' evidence would be that any cracking or crazing evident to this part of the building was shrinkage cracking in the plaster, but Mr Kearney's evidence would be that, while some of the cracking and crazing might be due to plaster shrinkage, movement of the masonry bricks underneath the plaster might also lead to the cracking of this plaster. He referred to Mr Bligh's view that shrinkage was not responsible for all of the cracks seen.

[221] Mr Smith observed crazed cracking on the exterior plaster surface of first floor walls where it remained on the south and west walls. He considered the cracking was consistent with drying shrinkage expected of surface plaster soon after the plaster was applied. He noted it was not reflected through the wall and was generally in a pattern or areas that he would not have expected to be highly stressed in an earthquake. He said his inspection of the cracks using magnifying equipment established the cracks were aged and pre-dated the Darfield earthquake. There was lichen and mould in plaster crazing which clearly pre-existed the earthquake. Photographs taken at the time of his inspection recorded erosion around the age of the cracks and mould growth on exposed surfaces and in the cracks.

[222] Mr Smith accepted that, if an old crack was widened as a result of earthquake damage, it could have dirt and grime in it, typical of an old crack. That does not however help to prove that cracks which Mr Smith considered were old had in fact widened through earthquake damage.

[223] There was cracking in the plaster above a window on the first floor south wall. The most obvious crack ran from the centre of the arch above the window opening up to the wooden beam under the eave. That crack had a white substance in it in 2007. Mr Smith said it appeared to be some sort of filler.

[224] There was more paint at the top than at the bottom of this crack but it appears from photographs that there was still some paint lower down in the crack. Mr Smith explained that the difference in what remained in the crack could probably be explained by the way the plaster was more exposed to the weather lower down and nearer to the window than the area towards the top. There was evidence that an attempt had been made to seal another crack on the south wall with a bitumen sealant.

[225] Finer cracks had not been filled but Mr Smith said this did not indicate they were earthquake damage. When inspected with magnification, he found they had weathered edges. There was one crack going upwards, although not exactly vertical, from a corner of a window opening on the south wall. It was wider at the top. Mr Smith considered this was consistent with the settlement of the brickwork to the left of that window. The building had a very sound ground floor structure. The concrete

ground floor walls were substantial. There was a very good tie around the building with the concrete beam. The potential for lateral spread and widening of the crack caused by the earthquake was thus limited.

[226] On his first visit, Mr Clark observed spider cracking in the plaster-work on the south side but it had lichen growing in it and there was nothing that indicated recent movement.

[227] I have also discussed the cracking of the plaster to the extent it remained on the southern and western walls of the home at the time of the earthquake when dealing with damage to the first floor walls. Mr Kearney's opinion, that cracking and crazing of the plaster might result from movement of the masonry bricks underneath, does not help to prove that this was the actual cause. His opinion does not help to prove that, if there was movement of the bricks underneath which caused the damage, this occurred in the earthquake rather than a shifting of the bricks caused by the deterioration of the wooden beam or the reconstruction process with the establishment of the concrete beam.

Minor horizontal cracking to the ground floor
Exacerbation of the cracking and minor spalling below the window on the south western inner face of the external wall of the ground floor
Exacerbation of the cracking and minor spalling above the window in the south western corner.

[228] The alleged damage as to these particulars mainly related to the ground floor walls. In his opening submissions, Mr Lynn acknowledged that the structural engineers appeared to be in agreement that the ground floor masonry walls were cracked to some extent prior to the earthquakes and any further damage to the walls as a result of the earthquakes is of minor structural significance.

[229] Mr Bligh said all the cracks in the concrete of the downstairs walls were historic. Some had opened up "a wee bit". He also said he did not require anyone to fix them. He was happy to fix them himself.

[230] Mr Kearney agreed cracking in the ground floor masonry walls was historical and earthquake damage to those walls was "minor and inconsequential".

[231] The only area of cracking or minor spalling below a window on the inner face of the wall, which was at issue in the proceedings, was in relation to the wall in the kitchen area on the eastern side of the house. In that area, there was a crack and a roughly depressed area in the concrete below the window lintel where, at some stage, newspaper had been stuffed. Photographs taken by Mr Wilkinson, both before and after the Darfield earthquake, show there was no observable change to the cracks in that area. These photographs also show the cracking and minor spalling above the window in that area.[25]

[232] Mr Bligh explained that, when the window had been installed, a hole had been cut in the concrete, concrete had been poured around it and then hardboard placed over the new concrete. Any existing gap between the new concrete and the window frame and previous cracks in the wall would thus have been covered by the hardboard. Mr Bligh explained that he had removed the hardboard in the 1980s. It is apparent from the internal cracks that they related very much to the join between previous concrete and the concrete that had been poured around the window frame.

[233] Mr Bligh was, at best, tentative in asserting there had been a widening in these cracks as a result of the earthquake but suggested the photographs indicated that a crack had "opened up a bit". I do not consider this was clear from the photographs he referred to.

[234] Mr Bligh referred to a pre-earthquake photograph showing another section of this kitchen window and a post-earthquake photograph. In both photographs, there appears to have been a significant broken depression in concrete below the window lintel to the right of an area of yellow paintwork. In the post-earthquake photograph, there is newspaper pushed into that hole. Mr Bligh said the paper was stuffed there because it was draughty. He said it became draughty only after the earthquake. Mr Bligh claimed that the crack in concrete below the window had widened as a result of the earthquake.

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[25] The term "spalling" was used in submissions and in evidence. "Spalling" in concrete is a result of water entering brick, concrete or natural stone and forcing the surface to peel, pop out or flake off. In concrete, spalling happens because there is moisture in the concrete.

[235] The crack was clear in photographs taken by Mr Wilkinson both before and after the earthquake. It was below the window lintel to the right of the area of yellow paintwork. In the 2007 photographs there appears to be daylight showing through a slight gap between the lintel and concrete underneath. The newspaper under the window in the kitchen area is apparent in a photograph taken by Mr Wilkinson on 28 September 2010.

[236] The photographs indicate that the state of the concrete below the sill, alongside where the newspaper had been stuffed, below it and between the concrete and the lintel, was the same both before and after the earthquake. Mr Bligh's engineer, Mr Kearney, agreed there was no apparent change in the photographs of this crack taken before and after the earthquake. Mr Bligh was not living at his home between the time of the Darfield earthquake and the time Mr Wilkinson took his photograph showing the newspaper stuffed below the lintel on 28 September 2010.

[237] In response to a question from me, Mr Bligh said the newspaper could have been there before the earthquake. I do not accept Mr Bligh's evidence that the crack had widened or became draughty because of the earthquake.

[238] In evidence in chief, Mr Bligh said there was cracking to an area above the window although it was not clear in photographs he referred to. He said he could not recall if the cracks were there before the earthquake.

[239] Mr Bligh has not proved there was earthquake damage as to these particulars.

Damage to the reinforced concrete columns and lintel above the new front door

[240] Mr Bligh said there was damage caused by the earthquake to the lintel above the front door, with cracking on the internal faces of reinforced concrete columns beside the door.

[241] There was a short horizontal crack in concrete above the elaborately framed doorway that had been installed on the northern side of the house. Mr Bligh accepts this crack was there before the earthquake. Mr Smith and Mr Clark identified that

crack would have occurred from the way the concrete was laid during the reconstruction in that area.

[242] The crack was evident in a photograph taken by Mr Wilkinson before the earthquake so did not result from earthquake damage.

[243] I am satisfied any cracks in the column or lintel associated with the new front door were not caused by an earthquake.

Horizontal cracking through sections of the new bond beam
Minor cracking between bond beam and existing walls

[244] Mr Kearney referred to minor cracking between the new concrete bond beam and existing walls as being earthquake damage. He accepted this damage does not affect the structural integrity of the building and could be repaired simply through putting epoxy in the crack. Mr Bligh did not assert, with any clarity, that these cracks were new after the Darfield earthquake.

[245] Mr Clark said, as a builder, he could say from experience what a cold joint would look like. He was confident the horizontal crack in the bond beam at one point was the result of a cold joint.

[246] I accept the evidence of Mr Smith and Mr Clark that this cracking was in the nature of cold joints that would result from the concrete laying process. I also accept Mr Smith's evidence that, on his observations of 23 December 2010, these cracks were not recent and would not have resulted from the earthquake.

Cracking to the foundation slab
Possible formation of voids under the foundation slab

[247] In his evidence as briefed, Mr Bligh described how he had installed an engineer-designed reinforced concrete floor around the time of the beam alterations. He said he never covered the floor with fixed floor coverings so was always able to see the condition of the slab. He says he never saw any cracks in it before the earthquakes.

[248] Mr Bligh described, in some detail, cracking to the concrete slab which he said had occurred as a result of the earthquake. He was adamant that none of the cracking was present before the earthquake. He went on to say that he had noticed a drumming of the concrete slab after the earthquake by the hollow noise produced when the slab was tapped with a rubber hammer or walked across with heavy steps. Mr Bligh said he knew there were no cracks in the slab before the earthquake because he had been there when it was poured.

[249] As mentioned earlier, Ms Clark and Mr de Boer said they had first noticed cracks to the slab after the earthquake.

[250] Both Mr Kearney and Mr Smith agreed the cracking radiating out from where an old fireplace had been was shrinkage cracking that would have been there before the earthquake.

[251] The concrete slab floor was designed by an engineer. As Mr Bligh explained, there is not a uniform base for the concrete slab. Around the perimeter of the floor the concrete is thicker and deeper, with reinforced concrete beams. There are similar reinforced concrete beams at different points across the floor. Away from the beams, there is polystyrene under the floor.

[252] While Mr Kearney agreed the cracks propagating out from the inside corners of the slab edge where it had been poured were consistent with concrete shrinkage, he said they were different in appearance from two longitudinal cracks that run in a west-east direction in the kitchen area. He said, on that basis, they should be considered as cracks caused by the earthquake but he did not refer to any features of the cracks to explain why they would have been caused by the earthquake, rather than settlement of the slab. Mr Kearney had made no mention of the cracks to the floor slab as being earthquake damage in his initial evidence prepared on 31 October 2016.

[253] Each crack runs in a more or less straight line from the eastern wall or foundation to the cold joint crack that runs north-south where there is a construction joint between the two slabs.

[254] Little reliance can be placed on Mr Bligh's evidence that the two longitudinal cracks had not appeared before the earthquake. He said the same of the shrinkage cracks which spread out from the base of where the log burner had been, which the engineers agreed would have pre-existed the earthquake. The longitudinal cracking would, to a significant extent, have been covered by vinyl which was over that area of the floor before the earthquake and when Mr Wilkinson photographed the area in 2007.

[255] Mr Smith speculated that the east cracks, because of their linearity, may have resulted from the presence of a crack inducer. He explained that a crack inducer is a metal bar typically placed at the bottom of a concrete slab to induce a shrinkage crack. He said, where cracking of a concrete slab is linear, it is usually due to the presence of a construction joint, sawn joint or the use of a crack inducer. He considered all the cracks to be a predictable outcome of casting a lowly reinforced concrete slab in pours exceeding six metres and around an existing concrete foundation. Mr Smith considered that the floor was poured in such large areas that there was some likelihood there would be a crack about halfway along that slab and there was an increased likelihood of this with thicker concrete around the edges of the floor, as was the case here. He also noted the cracks he observed in the concrete slab did not affect the slab's utility or functionality.

[256] Mr Clark considered the cracks in the kitchen area looked like shrinkage cracks, in part because they came off the old chimney base in a diagonal area and then discontinued the further away they got from it. As a builder, he was familiar with shrinkage cracks. He also said he had tested the floor for a "drumming" sound, as Mr Bligh said he had done, in a way that might have indicated there was a void beneath the floor. He detected no such sound.

[257] There appears to be agreement that the cracks do not structurally affect the slab structurally. Mr Bligh's plan was to have floor coverings, possibly carpet or tiles, over the kitchen/dining floor area so that cracks of the sort that appeared here would not have been a problem from an aesthetic point of view. Although he has not been able to achieve this, I do not consider the cracks, as described, affect the cosmetic or aesthetic value of the floor slab in all the circumstances that currently exist. Mr Bligh

has not been able to prove, on the balance of probabilities, that the cracks in the floor slab were caused by the Darfield earthquake or any other earthquake.

[258] Mr Bligh said that he believed there are voids beneath the dwelling and garage floor slabs as a result of earthquake shaking.

[259] The only geotechnical engineer to give evidence was Mr Ashby. He considered that the mechanisms by which a void could form under a concrete floor slab as a result of earthquake shaking would not have occurred at this site as a result of the 4 September 2010 earthquake. He considered it "highly unlikely, from a geotechnical perspective, that the alleged sub-floor voids could have been caused by an earthquake".

[260] Mr Ashby examined the Selwyn District Council's property file which included specifications for the foundation works for the dwelling. The in-fill concrete slab for the dwelling was to be founded on "clear ground overlain with hard fill which shall be rounded river run shingle well compacted in 100 mm (maximum) layers, and levelled off with sand binding", in compliance with New Zealand standards. Assuming these works were completed according to specification, he considered that settlement, due to collapse of the granular soil structure underlying the dwelling slab, was "very unlikely". He considered another mechanism that could cause settlement of loose dry sand and potentially loose gravel. He expected, given the sub-surface soil characteristics on the site and the materials used in site preparation, the amount of vertical settlement due to dry shake-down underneath the dwelling and garage slabs would have been negligible.

[261] Mr Michael Finnemore is an experienced geophysicist who has been extensively involved in the provision of geophysical investigation services. He has conducted an extensive number of ground penetrating radar (GPR) investigations, including of many residential buildings in Christchurch. GPR is a good method for imaging the lateral extent of the high amplitude reflections caused by air-filled voids. In 2015, he was engaged by IAG to carry out a GPR survey of the concrete floor slab of the house and the garage. His reports and evidence were admitted by consent.

[262] Mr Finnemore's GPR examination identified zones of thickening of the slab at locations, forming a grid pattern throughout the slab and around the walls, most likely to reinforce the slab to create extra support for internal walls. Reinforcing was seen throughout the slab with additional reinforcing within the thicker areas of the slab. Mr Finnemore considered it likely that there was polystyrene insulation inserted below the slab during construction. Mr Bligh confirmed that such insulation had been put there.

[263] Accordingly, I cannot find that the cracks to the floor of the house were caused by the earthquake. Nor has Mr Bligh proved that the earthquake created voids under the concrete floor of the house.

Separation of sheet joins and damage to finish around doors and windows

[264] I have already referred to Mr Bligh and Ms Clark's evidence as to claimed cracking around the windows in the main bedroom and why I do not consider that the uniform gap between wall linings and architraves at that point appear to be the result of earthquake damage. I have also referred to the evidence which has led to me being satisfied that an earthquake had probably not moved the lintel above a window on the eastern wall of the house. The evidence has not proved that any of the windows moved in relation to the walls as a result of the earthquake. There would, however, have been a significant rattling of the sash windows within their frames and probably a banging of the sash weights within the window frames with the earthquake. The noise would have been frightening but it does not mean the window frames would have moved relative to the walls as a result of the earthquake.

[265] The only damage which Mr Bligh alleged in relation to a door was the minor cracking in mitre joints associated with the more recently installed French door. For the reasons referred to by Mr Clark, I am not satisfied those cracks were earthquake damage.

Cracking in internal plaster

[266] There was little specific evidence from or for Mr Bligh as to such damage except to the extent Mr Bligh claimed there was damage to plaster around some of the

windows. I deal with that below. In opening, Mr Lynn said any dispute over what might have caused internal cracks in the plaster could turn out to be academic. This was on the basis Mr Kearney's solution for the claimed earthquake damage to brickwork would require shotcrete to be applied on both external and internal walls.

[267] Mr Bligh has not proved there was earthquake damage to internal plaster as claimed.

Cracking in the corners of internal walls on the first floor
Separation and damage to the finish of the first floor tongue and groove walls
Damage to the plaster in the tongue and groove section of the first floor ceiling
Separation of skirting boards and hallway from walls on the first floor
Tongue and groove boards in first floor hallway have separated leaving gaps and creating draughts
Cosmetic damage to the house including patches of paint coming adrift in master bedroom.

[268] Since at least 1991, the internal ground floor walls, which formerly provided support for the first floor and the first floor walls, have been removed. The concrete ground floor was laid in two parts. Before that happened, the ground floor internal walls had to be removed. The joists supporting the first floor had to be supported with props cantilevered from the perimeter of the ground floor. During that process, there must have been considerable potential for movement in the internal and external first floor walls. The engineers agree that the propping that has remained in place since then is inadequate.

[269] On my inspection of the property, I observed that the propping under the floors appeared to be of a temporary nature. Near the middle of the area on the northern side, there was a prop under one end of a supporting beam but not under the other. To the naked eye, it appeared that the floor joists had bowed, particularly in the western one-third of the area. There was a significant steel beam helping to support the joists but it only ran approximately two-thirds of the area, and it was supported by props. One of those props near the kitchen bench appeared to have had wedges driven under it to get it to the right height. Some of the props were standing at an angle.

[270] Floor levels were measured by engineers. They showed the first floor had dropped where joists were inadequately supported.

[271] On an internal wall in a bedroom in the south-east corner of the house, the wall was lined with boards. There had probably once been scrim and wallpaper over those boards. Those linings are gone. Portions of the boards have been wrenched away from the studs but the work had not been completed. Broken boards remained in place, consistent with considerable force having to be applied to try and wrench them away from the studs. There could have been significant disturbance to the timber linings on the hallway side of that wall as a result of that process.

[272] The skirting boards had been removed from a number of the first floor internal walls. There were no skirting boards downstairs above the new concrete floor. After the earthquake, Mr Bligh had chipped away plaster from the internal side of the brick wall in the stairway area adjacent to the east wall and providing access to the first floor. There was potential for the bricks in that area to have suffered some damage through that process.

[273] In an upstairs bedroom on the southern side of the house, large areas of wallpaper appear to have been torn off. Again, an internal dividing wall between two rooms had been removed.

[274] Mr Bligh said that, before the earthquakes, the internal first floor walls were plastered. After the earthquake(s), he noticed new cracks in the bedrooms, including on the north wall around and above the window. In giving evidence orally, he talked about "huge damage" around the seven windows, said the walls had moved around the windows and new gaps had opened up, making the building uninhabitable because it was too cold.

[275] For reasons already discussed, I do not accept his evidence that the earthquake caused walls to move around windows and new gaps to open up.

[276] With the loss of support from internal walls below, internal walls on the first floor could drop in a way that could cause tearing of the wallpaper around the join between the interior upstairs wall and the exterior wall. There was tearing of this sort of the wallpaper in the north-west corner of the upstairs north-east bedroom. Mr Bligh identified this tearing as earthquake damage. Mr Smith was confident it would have

been caused by the sloping of the floor. The tearing is evident in a photograph of this corner of that bedroom taken pre-earthquake by Mr Wilkinson.

[277] Mr Smith was referred to an area of creasing in wallpaper above a doorway in the south-east corner of the north-east bedroom. He pointed out the creasing was at a point where it would have been affected by a drop in the wall where the crease occurred, a drop that could be explained through the lack of proper propping. Paper had been stuffed between the architrave and the brick wall in the south-east bedroom. It had been placed there after plaster had been removed from the wall.

[278] Fine patches of plaster skimming on a wall of the main bedroom have come off the wall above the bed headboard. The loss of this skimming is not apparent in a photograph taken by Mr Wilkinson in 2007 which shows the wall where this damage occurred.

[279] Mr Clark explained that there should have been tape along the joins between the tongue and groove boards. The plaster would have been prone to fail because it had been placed on smooth, bare timber which did not ensure good adhesion. It is also apparent that the plaster has peeled away next to a join. There was no diagonal cracking in the plaster that Mr Clark would have expected to see if the failure in the plaster had been caused by an earthquake. Mr Clark considered this damage was more typical of delamination.

[280] Mr Smith noted that the area where the thin plaster coating had failed was in an area where there was a loss of support for the first floor.

[281] In contrast to the way Ms Clark described plaster falling on her from the ceiling during the earthquake, neither Ms Clark nor Mr Bligh gave any evidence as to finding a delaminated section of the wall plaster at any time after the earthquake.

[282] There is a defect in the wall lining but the evidence does not establish that defect was caused by an earthquake.

[283] This delamination was in the main bedroom. It is apparent the main bedroom was originally two rooms divided by an internal wall. The ceiling was tongue and groove in both parts of the room. In the section above the bed, an attempt had been made to fill cracks in the tongue and groove ceiling. Mr Bligh said that a partner with whom he had lived in the house had not liked the cracks and had filled them with plaster. The plaster was apparent in photographs taken both before and after the earthquake. It was not particularly neat. In the other part of the room, no attempt had been made to fill the cracks or gaps in the tongue and groove ceiling so there was no uniform ceiling surface in the room before the earthquake. An area above the bed was painted white but to a better finish than the other part of the room. In the other part, the ceiling was white but coming through the white paint was a pink-reddish colour, as if it had required another coat of white paint to properly cover what had been there previously. There were large patches of blue paint on the ceiling as if someone had applied a patch of new colour to see what it would look like without ever making a decision or finishing the work. There had been no attempt to cover up the place on the external wall where there had originally been an internal dividing wall.

[284] Mr Clark noted the paintwork in the master bedroom had probably never been finished off to a high standard.

[285] Mr Bligh accepted there was a gib wall on the eastern end of the main bedroom that was still to be painted. Mr Clark explained that, when gib board is over timber framing and placed under stress, it will quite often fail diagonally. Even if the cracks do not go right through the paper, there will be bulges that indicate there has been a failure. Damage like that will usually be in the corners and tend to go off at 45 degrees from window frames and the like. There was no damage to the gib board consistent with it having moved during the earthquake.

[286] I accept from Ms Clark's evidence that, in the Darfield earthquake, dust or plaster from the tongue and groove ceiling fell onto the bed. However, in photographs taken after the earthquake, any change to the overall appearance of the ceiling in that area appears to be minimal. That part of the ceiling did not match with the other part so replacing or repainting that part of the ceiling where there might have been some damage to the plaster would not fix that damage or improve the cosmetic or aesthetic

look of the whole ceiling. I thus consider that any loss of plaster from the ceiling was so minor that it has to be treated as de minimis and not material in the sense of requiring replacement or repair in terms of the EQC Act or the IAG policy.

[287] There was a marked crack on one mitred join of the architrave to the door to the main upstairs bedroom. The doorframe in the vicinity of that mitred join was no longer square. I accept this could have been because of a slope in the floor through removal of support downstairs. There was filler in the gap.

[288] Mr Smith was referred to a vertical crack in the corner of the main bedroom where two painted walls intersected. He explained that, at that point, the bricks to the wall would be interlocked so, if there was any structural damage, he would have expected the cracking on the interior to be stepped rather than a vertical crack. The vertical crack in the corner, in his view, could be explained by the age of the house, the removal or change in support from the ground floor, and the changes that would have occurred earlier with the wooden beam and its replacement with a concrete beam. In his opinion, there was nothing about that damage which highlighted it as earthquake damage.

[289] On the exterior eastern wall of a bedroom in the north-east corner of the house there is a gap between the skirting board and the wallpapered wall. There are two layers of old wallpaper on that wall, dropping down towards the skirting board. The bottom of the original wallpaper stops at the point where the top of the skirting board would have been if it was against the wall. The bottom of the newer wallpaper ends at a point above the top of the skirting board, as one would expect if there had been a strip of wood at the top of the skirting board to conceal a gap between the skirting board and the wall.

[290] Mr Bligh says it was the earthquake that caused the skirting board to come away from the wall.

[291] When Mr Clark, from EQC, was inspecting the property on 29 August 2016, he noticed a short wooden beading, a quadrant, sitting on top of the skirting board. It was of the same configuration as would have fitted to obscure the gap between the

skirting board and the wall, consistent with the bottom of the more recent wallpaper, as shown in a photograph which he took.

[292] Mr Bligh said that the suggestion there would have been a quadrant shaped beading along that skirting board, covering up the gap, before the earthquake was "rubbish". He asserted there had definitely been no quadrant along that length of skirting board.

[293] I am satisfied, having looked carefully at the photographic evidence, that there must have been some sort of beading in that area before the earthquake and that the position of the wallpaper was consistent with the gap having been there before the earthquake.

[294] Mr Bligh has been unable to prove there has been cosmetic damage to the linings in the bedroom as a result of the earthquake.

[295] There was nothing about the floorboards to indicate they would have been tight before the earthquake. In the south-west bedroom, part of a floorboard had been replaced. There was borer in some of the floorboards. The boards in the hallway were not tongue and groove but straight-sided. There were regular gaps between all the boards. This would have been consistent with the boards shrinking with age and drying out, a process that would have been exacerbated by the installation of the log burner heating and the removal of the ground floor ceiling. Mr Bligh described how the heat could come up through the gaps and heat his mattress.

[296] Mr Clark pointed out that the concrete beam or band had constrained the first floor so the gaps in the flooring boards were more likely to have been caused by the boards drying and narrowing through heat rather than lateral movement outwards.

[297] There had originally been lino and carpet on top of this flooring but Mr Bligh had removed it, intending to put plywood over the floor. When Mr Bligh obtained a permit for the reconstruction work associated with the installation of the concrete beam, the plans approved by the Council included the placement of 20 mm ply on the

whole of the first floor area, presumably to improve both the strength and appearance of the first floor.

Loose fixings in the roof
Leaks to the roof above the master bedroom and above the flue of the log fire
Split roof rafter

[298] There is one split rafter in the roof. It has split from the apex of what is described as a birdsmouth aperture at the end of the rafter where, at an angle, it meets a beam.

[299] Mr Clark described it as being typical of a timber defect called a "shake", which results from a growth defect when timber dries out and splits. Mr Clark considered the timber appeared to be more recent than the older timbers. The roof was replaced in the 1980s. Mr Bligh says this was part of the roof timbers which had been there before that time and it was not newer wood.

[300] If it was older timber which had been there originally, for it to have been damaged in the earthquake, it would have to be a case of just one strut in the roof space having been damaged by the earthquake. If it was newer timber, then it could have been more vulnerable to splitting through drying out. Within the roof cavity and beneath a steel roof, it would have been within an environment which was often hot and dry. There is no other damage to any other part of the roof framing or supports.

[301] With Mr Clark satisfying me that the crack has the appearance of a "shake" resulting from a defect in the timber and its drying out, Mr Bligh has not proved on the balance of probabilities that this damage resulted from the earthquake.

[302] Mr Bligh claims the earthquake damage includes loose fixings on the roof of the house where nails popped out.

[303] No damage to the roof and no leak to the ceiling had been identified in Canterbury Earthquake Services' January 2013 report or by Mr Csiba in the engineers' joint report to the Court of October 2015.

[304] Mr Clark inspected the roof from the ground using high-calibre binoculars in August 2016 and November 2017. He could not see any nails lifted on the high roof to the main dwelling. On the lower roof over the bathroom area of the annex, he could see some fixings on the edge of the sheet that were not sitting down correctly to provide an efficient seal. In his opinion, this lifting was not earthquake related but likely from wind pressure imposed on this leading edge of the low pitched roof.

[305] Mr Bligh asserted that loose fixings were not an issue before the earthquake because "they were brand new nails and [a] brand new roof". The roof was however, at the time of the earthquake, about 20 years old, having been installed around 1988.

[306] Apart from small amounts of water staining on some roof timbers above the master bedroom, Mr Clark could see no evidence of other roof leaks or stains in the roof cavity suggesting fixings had lifted. Mr Clark did not believe there was earthquake damage to the roof. If there was, he would have expected to see damage to flashing or distortion to the trim deck metal sheeting.

[307] The allegations as to this leak emerged a number of years after the Darfield and related earthquakes. The evidence presented for Mr Bligh does not adequately relate the emergence of the leak causing the staining with the occurrence of the earthquakes, so as to indicate it was likely an earthquake or earthquakes caused the leak in this area.

[308] That is particularly so when the roof was at least 20 years old at the time of the earthquake and the emergence of leaks is commonly associated with normal wear and tear of a roof of this sort.

[309] Mr Bligh says there is a leak around the flue of the log burner which he says was not there before the earthquakes. He claims the leak is earthquake damage.

[310] Mr Clark inspected the roof space of the house during both his August 2016 and November 2017 visits. Mr Bligh mentioned problems with this leak to Mr Clark during the August visit. Mr Bligh showed him a small stain above the bed. Mr Clark spent time lying on his back in the roof space with a torch but was unable to identify

where a leak could have come from. He considered the leak was likely to have come from the flue around the new chimney because of particular problems that could occur with the flashing that was then used. I accept he carefully examined the area around the flue. He could not identify any damage with the flue that would have resulted from the earthquake and that would explain any leaking.

[311] Mr Clark noted the flashing around the flue was a style no longer used. It is a style which tends to trap water on the top of the flattened ridge in a way that is more conducive to water ingress beneath the flashing.

[312] He also noted that, with the type of flashing used, there is the potential for a leak to develop if the top edge of the roofing is not upturned to create a lip under the flashing. This lip limits water being driven by wind pressure from leaking through the flashing.

[313] There is a deficiency in Mr Bligh's evidence in that he does not specify when evidence of a leak from the flue emerged in a way that sufficiently links it to the earthquakes in a manner sufficient to prove that the earthquakes caused this leak.

[314] Having considered all this evidence, I find the evidence adduced by Mr Bligh insufficient to prove that the damage he has alleged was caused by the Darfield earthquake or any other earthquake.

Floor in extension hallway bouncy, indicating failure of sub floor elements
Minor damage at sheet joints and door trims to extension
Cosmetic damage to the extension including to the sleep out above cellar
Nails popped in the gib walls
Cracks in paint and plaster seal at joints of panels
Cracking to asbestos panels in the extension

[315] These particulars all relate to alleged damage in the annexe.

[316] Mr Bligh's pleaded particulars of the damage to the annexe include "minor damage at sheet joints and door trims to extension" and "cosmetic damage to the extension including cracks in paint and to plaster seal at joints of panels". These allegations again surfaced only in Mr Bligh's third brief of evidence for the

rescheduled hearing. They were not brought to the attention of Mr Wilkinson on his visit to the property in January 2011. No damage to the annexe was pleaded in Mr Bligh's original statement of claim dated 23 July 2013. Mr Smith was not asked to inspect the area when he went there on 29 January 2014 with Mr Bligh and his two representatives associated with Canterbury Earthquake Services, Mr Johnson and Mr Betts.

[317] In the joint report to the Court of October 2015, both Mr Csiba and Mr Smith said there was no damage in the lean-to area and no earthquake damage remedial work was required.

[318] Mr Clark's evidence was that the cracks he observed did not appear to be earthquake related. Where there was cracking on internal walls, there was no corresponding damage to external cladding in the way that would be expected with earthquake damage. He considered the defects were more likely to be the result of poor construction practice and, in the area of the bathroom and laundry, moisture. The pathway on the eastern side of the annexe falls back towards the laundry and bathroom area so that water is more likely to flow under that area, exacerbating potential moisture-related problems.

[319] Mr Bligh referred to cosmetic cracking to asbestos panels on the extension but said there were minor historic cracks before the earthquakes. In Mr Clark's opinion, to the extent there were fracture lines on the asbestos, he thought it likely they would have resulted from impact damage. The annexe structure is timber-framed and clad with asbestos panels. If there had been racking as a result of the earthquake, causing fractures, he would have expected more damage to these panels. On viewing this area, it was also apparent, to the extent there was cracking on the exterior of the panels, those cracks did not extend through to the internal side of the panels.

[320] In his pleadings and in evidence, Mr Bligh referred to some cosmetic damage to the sleep-out above the cellar, including evidence of nails popping in gib walls, some new cracking in paint, and some paint cracking in the cornice and scotia on the internal side of a doorway. Mr Clark accepted that some of this damage may have been caused by the earthquake but considered this unlikely given the lack of damage

elsewhere. He explained how nails popping in gib board can occur for non-earthquake related reasons, such as timber shrinkage or as a result of defective construction.

[321] Mr Bligh says a small area of floor near a doorway leading from the house to the annexe must have been damaged in the earthquake because it is bouncy in a way which he said it had not been before the earthquake.

[322] Mr Clark also walked back and forth over the floor in that area. He said he could feel what he described as a "lively floor" which meant there was some movement, but there was nothing that creaked or cracked that would have been consistent with a damaged timber structure underneath. He managed to feel part of the area under the floor and it felt very damp.

[323] Mr Clark believed this is likely to be the result of there being under-spanned timbers or under-sized timbers for the span in that area. Mr Bligh did not accept this but, in explaining why, said that an area of flooring adjacent to this had been replaced with new joists because of previous water damage in that area.

[324] Mr Clark inspected the sub-floor area with an endoscope. His evidence as to the joists being inadequate for the support that was needed is thus supported by his visual examination, an examination which Mr Bligh was not able to make because he did not have an endoscope. There is also a potential problem with water getting into that area through rain falling on a concrete path on the east side of the annexe where it slopes towards the wall of the house.

[325] Given the time at which the allegations as to this damage emerged, a lack of credible evidence as to precisely when those defects became apparent in relation to the earthquakes, and the absence and proof of structural damage to the annex, Mr Bligh has not been able to prove that the annexe damage he referred to resulted from the Darfield earthquake or any other earthquake.

Leak to the cellar

[326] Mr Bligh is claiming for earthquake damage to the wall of what is now a cellar below the sleep-out in the annexe to his house. There was once a well there, with

concrete walls. The well had been capped below ground level. The remaining part of the well is now a cellar, used primarily as a storeroom. Before the earthquake, the internal face of the walls was covered with a black sealant, described by Mr Smith as mulseal. Mr Bligh claims that the earthquake has led to leaks in the concrete wall which now requires the cellar to be repaired with further internal coats of sealant. Mr Bligh's claimed cost of repairs included an amount for the application of waterproofing compound to internal faces of the sleepout basement walls.

[327] In evidence before me, Mr Bligh said there was cracking caused by the earthquake in the cellar. Mr Bligh explained that water leaks through a crack in the wall which had resulted from different parts of the concrete wall being shunted in the earthquake. Although, somewhat inconsistently, when questioned, he said the leak was from just one small spot.

[328] There was no mention of damage to this part of the annexe in EQC's first assessment of 8 October 2010, an inspection at which Mr Bligh had been present. The cellar was not examined by Mr Wilkinson when he inspected the property for IAG on 28 September 2010. I do not regard the omission of any reference to leaks in the cellar at that point as being significant. At the time of the first EQC assessment, Mr Bligh was living away from the property. The trauma of the actual earthquake was recent. The primary purpose of Mr Wilkinson's initial inspection was to assess whether the building was suitable for occupancy in the short term and the extent of structural damage from recent earthquakes.

[329] In October 2010, following the initial EQC assessors' visit, Mr Bligh had been told those assessors thought there was earthquake damage and had put the cost of repairs at $90,000. The record of Mr Bligh's communications with EQC indicates that, after that initial assessment, Mr Bligh was claiming that the damage was much worse than first assessed and was referring to certain damage specifically. That damage included cracks to the slab in the garage, cracks to the wall of the house and broken bricks.

[330] Mr Bligh asked for a "heritage assessor" to assess the property. Mr Clark inspected the property on 8 December 2010. By that time, Mr Bligh was being more

particular as to damage for which he considered he had a claim. He was not present when Mr Smith carried out his inspection of the exterior of the home on 23 December 2010 but he was present when Mr Robinson inspected the property on 12 January 2011.

[331] On 3 March 2011, EQC advised Mr Bligh that his claim had been declined and provided him with a copy of Mr Smith's report that was the basis for their decision.

[332] In August 2012, Mr Bligh's son, Hayden Bligh, made a complaint about EQC's determination that there was no earthquake damage as a result of the Darfield earthquake.

[333] On 23 November 2012, IAG declined Mr Bligh's claim under his insurance policy in respect of earthquake damage.

[334] On 28 November 2012, Mr Bligh engaged Claims Resolution Services of Christchurch to assist him with the claim. By then, it could be expected that Mr Bligh would have been able to identify with greater particularity the damage he said had resulted from the Darfield earthquake. Mr Bligh was present on 19 December 2012 when the buildings were inspected by two assessors from Canterbury Earthquake Services. They prepared a report for him dated 22 January 2013. The report includes measurements for the walls of the sleep-out and cellar and records damage in those areas as being "nil". Mr Bligh said this was possibly because he had not bothered looking for damage in that area before that inspection.

[335] Mr Bligh was present and assisted when the building was inspected for him by Mr John Johnstone of Claims Resolutions Services on 23 January 2013. Mr Johnstone made notes as to what he observed. There is no mention of claimed damage to the cellar walls in his notes or in his report prepared on 16 July 2014. There is no mention of damage in this area in the joint report to the Court of Mr Smith and Mr Bligh's then expert, Mr Csiba, of October 2015.

[336] Mr Clark inspected Mr Bligh's buildings again after receiving Mr Bligh's briefs of evidence when a claim was being made for the cost of repairs to the cellar

wall. Mr Clark said that, during his August 2016 and November 2017 inspections, he asked Mr Bligh where water was coming into the cellar. Mr Bligh told him it was not water but crystallisation. Mr Clark said he saw signs of this both in August 2016 and November 2017. He took a photo of it on 29 August 2016. Mr Bligh also took photographs showing this in November 2017. These were produced as part of the common bundle. The fact both Mr Clark and Mr Bligh took these photographs is consistent with Mr Bligh telling Mr Clark that this was the damage he was concerned about.

[337] The crystallisation was described by Mr Smith and Mr Clark as efflorescence. It is the process by which soluble salts emerge on the surface from the brickwork or concrete beneath. The photographs showing this were produced to me.

[338] Mr Smith explained that efflorescence results from water permeating through concrete and leaving salts on the surface. He said efflorescence would result from the way the wall was constructed rather than the earthquake. He noted the wall had been coated with mulseal. It was not suggested by Mr Bligh that this had been done after the earthquake. Mr Smith explained that to be effective the mulseal should have been on the outside of the wall.

[339] At trial, Mr Bligh's complaint was not about efflorescence but about water leaking into the cellar and from a particular spot.

[340] There have thus been significant inconsistencies in what Mr Bligh has had to say about this claimed damage. Again, I find that he has resorted to evidence which is unreliable and contrived to counter what I accept from Mr Smith is a likely explanation for the efflorescence.

[341] I am not satisfied that the problems which Mr Bligh had with efflorescence were caused by an earthquake. I am satisfied, to the extent there was a problem with moisture coming through the concrete walls of the cellar, this would have pre-existed the earthquake, hence an attempt to remedy that through the application of mulseal. The evidence does not prove that there has been cracking in the cellar causing water to leak through into it as Mr Bligh alleged in his evidence.

Damage to external paths

[342] Insurance under the EQC Act does not cover paths.[26] However, the AEG policy does provide cover for paths.[27]

[343] At the trial, Mr Bligh produced a number of photographs taken between 13 October 2017 and 22 January 2018. Approximately nine of those related to gaps at two sides of a concrete path on the southern side of the house leading to the annex. The photographs show there was a step from the path to the next concrete section of about 10 centimetres. The lower section of concrete had separated slightly from the next section of concrete and a wall alongside the path.

[344] Mr Bligh said that, on this section of the path, there was drumming. He said it produced an echo and vibration that had not been present prior to the earthquake. Mr Bligh explained he tested this by walking on the concrete in gumboots and comparing the sound to what he said were undamaged solid concrete slabs.

[345] My Bligh's explanation is not a basis on which I can find the earthquake created a void under the slab, such as would cause it to subside relative to the concrete structures, in the way depicted in photographs of the area. During his evidence, Mr Bligh played a video of himself testing the slab in the ground floor area of the home for drumming. He did this by tapping a rod on the concrete floor and recording the sound. What I saw and heard did not enable me to find that this was proof of there being a void beneath.

[346] As Mr Finnemore explained in his evidence, ground radiation can be used to detect voids under concrete. No evidence of that sort was presented for Mr Bligh in relation to the paths.

[347] Mr Ashby's geotechnical evidence corroborated the unlikelihood that an earthquake created a void under the concrete path.

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26 Earthquake Commission Act 1993, s 21(1)(a) and sch 2, cl 16.

27 Mr Bligh's State insurance policy (HOM329769613) provides cover for sudden accidental loss to the home during the period of cover. The home is defined to include "patio, path, tennis court or other permanent domestic structure".

[348] The face of the annexe concrete had been painted the same colour as the path. The paint was reasonably intact on the face of the annexe concrete where it would have been more protected from the weather and general wear and tear. The paint on the path was worn and had disappeared in many places. There was a break between the paint that remained on the path and an adjoining wall.

[349] What the photographs showed was that the concrete path at that point had dropped slightly, relative to concrete structures which it had been up against. The gaps between the concrete path and the adjoining concrete structures were uniform, indicating the path had subsided in a uniform fashion without any racking, tipping or cracking. It was the sort of subsidence that could obviously occur with an old section of a concrete path that might not have been laid on fully compacted and solid foundations.

[350] Another two photographs were of a crack in the path on the western side of the house. Mr Bligh said it was earthquake damage because it lined up with a crack in concrete edging near the western boundary of his property.

[351] Mr Ashby, who gave evidence for EQC, has over 20 years' experience in geotechnical and civil engineering work. When Mr Ashby visited the property, he saw no obvious signs, either in the house or on the ground, that indicated there had been lateral ground movement with the earthquake.

[352] Based on the nature of the ground underlying the property and the level of shaking recorded in the Waddington area, he would have expected there to have been little or no land disruption at the ground surface. Satellite images following the 4 September 2010 event and other reports did not refer to any signs of liquefaction in the area.

[353] Mr Ashby said, the way a crack in the lawn edging lined up with a crack in the path, was likely to be just a coincidence. The most likely explanation for the crack in the edging or curb on the western side of the property was that it was close to a large tree. He considered the crack in the path next to the house was unlikely to have resulted from the earthquake because of what he had to say about potential ground

movement. He said he was reassured of that opinion by the photograph showing that concrete edging between the path and the house had not cracked at all. If the crack in the path had been earthquake-related, he would have expected there to have also been a crack through the concrete edging next to it.

[354] I am satisfied the crack in the concrete edging next to the tree was caused by the tree. The crack that appears in the photographs taken by Mr Bligh in November 2017, looks as would be expected if the edging had been pushed up and out by the base of the tree.

[355] Cracks in the path were referred to in the engineers' report to the Court of October 2015. Both engineers referred to there being open joints and vertical offset at joints. Mr Smith considered those to have been pre-existing and the result of poor workmanship. His explanation for not treating them as earthquake damage was that there had been no liquefaction or subsoil consolidation and historical vegetation was evident. Mr Csiba said there were a number of pre-existing cracks but there had been significant exacerbation. His explanation for this was that:

> According to the homeowner, the damage was caused by earthquakes. The observed vegetation is minor and could be reasonably expected to grow in one to two years according to its size. I believe it is evident that the vegetation started to grow after the earthquakes.

[356] Mr Kearney offered no evidence as to why the crack which had been photographed or the subsidence of the slab outside the kitchen had to have been caused by the earthquake.

[357] When I visited the property during the trial, I saw other cracks in the path, similar to the one which Mr Bligh claims was earthquake damage. The cracking appeared to be old and Mr Bligh does not claim these other cracks were caused by an earthquake.

[358] Mr Smith considered the condition of the path to the west of the annexe was the result of long-term settlement and not due to any earthquake shaking. Mr Csiba, for Mr Bligh, acknowledged the cracking in the paths pre-existed the earthquakes.

[359] With all the evidence I have heard and what I have seen of the areas of concrete, as shown in the evidence produced by Mr Bligh, and with what Mr Ashby and Mr Smith have had to say relevant to this, there is no basis on which I can find that the cracking Mr Bligh has referred to or the subsidence of the slab near the annexe was caused by an earthquake.

[360] I consider Mr Bligh's evidence as to one crack in the path on the western side of the house was another example of him making a claim based on a belief or supposition, a belief which it has been demonstrated was not well-founded.

Settlement of the eastern portion of the garage slab as well as cracking with horizontal and vertical displacement in this area
Undulation of garage roof sheeting
Water marks at discrete intervals on the roof purlins
Racking of door at western end of northern face of garage, latch vertically offset from strike plate
Garage door now catches on the foundations at the western end
Some exacerbation to slab cracking and undulations, as well as cracking to the foundation beam at the western end and very minor undermining of the foundation at the eastern end
The western end of the garage wall has moved out of vertical
The lock and catch to the door on the north face of the garage towards the western end no longer align
Bargeboard at both the western and eastern end of the garage have fallen off.

(i) Slab cracking

[361] Mr Bligh says there is cracking in the south-east corner of the garage caused by the earthquake. He also said there was drumming in the slab in the south-east corner of the garage which suggested there was a void under that part of the garage.

[362] Mr Kearney noted that floor slopes in the western portion of the garage appeared to be historic. He said the eastern portion of the garage had undergone significant settlement combined with cracking. He was of the view that most of the cracking on the eastern side, including the cracking in the south eastern corner of the garage, would have pre-existed the earthquake and that any further earthquake damage to that cracking would have been an exacerbation of what was already there.

[363] The geophysicist, Mr Finnemore, identified voids under the garage. There was a significant void in the south-east corner where there was cracking. There were also smaller anomalies which Mr Finnemore considered were likely to be from old utilities, rotted tree roots and other debris material. Reinforcing mesh or bars were not observed in the garage.

[364] Mr Ashby considered it highly unlikely from a geotechnical perspective that any sub-floor void under the concrete slabs in the garage would have been caused by an earthquake. I accept his evidence.

[365] Mr Smith said the cracking in the south-east corner of the slab in the garage was not typical of shrinkage cracking or earthquake damage in the concrete in that area. He considered that colour variations in the concrete on either side of one of those cracks indicated the crack had existed for a considerable period before the Darfield earthquake. Mr Smith probed the ground through a control joint where loose top-soil was present to a depth of at least 100 mm below the underside of the slab, indicating the slab was poured onto a substandard sub-base. He considered this was the likely cause of the cracking which he observed in that area. He was of the view that, if the cracking had been initiated after a new foundation had been constructed for the portal frame, the cracking would have begun at the corner of the portal frame foundation because that foundation was a stress concentration point.

[366] Consistent with Mr Smith's observation as to the nature of the ground under this part of the slab, Mr Ashby said the discharge of storm-water directly to the ground, in close proximity to the garage foundation in the south-east corner, has the potential to cause cracking and/or settlement of material adjacent to foundations which, in turn, could result in settlement and damage to the foundations and concrete floor slab.

[367] Penetrometer tests established that the ground in the south-east area around the garage was significantly softer than the area to the west of the garage.

[368] For the detailed reasons explained by Mr Ashby and Mr Smith, I accept it is unlikely there was any settlement of the garage slabs or voids created as a result of the Darfield earthquake or the lesser subsequent earthquakes.

[369] Mr Clark took photographs of cracks in the garage floor on 8 December 2010. The cracks had been marked with chalked crosses when he carried out this inspection.

[370] Mr Clark inspected the cracks in the garage at that time. He said he ran his fingers across the cracks and they did not have the sharp-edged feel of fresh cracks. There was debris and detritus in the cracks, consistent with the cracks pre-existing the earthquake.

[371] There was one pronounced crack in that area. It was less than 1 mm wide. Mr Clark felt that crack by running his thumb over it and examined it with a small magnifying glass. He said the edges of the crack were well worn and rounded and, in his view, the crack must have predated the 4 September 2010 earthquake.

[372] The cracks in that area were photographed by Mr Wilkinson when Mr Bligh showed them to him on 13 January 2011. Mr Wilkinson, in his second report, had referred to seeing small freshly broken shards of concrete adjacent to the crack. In those photographs, there are portions of the cracks which look like they could be newer but the photographs are not so clear as to disprove what Mr Clark said he observed and felt on 8 December 2010.

[373] On the evidence, I find that most, if not all, of the cracking in the south-east corner of the garage slab was there before the earthquake. It may well have resulted from the development of a void under the slab in that general area caused by water ingress or the slab having been laid on inappropriately prepared ground. It is possible the cracks did increase as a result of the earthquake, but the mere possibility of this is not sufficient. If the cracks did become more extensive, given the number of cracks that were already there, I do not accept the change affected the underlying strength of the slab in that area. The garage slab did not have cosmetic or aesthetic value so any extension of the cracks would not have affected the slab in that way. Mr Bligh has not proved that any of the cracking in the concrete floor of the garage was caused by an earthquake.

(ii) The roof

[374] Mr Bligh says the roof of the garage was damaged in the earthquake, causing leaks. He claims that the nails in the corrugated iron roof all lifted as a result of the earthquake and had to be refixed.

[375] Mr Bligh says he had to go onto the garage roof and had to bang down every single nail. Mr Bligh says that some of the nails have come up so he needs to "put a different type of fixing there now". Mr Bligh says he thought he had told Mr Wilkinson about the roof in September 2010.

[376] Mr Bligh drew Mr Wilkinson's attention to cracking in the garage when he and Mr Wilkinson inspected the property again at the request of Mr Bligh on 13 January 2011. There is nothing in Mr Wilkinson's report to indicate Mr Bligh brought to his attention at that time any damage to the roof as a result of the earthquake.

[377] The Canterbury Earthquake Services' report of 22 January 2013, prepared after their assessor's inspection of the property with Mr Bligh on 19 December 2012, said the areas inspected included "fences, driveway, garage, pathways, exterior and interior of dwelling room by room". There were photographs of cracks on the garage floor but none of the roof. Mr Bligh had accepted that the report reflected his views about the damage that was there. The report recorded, as to the garage, "roof damage, nil". As to the floor, "cosmetic cracking". As to the garage "tilt-a-door, adjustor, paint doors and jams".

[378] Mr Bligh's engineer, Mr Csiba, did not identify that there was any claimed earthquake damage to the roof in the engineer's joint report to the Court of October 2015.

[379] EQC's record of contact on Mr Bligh's claim indicates that, during 2012, Hayden was contacting EQC as an advocate for his father. Hayden had provided a witness statement before the earlier trial in which he was going to say he had helped nail down the garage roof. That brief had been provided to the other parties as his evidence for the actual trial.

[380] Mr Bligh said in a brief of evidence prepared for the hearing that he and his son Hayden had nailed down the roof of the garage after the earthquakes. During the hearing, he altered his brief to remove the reference to his son Hayden assisting with the work. He said he did it all by himself, hammered down every single nail. He said it had been very difficult for him because of the way he had been affected by strokes. He said his son had been going to give evidence at the hearing but was too upset because of major matrimonial problems and custody issues. Through cross-examination, it was established that Hayden had told Mr Bligh's previous lawyers that he was also reluctant to give evidence at the time of his earlier trial.

[381] Mr Bligh's credibility in relation to this claim is thus put in doubt because of his delay in making any claim for this alleged damage. It is also affected by the significant inconsistency with regards to whether or not his son Hayden was involved in repairing the roof. That inconsistency is important because Hayden had helped his father as an advocate for him in dealings with EQC. Mr Bligh also said his son was a roofer. Because of his ill-health and disabilities, it would have been difficult for Mr Bligh to do the repair work himself. It does appear that, at several points, both Hayden and Mr Bligh were willing to say that Hayden had assisted Mr Bligh in carrying out repairs to the roof as a result of earthquake damage. On two different occasions, significantly apart in time, Hayden has not been willing to come to Court to confirm that evidence. Mr Bligh has then changed his evidence as to his son's involvement.

[382] In all these circumstances, it would have been appropriate for me to draw an inference adverse to Mr Bligh that his son would not support him with regards to relevant aspects of his evidence as to the roof.[28]

[383] There was further justification for me to draw such an inference as a result of information which Mr Lynn considered he was obliged to provide the other parties when it appeared he would be calling Hayden Bligh as a witness but did not have an up-to-date signed brief from him. In that memorandum, he said Hayden Bligh would be saying, contrary to his earlier brief, that:

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[28] For cases where negative inferences have been drawn from the failure of a party to call a witness, see *Ithaca (Custodians) Ltd v Perry Corporation* [2004] 1 NZLR 731. Cited more recently in *Nisha v LSG Sky Chefs New Zealand Ltd* [2015] NZEmpC 171, [2015] ERNZ 1124 *Yang v Chen (No 2)* [2011] NZCCLR 13.

(a) he is not able to identify changes to the cracking to the first floor external brickwork as a result of the earthquake;

(b) he is unaware as to whether or not there are new cracks in the garage floor slab as a result of the earthquake;

(c) he did not assist his father to re-nail nails in the garage roof after the earthquake; and

(d) he does not recall assisting his father removing plaster from the upstairs bedrooms.

[384] It was indicated that he would be giving evidence consistent with other aspects of the claims his father was making.

[385] Mr Smith inspected the garage roof during his November 2017 site visit. He described it as being in reasonable condition but with defective and loose fixings, poorly installed flashings and poorly aligned sheets. He did not consider any of these defects to be earthquake damage. Some fixings were partially withdrawn as he said could occur under strong wind loadings.

[386] Mr Smith explained that the earthquake was less likely to have caused damage to the roof of the garage because it was a light-weight structure, somewhat flimsy at the western end, but stronger where very substantial portal frames had been installed at the eastern end. He explained that, with a light-weight structure, the force and distortions on a building associated with an earthquake are much less.

[387] Mr Clark took photographs of an area of the roof on 27 November 2017. It is apparent from these photographs that there was some new corrugated iron sheeting on the roof at that point. Some tin flashing at the end of the garage was then held down by heavy stones. At that time, there were a range of different nails or fastenings in the roof. There was also the odd hole which had been filled with some form of bonder fill. Some lead-head nails had been overdriven so that the head of the nail had come through the lead cap. Mr Clark described it as a very aged roof with some misplaced

sheets. When I viewed the garage during the hearing, there appeared to be sagging in the roof beams in the western two thirds of the garage.

[388] The garage is old. Mr Kearney agreed the framing on the western wall is inadequate. The supports for the roof vary over the width of the building. Only some areas of the garage have a timber sarking under the roof cladding. Mr Clark said there were holes in some of the roofing which had been sealed, consistent with some parts of the roofing having been used previously and salvaged. The roof has a low pitch which could have made it more prone to leaks. In 2017, Mr Clarke observed undulations in the roof of the garage.

[389] The corrugated iron could have been lifted by the wind, forcing nails up. The garage is exposed to nor-west winds. In 1992, Mr Bligh's then engineer, Mr Lewis, provided plans for the erection of the steel portals in the garage and told Mr Bligh that he had used steel work because "a steel shape provides some lateral resistance to wind load whereas a timber beam and post would only take snow loads". Before the steel portals were installed, the roof had only timber support and had been subjected to snow loading that could also have affected the roof.

[390] In 1992, the Lewis and Barrow Limited's plans for the strengthening of the garage proposed that new frames would be installed "to reduce purlin spans and provide more wind resistance".

[391] There may well have been some loosening of the nails, some undulations and some leaks in the roof, however, the evidence has not been sufficient to prove that such defects in the garage resulted from the Darfield earthquake or later lesser earthquakes.

(iii) The tilt door

[392] The steel tilt door was installed in conjunction with the erection of the steel portal frames. It is a wide doorway, amply wide enough for two vehicles to go through, but with a doorway for pedestrian access within the tilt door at its western end.

[393] Mr Clark used a laser to check whether the door was level when he examined it in November 2017. Using a level, he established that the door was horizontally level. At that time, however, he confirmed that the bottom of the door at its western end scraped against the concrete floor beneath it.

[394] Mr Bligh says there is a gap at the bottom of the eastern end of the door but it sticks on the concrete at the western end. He believes the ground has moved and pushed up the concrete slab at one end.

[395] Mr Kearney's theory regarding the catching of the door is that the south-east portal frame supporting the lintel had settled due to earthquake shaking. This had, in turn, caused the garage doorframe to twist out of shape and for the western end of the garage door to scrape on the ground.

[396] Mr Bligh did not point out this problem with the door as being an item of earthquake damage when he showed Mr Wilkinson the marked cracks in the garage floor slab on 13 January 2011. Such damage is not referred to at all in Mr Wilkinson's report referring to that visit. It was not mentioned as an item of earthquake damage in the Canterbury Earthquake Services' report of 22 January 2013 or by Ms Csiba in the joint report of the engineers to the Court in October 2015.

[397] Mr Ashby was clear that settlement of the south-east portal frame was very unlikely to be due to earthquake shaking. He was of the opinion that the foundations for the portal frame would have been such that, given the ground conditions there, those foundations would have been unlikely to settle as a result of the earthquake.

[398] Lewis and Barrow Limited's designs for the portal frame specified that all work was to comply with relevant New Zealand standards, foundation depths shown on the plans were minimum only and all foundations were to extend down to a solid bearing.

[399] The photographs do not indicate there had been any movement in the slabs of concrete below the garage door.

[400] Mr Clark explained that tilt doors can shift slightly over time, sometimes through changes in the puck or wheel that runs along the rail as the door retreats when it is lifted. Mr Bligh has not had a door installer attempt to adjust the door to stop it scraping the concrete below.

[401] Mr Clark was of the opinion that, to the extent the tilt door had dropped at its western end relative to the concrete beneath, this was likely to be the result of normal wear and tear. In particular, he pointed out that the drop was at the end of the tilt door where the pedestrian access doorway was situated. Downward pressure could be applied at that end of the tilt door through pedestrians stepping on the bottom framing of the pedestrian doorway.

[402] Given the general state of the garage floor before the earthquake, as noted by Mr Kearney, it cannot be assumed that the concrete below the door was level at the time the door was installed. A tilt door can however be installed and adjusted to cope with any non-level or perpendicular alignment of the frame within which it sits. The door could have been appropriately adjusted when it was installed. Mr Clark said it would take a door installer conversant with the mechanisms of a door like this only an hour or two to readjust the door so as to avoid the catching which now occurs.

[403] Given the overall condition of the garage, the obvious way in which maintenance on the garage had been deferred over a number of years and the delay in Mr Bligh asserting that this catching with the door was the result of an earthquake, he has not been able to prove that the catching of the door on the concrete beneath was caused by an earthquake.

(iv) Changes to the western end of the garage

[404] Mr Bligh claims the bargeboard at the western end of the garage fell off because of earthquakes and needs to be replaced as earthquake damage.

[405] The bargeboards remained on the ends of the garage after the September 2010 earthquake. When he saw the garage in December 2010, Mr Clark noticed the bargeboards at either end were covered in lichen. Mr Bligh accepted that parts of them were rotten. Mr Bligh agreed the February 2011 earthquake was not as forceful as the

Darfield earthquake at his property. There was no mention of the bargeboards having been damaged in any earthquake at the time he prepared his briefs of evidence for the October 2016 hearing.

[406] I accept that, at some point after the earthquakes, the bargeboards at each end have, wholly or partially, fallen off the building.

[407] There is no evidence as to precisely when Mr Bligh noticed the bargeboards had fallen from the garage, relative to any earthquake. The evidence simply establishes that bargeboards were on the garage walls before the Darfield earthquake but in a severely deteriorated state. They have fallen off at some time since the 20 February 2011 earthquake. The loss of the bargeboards was mentioned for the first time as damage resulting from the earthquake in Mr Bligh's third brief of evidence prepared subsequent to the scheduled first trial and for the second trial.

[408] With the evidence as it is, I cannot find that the bargeboards fell off the garage as a result of an earthquake.

[409] On the northern front of the garage, at its western end, there is another pedestrian doorway. It is timber. Mr Bligh claims there has been a racking or tipping of the door relevant to the frame caused by the earthquake which means the latch is vertically offset from the strike plate so that the latch no longer works. He produced photographs taken between 13 October 2017 and 22 January 2018 which show this.

[410] This door is hinged directly onto a post at one side of the door rather than a conventional doorframe. There is a gap between the top of the door towards the eastern side and the beam above it. The bottom of the door has rotted somewhat. Potentially, the door could have dropped a little through age and general wear and tear.

[411] It was possible an earthquake could have caused the pedestrian door at the western end of the garage to drop, especially so with the timbers on one side of the door being rotten at the bottom. Mr Smith considered the movement of that door was "absolutely predictable" but it would not have taken an earthquake to cause this, although it was possible an earthquake could have caused the drop.

[412] Again, the first time a claim was made in relation to this problem was in Mr Bligh's third brief of evidence, prepared for the second trial. In November 2017, the door latch still worked. The door had however dropped and the door latch did not work when Mr Clark visited the property during the hearing.

[413] Mr Clark said that the door latch was working and did properly align when he visited the property in November 2017 with Mr Smith. When Mr Smith was inside, he inadvertently became locked inside the garage when the door had slammed shut. Mr Smith could not find the light switch and could not open the lock because it required a key. Mr Clark found the key and said he was able to open the door with a turn of the key in a straightforward manner. He said the latch then functioned. It locked and opened.

[414] Mr Clark's evidence as to the latch working well in November 2017 is compelling. On the basis of that evidence, any drop in the door, as shown by Mr Bligh's more recent photographs, could not have been caused by an earthquake.

[415] In his third statement of claim, Mr Bligh's pleaded particulars of alleged earthquake damage included the western wall of the garage moving out of vertical. Mr Smith accepted there could have been some movement of posts at the western end of the wall due to the earthquake but concluded that much, if not all, of the deformation pre-existed the earthquake.

[416] Both Mr Smith and Mr Kearney agreed the western wall of the garage was substandard. This was clear from viewing the framing at that end of the garage. The lack of maintenance at that end of the garage was also apparent through the deterioration on the bargeboard outside and the way flashings on the roof at the end of the garage were held in place by weights.

[417] With the western end of the garage being so poorly constructed, and with it having been so poorly maintained, the evidence does not prove that it is likely any lateral movement of the western wall or the racking of the door at the western end of the garage resulted from an earthquake.

[418] Accordingly, Mr Bligh has been unable to prove that his garage suffered earthquake damage in the various ways alleged in his statement of claim.

Unknown damage to the bore

[419] Mr Bligh pleaded that the earthquake had caused "unknown damage to the bore and pump … so that it now produces cloudy water". He alleges the pump valve now makes excess noise and water is produced at a reduced rate. Mr Bligh complains that he told EQC about the state of the water but EQC have not investigated this. His evidence is that he does not "know exactly what the damage is". As Mr Wood submitted, he has led no evidence from anybody who does. There is thus no evidence of any physical loss or damage to the structure of the bore as the direct result of the earthquake. On that basis, his claim against EQC must fail.

[420] I also accept the submission for EQC that the EQC Act does not guarantee a supply of potable water. The insurance of residential buildings under s 18(1) of the EQC Act extends, through paragraph (d) of the definition of "residential building" in s 2(1) to "all water supply … services and structures are pertinent thereto". What are insured are thus the physical assets that provide the service, not the provision of water itself. The fact there is a discolouration of Mr Bligh's water or a reduced flow of water does not, of itself, show there has been physical loss or damage to the structure of the bore, the metal tanks or the stand they sit on.

[421] In August 2014, Mr Bligh discussed an issue with the bore with Mr Clark. Mr Bligh explained he could not show what the issue was because the bore was not turned on at the time but the problem was with the potability of the water.

[422] Mr Clark inspected the bore tanks and metal stand structure during his November 2017 inspection. It was possible the tank was out of level but he said he could see no signs that the structures had been damaged by an earthquake. If the water tower had moved as a result of earthquake shaking, he would have expected to see contortion or buckling of the metal stand and movement of the pad mounts. He did not see any of those signs.

[423] Mr Bligh has not proved there was earthquake damage to the bore, water tank or tank stand.

Summary of conclusions

[424] Given the difficulty I have with Mr Bligh's credibility, it has not been possible for Mr Bligh to prove there was earthquake damage to his home and garage simply through his assertion that relevant parts of his home and garage were in a particular state before the earthquakes and, on his observation, in a different and damaged state after the Darfield or subsequent lesser earthquakes. On all the evidence that has been presented, Mr Bligh has been unable to prove there was earthquake damage to his property for which either EQC or IAG could be liable.

[425] It is thus not necessary for me to decide whether the damage that is apparent in the first floor brick walls could be remedied only with the application of shotcrete to both sides of the walls and installation of Helifix ties, as Mr Kearney suggested would be necessary, or the more localised and much less expensive repairs that Mr Smith said would be sufficient. I also need not decide whether the reasonable repairs of damage to the brickwork would require plastering over both the ground floor and first floor walls for the sake of aesthetic uniformity when there has been no such uniformity in the exterior appearance of the walls since at least Mr Bligh's removal of plaster from most of the first floor walls after the concrete beam was installed.

[426] It was also argued for Mr Bligh that, because the shotcrete application is of a structural nature, that work would require a building consent and a building consent would not be issued for such alterations if there were other parts of the building which are not structurally sound. It was submitted that the first floor flooring is not structurally sound, so current regulations would require the replacement of that floor. That would necessitate significant rebuilding of internal walls, consistent with an obligation on IAG to repair damage to a condition as new in accordance with what is required to meet current regulations. Because I have held EQC and IAG have no liability for such defects as are apparent in the building, I need not deal further with those submissions.

[427] Mr Bligh also made a claim against EQC and IAG for general damages in the sum of $25,000 because of the way their conduct had caused him substantial distress, inconvenience and mental anguish. There is no doubt that Mr Bligh has been intensely aggrieved at EQC's refusal to accept his claim and this has caused him considerable distress. I have held that both EQC and IAG have been entitled to resist his claims. The evidence also did not establish that either EQC or IAG had acted unreasonably or in breach of their contractual obligations in a way that could give rise to an entitlement to general damages.

[428] There were times when, in response to communications from either Mr Bligh or his son Hayden, who was acting as his advocate, certain EQC employees responded as if EQC were, at that time, still considering his claim when in fact it had already been declined. The miscommunication could not be attributed solely to inefficiencies on the part of EQC staff. There would have been significantly less potential for such confusion if, at the time such enquiries were made, the EQC staff were told that Mr Bligh's claim had been declined and the communication was in relation to that.

[429] I note also that, after Mr Bligh's claim had been declined, EQC had indicated they would consider any report from any engineer that Mr Bligh might instruct. No such report was provided.

[430] EQC suggested Mr Bligh could take advantage of their mediation services. He did not do this, because he said he had heard from others it would be a waste of time. Litigation undoubtedly became inevitable when, with the support of Canterbury Earthquake Services, Mr Bligh claimed his home had suffered earthquake damage to an extent that required EQC and IAG to meet the costs of a rebuild. This then led to Mr Bligh's first statement of claim dated 23 July 2012 in which he sought $963,000.71 from EQC/IAG and $25,000 from each by way of general damages. That claim was subsequently amended on 12 December 2014 to a claim for remediation costs of $596,249 and general damages of $25,000 against each defendant. It is also apparent from all the documents put before me that, in the approach to the October 2016 hearing, EQC did make an offer that would have brought this dispute, which has caused Mr Bligh such distress, to an end and, as it has turned out, would have been significantly to his benefit.

[431] Having failed to establish he suffered loss for which either EQC or IAG are liable, Mr Bligh's claim for general damages and also an order that IAG pay the fees he incurred with engineers, surveyors, building consultants and legal advisers in connection with these proceedings must also fail.

[432] Mr Bligh was entitled to continue with his claim. He was able to do so with the most conscientious and thorough assistance of his counsel. To succeed with his claim, he had to meet the burden which was on him to prove that the Darfield earthquake caused damage to his property. He has not been able to do so.

[433] Accordingly, judgment is given for both EQC and IAG on the claims against them. If there is no agreement over costs, those parties seeking costs must file memoranda in support by 21 September. Reply memoranda for Mr Bligh are to be filed within four weeks of their receiving the memoranda seeking costs. Any reply in response to the memorandum from Mr Bligh is to be filed within two weeks of their receiving his memorandum.

[434] The memoranda are to be no longer than 10 pages but associated with them and outside that page number is to be a chronology, to the extent it is relied upon, and a bundle of any documents that are being referred to, to the extent those documents are not already in the bundles which are before the Court.

Solicitors:
GCA Lawyers, Christchurch
Chapman Tripp, Wellington
Duncan Cotterill, Auckland.