

**IN THE COURT OF APPEAL OF NEW ZEALAND**

**I TE KŌTI PĪRA O AOTEAROA**

**CA555/2021  
[2024] NZCA 483**

BETWEEN	TRACEY JANE CRIDGE, MARK ANTHONY UNWIN, KATRINA MCKELLAR FOWLER AND SCOTT WOODHEAD Appellants
AND	STUDORP LIMITED First Respondent
AND	JAMES HARDIE NEW ZEALAND LIMITED Second Respondent

Hearing: 1–11 August 2022 and 27 June 2023

Court: French, Brown and Gilbert JJ

Counsel: J A Farmer KC, R J B Fowler KC, T J Rainey, J T Wollerman,  
E S K Dalzell and D A Fry for Appellants  
J E Hodder KC, B A Scott, J A McKay, E S Scorgie and  
S R Roberts for Respondents

Judgment: 26 September 2024 at 11.30 am

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**JUDGMENT OF THE COURT**

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- A The appeal is dismissed.**
- B In the event the parties cannot agree on costs and require a determination from the Court, leave is reserved for costs memoranda to be filed within 15 working days of this judgment.**
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**REASONS OF THE COURT**

(Given by French J)

## Table of Contents

	<b>Para No</b>
<b>Introduction</b>	[1]
<b>Background</b>	[14]
<i>The Harditex product</i>	[14]
<i>The homeowners' claim</i>	[21]
<i>The High Court decision</i>	[31]
<b>Did James Hardie owe a duty of care?</b>	[36]
<b>Our general approach to the factual issues</b>	[84]
<b>Fitness for purpose: moisture management</b>	[86]
<i>Mechanisms of water ingress and egress</i>	[90]
<i>Deflection</i>	[97]
<i>Drainage</i>	[103]
<i>Drying</i>	[111]
<i>Arguments on appeal</i>	[116]
<b>Durability: fungal decay</b>	[138]
<i>Empirical evidence</i>	[149]
<i>The Biodet reports</i>	[160]
<i>James Hardie internal communications</i>	[167]
<i>BRANZ papers</i>	[171]
<i>Statements in patents</i>	[176]
<i>Expert conference statement</i>	[182]
<i>Allunga documents</i>	[186]
<i>Differential movement</i>	[214]
<i>Flexural strength</i>	[216]
<b>Vulnerabilities resulting from construction details</b>	[222]
<i>The h-mould and corners</i>	[225]
<i>Base of the sheet</i>	[263]
<i>Windows</i>	[289]
<i>Building movement</i>	[299]
<b>Buildability</b>	[303]
<i>Identification of the intended user</i>	[309]
<i>Evidence of builders called by the homeowners</i>	[315]
<b>The test properties</b>	[334]
<i>Bay Lair</i>	[351]
<i>Woodhouse</i>	[357]
<i>San Vito</i>	[365]
<i>Ambassador</i>	[377]
<i>Carnelian</i>	[385]
<i>Golf Road</i>	[390]
<i>The Esplanade</i>	[395]
<i>Portsmouth</i>	[405]
<b>The claim under the Fair Trading Act</b>	[412]
<i>The target audience</i>	[417]
<i>False and misleading conduct</i>	[428]
<i>Causation</i>	[439]
<b>Were the negligence claims of the named appellants time-barred?</b>	[447]
<b>Costs</b>	[465]
<b>Outcome</b>	[468]

## Introduction

[1] From 1987 until 2005, Studorp Ltd and James Hardie New Zealand Ltd (James Hardie)<sup>1</sup> manufactured and sold a sheet cladding system called Harditex for use in residential houses. A group of homeowners whose houses were built using Harditex claimed that Harditex was an inherently defective product that was not fit for purpose. They further claimed it had either caused or contributed to cause their homes to suffer water ingress and moisture-related damage.

[2] The inherent defects relied on included the absorbent nature of the Harditex sheets and allegations that the cladding system allowed significant water ingress at various locations, principally the base of elevations, horizontal control joints, exterior corners and penetrations such as joinery/cladding junctions. It was alleged that not only was the system vulnerable to water ingress, it did not have adequate drainage and drying capabilities to manage the water that entered the wall assembly.

[3] The homeowners further alleged that Harditex required a level of building expertise beyond the skill level of a reasonably competent builder, and that James Hardie provided inadequate and misleading information to consumers and builders.

[4] Two sets of homeowners, the named appellants, filed proceedings against James Hardie in the High Court, seeking to hold the company liable in damages. They sought and obtained a court order allowing them to bring their proceedings in a representative capacity on behalf of all current and previous owners of properties clad with Harditex who consented to being represented.<sup>2</sup> The class comprises an additional 144 owners of 149 properties.

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<sup>1</sup> Studorp Ltd manufactured the product until 1998 when James Hardie New Zealand Ltd took over manufacture and associated sales and promotion. James Hardie New Zealand Ltd was briefly registered as 2XL Ltd, and Studorp Ltd was previously known as James Hardie Building Products Ltd and James Hardie & Coy Pty Ltd. We use the name James Hardie throughout most of the judgment except when needing to differentiate James Hardie New Zealand Ltd and/or Studorp Ltd from other entities in the James Hardie group of companies.

<sup>2</sup> *Cridge v Studorp Ltd* [2016] NZHC 2451 [representative orders judgment], substantively upheld in *Cridge v Studorp Ltd* [2017] NZCA 376 [representative orders appeal]. Pursuant to High Court Rules 2016, r 4.24(b).

[5] As is usual practice in class actions, it was decided that the first stage of the representative proceeding would be to try the claims of the representative plaintiffs in full, that is to say, the claims of the named appellants Ms Cridge/Mr Unwin and Ms Fowler/Mr Woodhead. The High Court also ordered that the trial of those claims would be determinative of the following issues as between the parties and the represented class members:<sup>3</sup>

- (a) whether a duty of care was owed by James Hardie;
- (b) if so, whether that duty was breached as alleged; and
- (c) whether the statements made in James Hardie’s technical literature were misleading and deceptive.

[6] For the purposes of the proceeding, the houses<sup>4</sup> of six members of the represented class were selected as test properties in addition to the homes of the named appellants. This resulted in a total of eight properties being subjected to invasive testing and inspection in order to analyse the extent and causes of the moisture damage. For ease of reference, throughout the judgment — except when it is necessary to distinguish between the homes of the named appellants and those of other class members — we refer to all eight properties as “the test properties”.

[7] The hearing in the High Court before Simon France J lasted almost four months. During that time, extensive expert evidence was given, as well as evidence from some of the homeowners themselves. The evidence can be conveniently identified as being of three main categories: evidence of the relevant building science, evidence about the test properties and evidence of testing conducted by both parties for the purposes of the litigation.

[8] The Judge held that James Hardie owed a duty of care to the homeowners but in all other respects rejected the homeowners’ claim.<sup>5</sup> He found they had failed to

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<sup>3</sup> Representative orders judgment, above n 2, at [86], confirmed in representative orders appeal, above n 2, at [60].

<sup>4</sup> One of the properties was a motor lodge.

<sup>5</sup> *Cridge v Studorp Ltd* [2021] NZHC 2077, [2022] 2 NZLR 309 [substantive judgment] at [678], [686] and [888].

prove Harditex was an inherently flawed product unable to deliver a watertight and durable house.<sup>6</sup> He said he was satisfied that Harditex worked and that, while capable of improvements, it was fit for purpose.<sup>7</sup> The Judge accepted, as indeed did James Hardie, that the test properties were water damaged and should not be.<sup>8</sup> However, he concluded that the cause of the damage to the test properties was more likely to be incompetent building and poor texture coating than inherent defects associated with Harditex.<sup>9</sup>

[9] The effect of this judgment was to spell the death knell not only of the claims of the named appellants but also the claims of the represented class members.

[10] The homeowners now appeal. As will become apparent, their counsel have left no stone unturned. They challenge almost all of the Judge’s factual findings, on multiple grounds, so that to a significant extent the appeal has involved a complete re-litigation of most trial issues. For its part, James Hardie seeks to support the judgment on grounds other than those on which the judgment was based. These “other grounds” include the assertion that James Hardie did not owe any duty of care to the homeowners in tort and the assertion that the claims were time-barred.<sup>10</sup>

[11] The number of issues for our determination is thus significant and multifaceted. Further, the issues are not discrete but rather overlap and impact on each other. For example, what the water damage to the test properties reveals obviously bears on any assessment of the competing views of the relevant building science and vice versa. Yet at the same time, each of the main factual issues requires a separate detailed discussion. This makes ordering the material in the judgment more difficult than usual because, as the Judge also observed,<sup>11</sup> the case does not readily lend itself to a progressive statement or unravelling of the reasons leading to the ultimate answer.

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<sup>6</sup> At [687] and [889].

<sup>7</sup> At [97] and [889]–[890].

<sup>8</sup> At [6].

<sup>9</sup> At [889].

<sup>10</sup> Of the issues raised by James Hardie, we address only the duty and limitation issues due to their general importance. We do not address the other issues raised, namely the Judge’s treatment of the James Hardie RDH testing, the Building Research Association of New Zealand (BRANZ) appraisal, the Biodet reports, and the evidence about the quality of technical instructions provided by other cladding manufacturers.

<sup>11</sup> Substantive judgment, above, n 5, at [10].

[12] In those circumstances, we consider it helpful at the outset to both state our conclusion — which is that the appeal should be dismissed — and provide a brief statement of our key reasons for reaching that conclusion. Those reasons are:

- (a) Criticisms of the Judge’s assessment of the expert evidence relating to the alleged inherent defects of Harditex and the causes of the water damage in the test properties are unjustified.
- (b) Our own assessment of the evidence confirms that, generally speaking, on several key issues the James Hardie experts had greater expertise and gave their evidence in a more measured and less partisan way than some of the experts called by the homeowners.
- (c) Neither the evidence derived from the test properties nor the testing conducted for the litigation undermined the evidence of the James Hardie experts. On the contrary, the test properties tended to support the James Hardie claim that, when properly constructed and maintained, Harditex was fit for purpose.
- (d) None of the test properties had been built in compliance with the James Hardie installation instructions and all contained significant building defects. They did not provide a meaningful test of the Harditex system.
- (e) It is reasonable to assume that had any of the class members owned a property which had suffered water-related damage despite being constructed in accordance with the James Hardie instructions and relevant building regulations, that property would have been selected as one of the test properties.
- (f) The technical instructions provided by James Hardie were adequate and, with one possible exception, did not amount to operative misstatements.

[13] This summary of our key reasons does not include any of the points raised by James Hardie to support the judgment on other grounds. That is because our factual findings on the evidence are sufficient to determine the outcome of the appeal. Although we do address the duty and limitation issues, the appeal does not turn on the existence of a duty or on otherwise meritorious claims being defeated because they are out of time. Rather, the appeal turns on whether any legal obligations — assuming they existed — were in fact breached.

## **Background**

### *The Harditex product*

[14] Like the Judge, we consider it helpful to begin with an explanation of the Harditex product. As will be apparent from our introductory section, Harditex is both the name for a cladding sheet and a cladding system.

[15] James Hardie launched Harditex in 1987. In 1999, the company initiated the Harditex Improvement Project. The improvements identified by the Project were integrated into a new cladding product called Monotek which was developed and released in New Zealand in mid-2001. Both Harditex and Monotek remained on the market until 2005 when Harditex was discontinued.

[16] It was estimated by one witness that between 1987 and 2005, approximately 117,000 dwellings were built in New Zealand using Harditex.

[17] The system, which is a direct-fixed panel cladding system, comprised the following components:

- (a) Rectangular 1.8–3.0 m by 1.2 m fibre cement sheets with a thickness of 7.5 mm.<sup>12</sup> These were installed vertically over a timber framing, with the sheets nailed directly to the timber frame with dozens of nails. The

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<sup>12</sup> Subsequent to Harditex's introduction to the market, sheets with 0.9 m width and 9 mm thickness became available.

nailing resulted in what the Judge described as “a significant clamping effect between sheet and timber frame”.<sup>13</sup>

- (b) Breathable building paper/wrap between the frame and the sheet, which was stapled to the timber frame.<sup>14</sup>
- (c) Jointing systems.
- (d) A coating process.
- (e) Polystyrene architectural shapes designed to be affixed to Harditex and provide architectural trim details for windows, arches, cornices and columns.

[18] For completeness, we note that at trial, there was a dispute between the expert witnesses as to whether the Harditex system was a face-sealed system or a concealed barrier system, the concealed barrier being the building wrap. As the Judge noted, the significance of the distinction is that a face-sealed system is a system reliant on keeping out all water that hits the exterior surface. No rainwater is meant to get behind the cladding and therefore there is no purpose-built capacity to drain away any water that does get behind the cladding.<sup>15</sup>

[19] The Judge took the view that the label did not matter for the purposes of the case because if the homeowners were correct and there was inadequate moisture management capability, it was immaterial whether it was an unsuccessful face-sealed system or an unsuccessful concealed barrier system.<sup>16</sup> He went on to say that, to the extent an answer was needed, he considered Harditex was not a face-sealed system and that it was never intended to be one because no one thought the system would keep out all rainwater.<sup>17</sup>

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<sup>13</sup> Substantive judgment, above n 5, at [14].

<sup>14</sup> Throughout the judgment we use the terms building paper and building wrap interchangeably.

<sup>15</sup> Substantive judgment, above n 5, at [44].

<sup>16</sup> At [49].

<sup>17</sup> At [50].



[20] This issue of whether Harditex was meant to be a face-sealed system was not a focus of the appeal. And we therefore do not address it further, other than to say we consider the approach taken by the Judge makes sense.

*The homeowners' claim*

[21] The homeowners alleged Harditex suffered from a number of inherent defects which when viewed as a whole came together to comprise a system which was not and never was fit for the purpose of producing a weathertight and durable cladding. Given these inherent defects, it was said to be inevitable that Harditex houses would fail even if they were constructed by a competent builder who complied with good building practice and the installation information provided by James Hardie. In short, the product was defective when it left the factory.

[22] The specific inherent defects alleged were summarised by the Judge in the following terms:<sup>18</sup>

Inherent defect one – The Harditex sheet is inherently moisture absorbent and will therefore absorb moisture and, when directly fixed to the timber framing, permits the transfer of moisture to adjacent building elements such as the [building wrap] and the framing.

Inherent defect two – The Harditex cladding system (which is direct fixed to the framing of the building) allows water ingress at various locations including at the base of sheets, at horizontal control joints, at penetrations including window junctions, at junctions with other building elements, through areas where cracking occurs and elsewhere.

Inherent defect three – The Harditex cladding system does not adequately manage drainage and drying of any water that penetrates or accumulates within the Harditex cladding system and underlying areas. This is contrary to sound water management principles.

Inherent defect four – The Harditex cladding system fails to adequately accommodate normal building movement (whether that arises due to thermal activity, effect of moisture, seismic activity, structural movement through wind pressure or through other normal and expected causes of building movement), which leads to cracking, water ingress and damage.

Inherent defect five – The Harditex sheet is not durable. It absorbs moisture and is prone to damage from exposure to moisture, including swelling, rotting and decay.

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<sup>18</sup> At [24].

Inherent defect six – The Harditex 1991 Technical Information was inadequate and incapable of providing a cladding system which was fit for its purpose as a durable and weathertight exterior wall cladding system and able to meet appropriate standards and requirements for building.

Inherent defect seven – The Harditex 1991 Technical Information fails to specify a method of installation of the Harditex cladding system which makes adequate allowance and contains sufficient tolerances for the typical conditions that exist on a building site, including climatic conditions, the skill and precision of a reasonable cladding installer and the tolerances to which buildings are constructed.

Inherent defect eight – The Harditex 1991 Technical Information failed to provide details and specifications for important and commonly occurring details including face sealed window junctions, terminations of the horizontal control joints and exterior and interior corners.

Inherent defect nine – The maintenance requirements for the Harditex cladding system were vague, and impractical or impossible to achieve.

[23] As will be apparent, the alleged “inherent” defects included aspects of various editions of the James Hardie Technical Information (the JHTIs). These were information brochures or manuals containing specific installation information, rules and explanations. The homeowners claimed there were faults in the design and installation details and that the instructions were inadequate.

[24] The first JHTI was produced in 1987. Thereafter there were new or updated versions in every year (bar 1990 and 1997) until 1998. There were two versions in 1998 and they were the last versions. As the Judge noted, over the years the documents evolved becoming increasingly longer and more detailed.<sup>19</sup> The first version was eight pages long with 10 diagrams,<sup>20</sup> whereas the final version ran to 43 pages and included 69 diagrams.

[25] The homeowners’ complaints about the content of the JHTIs fell into two broad categories. First, they claimed there were faults in the design and installation details, and that the instructions were inappropriate and inadequate. Secondly, they claimed that the JHTIs contained misrepresentations about the attributes of Harditex, in particular that Harditex was suitable, proven, durable and complied with the building code.<sup>21</sup>

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<sup>19</sup> At [696].

<sup>20</sup> Two being diagrams of accessories, a nail and reinforcing tape.

<sup>21</sup> See Building Regulations 1992, sch 1 [building code].

[26] The statements of claim pleaded causes of action under ss 9 and 10 of the Fair Trading Act 1986 and the tort of negligence. As regards the negligence claim, the duty of care said to be owed was articulated in the following terms:

At all material times James Hardie owed the plaintiffs a duty to exercise reasonable care and skill in relation to the design, development, manufacture, testing and supply of its Harditex building products, approved accessories and technical information documents ...

[27] The pleadings went on to state that as part of this duty, James Hardie owed the plaintiffs a duty to take all reasonable care and skill in any one or more of the following respects:<sup>22</sup>

- (a) When designing, manufacturing and supplying the Harditex building products and related accessories;
- (b) When deciding the composition of and manufacturing [of] the Harditex fibre cement sheets;
- (c) When designing, manufacturing and supplying the Harditex Cladding System;
- (d) When deciding the content of the Harditex 1987 [JHTI] and the Harditex July 1991 [JHTI];
- (e) When undertaking all related work to design, prepare, amend and issue the Harditex 1987 [JHTI] and the Harditex July 1991 [JHTI] ...;
- (f) When testing and/or deciding the testing reasonably required for its Harditex building products and the Harditex Cladding System in order to be satisfied that the products and systems were fit for their intended purpose and able to achieve the performance expected in the circumstances;
- (g) When monitoring, assessing and responding to emerging information about moisture ingress, defects and damage with the Harditex cladding systems and to warn those affected as appropriate;
- (h) When undertaking all of the work, functions, duties, obligations and responsibilities of a responsible designer, manufacturer and supplier of exterior cladding products and their associated cladding system;
- (i) When considering and determining whether to withdraw the Harditex Cladding System from the market and to warn those affected

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<sup>22</sup> This summary of the pleadings is taken from the Cridge/Unwin statement of claim but the pleading in the Fowler/Woodhead statement of claim is in identical terms aside from the specified JHTI versions (“up to and including the Harditex July 1998 [JHTI]”) and the inclusion of a duty owed in respect of “when making statements in the JHTI (from June 1993 up to and including the Harditex February 1996 Technical Information) that Harditex had gained BRANZ/BTL Appraisal Certificates Nos. 229 and 243”.

regarding the withdrawal of the product and the reasons for the withdrawal ... ;

(j) When making changes to the JHTI and installation instructions, to adequately research, test and verify such changes and to notify the market ... ; and

(k) When releasing to the market Monotek cladding ... .

[28] As the Judge noted, the negligence claim revolved round three aspects: the product and the system, the technical literature (the JHTIs), and evolving knowledge of issues with Harditex and whether that gave rise to an obligation either to modify the product or warn consumers about the known risks.<sup>23</sup>

[29] As the Judge also noted, there was a large degree of overlap between the negligence claim and the claims under the Fair Trading Act.<sup>24</sup>

[30] The primary remedy sought by the plaintiffs in all causes of action was the cost of repairing their properties.

#### *The High Court decision*

[31] The hearing in the High Court took 84 days and involved a significant number of expert witnesses, exhibits and reference material.<sup>25</sup> The trial record runs to over 70,000 pages. The judgment itself is some 274 pages.

[32] The Judge structured his judgment around the pleaded inherent defects and then addressed issues of testing done on model walls and the test properties before addressing the relevant legal principles. He reached the following key findings:

(a) As a matter of law, “a cladding manufacturer and seller owed a duty of care to the owner for the time being of a house reliant on such cladding for its weatherproof qualities”.<sup>26</sup> That duty is recognised as including a duty to warn consumers of any potential risks.<sup>27</sup>

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<sup>23</sup> Substantive judgment, above n 5, at [664].

<sup>24</sup> At [887].

<sup>25</sup> At [9].

<sup>26</sup> At [664] and [678].

<sup>27</sup> At [745]–[747], citing *Carter Holt Harvey Ltd v Minister of Education* [2015] NZCA 321 [*Carter Holt Harvey* (CA)] at [129]–[130].

- (b) On the evidence, James Hardie did not however breach that duty because:
- (i) Harditex (both the system and the cladding) was a proven and tested product fit for the purpose of ensuring a durable, weathertight building.<sup>28</sup>
  - (ii) The testing undertaken by James Hardie was of a standard expected of a reasonable manufacturer.<sup>29</sup>
  - (iii) The system was not prone to rot and decay, and therefore representations to that effect were true.<sup>30</sup>
  - (iv) The system could be installed safely by a reasonably competent builder and was therefore buildable.<sup>31</sup>
  - (v) The JHTIs' installation instructions were adequate for reasonable and competent builders.<sup>32</sup>
  - (vi) There were no known issues with Harditex that gave rise to a need to issue a public warning or to modify the product.<sup>33</sup>
  - (vii) The fact the product was capable of improvement did not mean it was unfit for purpose.<sup>34</sup>
  - (viii) None of the test properties were examples of the alleged inherent flaws in action. What they exemplified was poor workmanship.<sup>35</sup>

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<sup>28</sup> Substantive judgment, above n 5, at [687], [689], [866] and [893]–[899].

<sup>29</sup> At [688], [866] and [893]–[899].

<sup>30</sup> At [26], [221] and [864].

<sup>31</sup> At [689].

<sup>32</sup> At [740]–[744] and [879].

<sup>33</sup> At [832].

<sup>34</sup> At [826].

<sup>35</sup> At [549]–[550].

- (c) For the purposes of the Fair Trading Act, the internal conduct of a corporation involving the design and testing of goods without more is not conduct “in trade”.<sup>36</sup>
- (d) The target audience of the JHTIs were professional designers and builders capable of reading a JHTI as a whole and bringing to the exercise pre-existing knowledge of building practice.<sup>37</sup>
- (e) The statements in the JHTIs did not constitute false or misleading conduct for the purposes of ss 9 and 10 of the Fair Trading Act.<sup>38</sup>
- (f) There was no evidence that either the representative plaintiffs or their builders had relied on the JHTIs.<sup>39</sup>

[33] As mentioned, the homeowners now challenge all of the Judge’s key factual findings. They say the findings were contrary to the weight of the evidence and to a significant extent the result of the Judge’s erroneous view that building science contained in published literature should be preferred to “empirical evidence” based on test results and the examination of damaged buildings by experts.

[34] The homeowners also challenge the integrity of the High Court hearing due to the late discovery of certain documents concerning testing undertaken by James Hardie at a site in Queensland (the Allunga documents). The late discovery in combination with the Judge’s refusal to allow the recall of a James Hardie witness for cross-examination about those documents is said to mean the trial may have miscarried.

[35] Before turning to assess the various grounds of the homeowners’ appeal, it is logical to first address the legal question raised by James Hardie as to whether the Judge was correct to find that James Hardie owed a duty of care to the homeowners.

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<sup>36</sup> At [844]; and Fair Trading Act 1986, ss 9 and 10.

<sup>37</sup> Substantive judgment, above n 5, at [846]–[848].

<sup>38</sup> At [887].

<sup>39</sup> At [850].

## Did James Hardie owe a duty of care?

[36] This case represents the first time that a New Zealand court has held following trial that the manufacturer of a building product intended to be a key component in a building owes a tortious duty of care to the building's owner.

[37] The Judge formulated the duty issue as being whether:<sup>40</sup>

James Hardie as a cladding manufacturer and seller owed a duty of care to the owner for the time being of a house reliant on such cladding for its weatherproof qualities.

[38] Having found that such a duty did exist, he then addressed its application in relation to three areas, namely: the product and the system; the JHTIs; and the duty to warn.<sup>41</sup> These correspond to the matters pleaded in the statement of claim summarised above at [27].

[39] In holding that a duty was owed, the Judge relied on the 2016 Supreme Court decision of *Carter Holt Harvey Ltd v Minister of Education* where, in the context of a strike-out application, the Court unanimously held it was arguable that the manufacturer of a cladding sheet and system did owe such a duty.<sup>42</sup>

[40] The Supreme Court reached that conclusion after conducting the well-established two-stage proximity and policy inquiry that a court is required to undertake when deciding whether it would be just, fair and reasonable to recognise a novel duty of care.<sup>43</sup> At the first stage, a court is concerned with everything bearing upon the relationship between the parties: whether the claimed harm was a reasonably foreseeable consequence of the alleged wrongdoer's actions;<sup>44</sup> and the degree of

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<sup>40</sup> At [664].

<sup>41</sup> At [686].

<sup>42</sup> At [678(a)]; and *Carter Holt Harvey Ltd v Minister of Education* [2016] NZSC 95, [2017] 1 NZLR 78 [*Carter Holt Harvey* (SC)].

<sup>43</sup> *Carter Holt Harvey* (SC), above n 42, at [14]–[72]. Richardson J sets out the two-stage inquiry in *South Pacific Manufacturing Co Ltd v New Zealand Security Consultants & Investigations Ltd* [1992] 2 NZLR 282 (CA) at 305–306. See also *North Shore City Council v Attorney-General* [2012] NZSC 49, [2012] 3 NZLR 341 at [157]–[160] per Blanchard, McGrath and William Young JJ.

<sup>44</sup> In novel cases, it has been said that foreseeability is at best a screening mechanism to exclude claims which must obviously fail because no reasonable person in the shoes of the wrongdoer would have foreseen the loss: see *North Shore City Council v Attorney-General*, above n 43, at [157] per Blanchard, McGrath and William Young JJ.

proximity between the alleged wrongdoer and the claimant. At the second stage, the court considers matters external to the parties, namely the effect imposition of the claimed duty would have on society and the law generally.<sup>45</sup> Resolution of the second stage has been said to depend ultimately on judicial conceptions of desirable policy.<sup>46</sup>

[41] In order to understand the various challenges made by James Hardie to the Judge’s finding of a duty in this case, it is necessary first to provide a brief summary of the relevant legal landscape.

[42] As a result of developments in New Zealand case law beginning in the 1970s, it is now well established that a builder who constructs a defective building may be liable in negligence to a subsequent purchaser of that building for the diminution in value of the building arising from the existence of the defect.<sup>47</sup> Liability is imposed even though the loss suffered by the homeowner (whether measured on the basis of diminution in value or the cost of repairs)<sup>48</sup> is properly categorised as economic loss.<sup>49</sup> The owner is not required to wait until the defect manifests itself in damage to the house or causes health issues but may claim for the cost of what is essentially a pre-emptive repair.<sup>50</sup>

[43] The imposition of tortious liability in those circumstances represented a significant departure from traditional tort law.<sup>51</sup> Previously, any tortious liability on the part of a negligent builder had been limited to the creation of a defect which caused

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<sup>45</sup> *South Pacific Manufacturing Co Ltd*, above n 43, at 305–306; and *Carter Holt Harvey* (SC), above n 42, at [14].

<sup>46</sup> *Smith v Fonterra* [2021] NZCA 552, [2022] 2 NZLR 284 at [96], citing Stephen Todd (ed) *Todd on Torts* (8th ed, Thomson Reuters, Wellington, 2019) at [5.4], now found in Stephen Todd (ed) *Todd on Torts* (9th ed, Thomson Reuters, Wellington, 2023) at [4.4].

<sup>47</sup> See for example *Bowen v Paramount Builders (Hamilton) Ltd* [1977] 1 NZLR 394 (CA) at 417 per Woodhouse J, at 422 per Cooke J, and at 406 per Richmond P (dissenting on the facts); and *Johnson v Mount Albert Borough* [1977] 2 NZLR 530 (SC) [*Johnson v Mount Albert Borough* (SC)] at 532; aff’d *Mount Albert Borough v Johnson* [1979] 2 NZLR 234 (CA).

<sup>48</sup> See *Leisure Investments NZ Ltd Partnership v Grace* [2023] NZCA 89, [2023] 2 NZLR 724 at [184] for a discussion on how loss is to be measured.

<sup>49</sup> *Invercargill City Council v Hamlin* [1996] 1 NZLR 513 (PC) [*Hamlin* (PC)] at 526.

<sup>50</sup> *Body Corporate No 207624 v North Shore City Council* [2012] NZSC 83, [2013] 2 NZLR 297 [*Spencer on Byron*] at [45], quoted in *Carter Holt Harvey* (SC), above n 42, at [66].

<sup>51</sup> There was always, of course, contractual liability to the original owner for whom the defective house had been built: see for example *Bowen v Paramount Builders (Hamilton) Ltd*, above n 47, at 414–415 per Richmond P.



either personal injury or physical damage to property other than the building itself. As Stamp LJ put it in *Dutton v Bognor Regis Urban District Council*, the law was that:<sup>52</sup>

I have a duty not carelessly to put out a dangerous thing which may cause damage to one who may purchase it; but the duty does not extend to putting out carelessly a defective or useless or valueless thing.

[44] The modern tort law about defective buildings, which began in the 1970s,<sup>53</sup> has also entailed the imposition of negligence liability on other participants in the construction process such as engineers and architects as well as the regulatory authorities responsible for inspecting and approving the building work.<sup>54</sup>

[45] This line of authority has inevitably raised questions about whether the court should also recognise a duty of care on the part of the manufacturer of an inherently defective chattel or product. In the 1976 Court of Appeal decision of *Bowen v Paramount Builders*, Cooke J commented that he:<sup>55</sup>

[Did] not see why the law of tort should necessarily stop short of recognising a duty not to put out carelessly a defective thing, nor any reason compelling the courts to withhold relief in tort from a plaintiff misled by the appearance of the thing into paying too much for it.

[46] That approach was not, however, adopted in the 1999 High Court decision of *NZ Food Group (1992) Ltd v Amcor Trading (NZ) Ltd*.<sup>56</sup> It concerned the supply of vegetable fat that was not of merchantable quality. It was supplied to a processor who blended it to make a chocolate substitute which in turn was used by a confectionary manufacturer. The confectionary products were contaminated and were subsequently recalled. In the High Court, William Young J said it was “far from clear” whether either the supplier or the processor owed a tort duty of care to the confectionary manufacturer in addition to any contractual obligations there might be.<sup>57</sup> The Judge characterised any negligence claim by the confectioner against the supplier as likely being one about a product (the vegetable fat) that was less valuable than it should have

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<sup>52</sup> *Dutton v Bognor Regis Urban District Council* [1972] 1 QB 373 (CA) at 415.

<sup>53</sup> See *Bowen v Paramount Builders (Hamilton) Ltd*, above n 47, which was decided in 1977.

<sup>54</sup> See for example *Morton v Douglas Homes Ltd* [1984] 2 NZLR 548 (HC); *Young v Tomlinson* [1979] 2 NZLR 441 (SC); and *Johnson v Mount Albert Borough* (SC), above n 47. And see *Spencer on Byron*, above n 50, at [193].

<sup>55</sup> *Bowen v Paramount Builders (Hamilton) Ltd*, above n 47, at 423.

<sup>56</sup> *NZ Food Group (1992) Ltd v Amcor Trading (NZ) Ltd* (1999) 9 TCLR 184 (HC).

<sup>57</sup> At 192 and 194.

been and which rendered less valuable other products with which it was blended. In those circumstances it would have been a case of economic loss meaning no duty of care was owed.<sup>58</sup>

[47] That decision was not of course a case about manufacturers of building materials. But it is relied on by James Hardie to support its key proposition that the Judge’s ruling in this case represents too radical a change to product liability law. It points out that New Zealand law has never before recognised that a manufacturer selling a defective (but not dangerous) product has a general duty to avoid economic loss to a third party. And that is said to be for a good reason. According to James Hardie, the “broad and unqualified duty” upheld in this case will have the effect of conferring an “indefinitely transmissible warranty of quality” on homeowners,<sup>59</sup> raising the spectre of indeterminate liability.

[48] James Hardie says further that the position of manufacturers of building products is not analogous to that of builders and building inspectors and accordingly the Judge was wrong to perceive the imposition of a duty in this case as a natural extension of existing case law about latent defects in buildings. It contends too that the Judge erred in effectively treating *Carter Holt Harvey* as a binding precedent and overlooked the provisional nature of the Supreme Court’s ruling.<sup>60</sup>

[49] We agree the Supreme Court ruling was provisional. It only held that the claimed duty was “arguable” and it did not purport to finally resolve the legal/policy issues which were expressly left for trial.<sup>61</sup> As it happened, the trial never eventuated.

[50] However, while we agree the Supreme Court’s decision was provisional, we do not agree the Judge treated it as effectively binding. That is not a fair reading of the judgment. We would also point out that the evidence in this case was directed at breach and did not address policy/proximity issues — such as the insurance implications of recognising a duty or contractual allocation of risks. It is therefore

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<sup>58</sup> At 192–193.

<sup>59</sup> Citing Stephen Todd “Leaky Buildings: Limitation Issues and Successive Owners” in Steve Alexander and others *The Leaky Building Crisis: Understanding the Issues* (Brookers, Wellington, 2011) 123 at 125.

<sup>60</sup> *Carter Holt Harvey* (SC), above n 42.

<sup>61</sup> At [72].

difficult to see how the trial evidence has impacted to any significant extent on the cogency of the Supreme Court's analysis.

[51] We are supported in that conclusion after undertaking the two-stage duty inquiry ourselves in light of the evidence and having regard to the legal submissions made to us by James Hardie.

[52] First, foreseeability of harm is beyond argument. A manufacturer of cladding sheets and systems promoted for use as exterior wall cladding must be taken to have foreseen that its cladding products would be used in buildings. Further, such a manufacturer must also be taken to have foreseen that if those products were defective (due to not being weathertight) this could lead to a weakening and rotting of component structures, the development of mould (with its attendant health risks), and reduced durability.

[53] While foreseeability of harm is accepted, proximity is however very much disputed. In relation to proximity, James Hardie contends that the relationship between a homeowner and a manufacturer is not in the same category as the close and direct relationship between a homeowner and a builder. Also missing, in James Hardie's submission, are the associated concepts of control and responsibility, which are submitted to underpin the liability of builders and local authorities.

[54] Those fundamental concepts are said to be absent in the case of the manufacturer because the functionality of the product is dependent upon the separate work of builders and designers — work that the manufacturer is unable to control. The builders and the designers are the parties who exercise control over and assume responsibility for the completed building as a whole. Likewise, the work of the building inspector is also directed to the proper completion of the finished dwelling as a whole. In addition, in the case of building inspectors, there are issues of community expectations and reliance in play, factors which again are absent in the case of a manufacturer.

[55] Developing this central submission, counsel for James Hardie, Mr Hodder KC, further submitted that the different roles and expectations of manufacturers as

compared to builders and building inspectors are reflected in the Building Act 2004 and its predecessor the Building Act 1991. Those Acts are focused on building work and building control.<sup>62</sup>

[56] Mr Hodder noted that while designers, builders and building consent authorities are expressly referenced in the purpose section of the Building Act 2004 there is no mention of manufacturers.<sup>63</sup> Section 3(b) of the Building Act 2004 states that one of its purposes is “to promote the accountability of owners, designers, builders, and building consent authorities who have responsibilities for ensuring that building work complies with the building code”. Also, unlike builders and building inspectors, manufacturers do not undertake “building work” as defined by the Act.<sup>64</sup> Building products are instead regulated by an appraisal process.<sup>65</sup>

[57] The fact manufacturers are not engaged in “building work” under the Building Act, has the further consequence that, unlike others who have been held liable for defective buildings, they will not have the protection of the Act’s longstop limitation period.<sup>66</sup> That, in turn, is said to create unfair commercial uncertainty and was another factor against recognising a tort duty.

[58] Mr Hodder acknowledged the existence of s 14G of the Building Act 2004, which does impose a direct statutory obligation on manufacturers and suppliers of building products. Section 14G provides:

**14G Responsibilities of product manufacturer or supplier**

- (1) In subsection (2), **product manufacturer or supplier** means a person who manufactures or supplies a building product and who states that the product will, if installed in accordance with the technical data, plans, specifications, and advice prescribed by the manufacturer, comply with the relevant provisions of the building code.
- (2) A product manufacturer or supplier is responsible for ensuring that the product will, if installed in accordance with the technical data, plans, specifications, and advice prescribed by the manufacturer, comply with the relevant provisions of the building code.

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<sup>62</sup> Building Act 1991, long title. See also Building Act 2004, s 3.

<sup>63</sup> Building Act 2004, s 3(b).

<sup>64</sup> Section 7.

<sup>65</sup> Sections 268–272.

<sup>66</sup> Section 393.

- (3) A person who supplies a building product is responsible for ensuring that the person complies with Part 4B (building product information requirements).

[59] However, Mr Hodder pointed out that this provision only came into force in 2013 and therefore did not apply during the period that Harditex was on the market.<sup>67</sup> It was a specific change in response to the leaky buildings crisis,<sup>68</sup> and thus, he contended, not a situation of statutory obligations being imposed to reflect existing tortious liability. Mr Hodder therefore drew support from the enactment of s 14G rather than the other way round.

[60] As well as inconsistency with the Building Act, Mr Hodder argued that a tortious action would cut across the carefully designed legislative regimes of the Consumer Guarantees Act 1993 and the Fair Trading Act to which manufacturers and suppliers are subject. In his submission, given the protection afforded consumers by those statutes, they should be left to cover the field so to avoid the risk of doctrinal incoherence and indeterminate liability likely to flow from the Judge's ruling.

[61] In our view, the objections raised by James Hardie are significantly overstated. As the outcome of this proceeding graphically illustrates, the imposition of a duty of care on a manufacturer does not translate to guaranteeing the workmanship of a builder. It is therefore wrong in our view for James Hardie to call in aid its inability to control the builder. The homeowners' claim relates only to matters within the control of James Hardie. Unlike a claim against a building inspector, the claim here does not seek to make the manufacturer liable for a latent defect negligently created by another.

[62] Many of James Hardie's concerns are also based on factual scenarios which are *not* this case. This was not a case about building products generally, regardless of their significance to the building. Nor was it a case about mere defects of quality. It was a case about a building product that forms a key component in a building and alleged latent defects which could cause or had in fact caused significant damage,

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<sup>67</sup> Building Amendment Act 2013, ss 2 and 7.

<sup>68</sup> In particular the Hunn Report: Don Hunn, Ian Bond and David Kernohan *Report of the Overview Group on the Weathertightness of Buildings to the Building Industry Authority* (Building Industry Authority, 31 August 2002).

including structural damage and damage which posed a health risk. Whether the duty can extend to other types of building product and/or defects will, in accordance with the common law tradition, await future cases.

[63] We observe too that while the relationship between the builder and the first owner of the building is more direct and proximate than that between manufacturer and owner, it is important to bear in mind that the builder's duty of care is not limited to the first owner with whom the builder will usually be in a contractual relationship. It extends to subsequent purchasers.<sup>69</sup>

[64] For completeness, we record that while in some novel duty cases the vulnerability, or lack thereof, of the claimants may be a relevant factor, it did not feature in James Hardie's submissions. That was appropriate given that in *Carter Holt Harvey*, the Supreme Court held that the vulnerability factor did not have much significance, and, to the extent that it did, was not a factor militating against the finding of a duty of care.<sup>70</sup> As the Court pointed out, in a case involving latent defects which are only able to be identified with the assistance of specialists, the building owner cannot be expected to know of the defects and take steps to protect themselves against them.<sup>71</sup>

[65] As regards the arguments about the statutory framework, similar arguments were also raised in *Carter Holt Harvey* and rejected by the Supreme Court.<sup>72</sup>

[66] In relation to the Building Act, the Supreme Court accepted that as a manufacturer and supplier of building materials, Carter Holt Harvey was not under any direct statutory duty at the time it supplied its cladding sheets and systems.<sup>73</sup> It also accepted that the absence of any such obligation meant that one factor which contributed to the finding in *Spencer on Byron*, that councils owed a duty of care to

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<sup>69</sup> See at [42] above.

<sup>70</sup> *Carter Holt Harvey* (SC), above n 42, at [55].

<sup>71</sup> At [55].

<sup>72</sup> At [38]–[40].

<sup>73</sup> At [38].

the owners of commercial buildings, was not present.<sup>74</sup> However, the Court went on to say it did not view that as a significant distinguishing factor because:<sup>75</sup>

[40] ... Although the 2004 Act and the building code do not apply to manufacturers, the cladding sheets and cladding system produced by [Carter Holt Harvey] are “building elements” to which certain requirements of the building code apply. Even though those requirements are not directly imposed on manufacturers, they define the standards manufacturers are required to meet in products, so that when they are used in a building the building will be code compliant. In addition, the cladding sheets are building materials in respect of which the powers in ss 20 and 26 of the 2004 Act can be exercised. In light of these factors, the duty of care sought to be imposed on [Carter Holt Harvey] is, arguably, no greater than that of which it would already have been aware because of the building code requirements applying to building elements and the provisions of the 2004 Act applying to building materials.

[67] James Hardie has not advanced any submissions or pointed to any evidence that suggests the last sentence in the above passage has been shown to be an incorrect assumption.

[68] The Supreme Court also rejected an argument that because the Consumer Guarantees Act provides remedies for defective goods and services, the Court should be cautious about imposing more onerous duties under the law of tort and altering the balance struck by the legislation. The Court did not see the existence of statutory protections as precluding liability in tort.<sup>76</sup>

[69] We acknowledge that the Supreme Court went on to state that because the proceeding before them included a claim under the Consumer Guarantees Act, the significance of liability under that Act (if any) on the negligence claim could be evaluated at trial.<sup>77</sup> However, the present case did not include a claim under the Consumer Guarantees Act and there was no relevant evidence adduced bearing on that issue.

[70] Importantly too, in a later section of its judgment dealing with policy factors, the Supreme Court unequivocally and emphatically rejected the suggestion that a tortious duty of care standing alongside the statutory warranties in the Building Act

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<sup>74</sup> At [40], referring to *Spencer on Byron*, above n 50.

<sup>75</sup> *Carter Holt Harvey* (SC), above n 42.

<sup>76</sup> At [41].

<sup>77</sup> At [41].

and the guarantees in the Consumer Guarantees Act was contrary to Parliament's intention and would make the law incoherent. The Court said it did "not see any such indication" of an intention on the part of the legislature to exclude tort law.<sup>78</sup>

[71] Finally, we note that although the Supreme Court held that Carter Holt Harvey was not covered by the longstop limitation provision of the Building Act,<sup>79</sup> there is no suggestion in the judgment that this was considered an impediment to recognising a duty or even a countervailing factor to be taken into account.

[72] Drawing all these threads together, we are satisfied the Judge did not err in holding that James Hardie owed a duty of care in tort to the homeowners. That conclusion was a natural extension of existing authority and in accordance with the Supreme Court decision in *Carter Holt Harvey*.

[73] If, contrary to his primary submission, we were to find there to be a duty, Mr Hodder asked us to articulate the limits of the duty in a clear and relatively precise manner. He contended that the Judge had paid insufficient attention to the scope of the duty and had effectively dealt with issues about the scope of the duty as breach issues, whereas recent case law emphasises the importance of considering scope of duty as a distinct analytical step.<sup>80</sup>

[74] Mr Hodder acknowledged that had the Judge embarked on a separate scope of duty inquiry, it would not have made any difference to the outcome in this particular case. However, he contended that for future cases it was of crucial importance for the limits of the duty to be stated with precision. Mr Hodder further submitted there were two factors critical to understanding the limits of a manufacturer's duty of care in the building context. The first was the inability to control the conduct of those involved in the installation of the product and the second was the economic nature of the claimants' alleged loss.

[75] Having regard to these factors, Mr Hodder submitted that the duty of care should be articulated along the following lines:

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<sup>78</sup> At [62].

<sup>79</sup> At [129].

<sup>80</sup> Citing *Meadows v Khan* [2021] UKSC 21, [2021] AC 852 at [33]–[41].



As a manufacturer of Harditex cladding components (being the Harditex boards and related components manufactured or supplied by James Hardie) and designer of the Harditex system, James Hardie owed a duty to owners of relevant residential buildings to use reasonable care and skill to ensure that Harditex cladding components were fit for their intended purpose, namely use as building-standard-compliant components in a residential building cladding system constructed in accordance with manufacturer technical specifications and advice; applicable building standards; and good building practice.

[76] We accept that a duty of care cannot be formulated in the abstract and must be articulated in relation to the kind of harm to be avoided and the class of person to whom the duty is owed.<sup>81</sup> That may or may not necessitate a scope of duty inquiry as a separate analytical step. In the circumstances of this case, we are not persuaded a separate scope of duty inquiry was either necessary or helpful. Further, for reasons we have already traversed, this was not a claim seeking to make James Hardie liable for a defect created by someone else, but defects said to have been created by James Hardie itself.

[77] We consider Mr Hodder's suggested formulation of the duty to be unnecessarily restrictive and wordy. We consider the duty is more appropriately and simply formulated in the following general terms: the manufacturer of a cladding product intended for use as a key component in the construction of a weathertight building owes a duty of care to an owner of the building to exercise reasonable care and skill in the design, manufacture and supply of the product so as to prevent loss from damage to the building caused by water ingress.

[78] As will be apparent, we have not limited the duty to residential homes. That distinction is no longer made in the case of builders and local authorities for reasons that we consider are equally applicable to manufacturers.<sup>82</sup> Further, the buildings at issue in *Carter Holt Harvey* were not residential homes but schools. Yet that was not seen as an impediment to recognising a duty.<sup>83</sup>

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<sup>81</sup> *Attorney-General v Strathboss Kiwifruit Ltd* [2020] NZCA 98, [2020] 3 NZLR 247 at [193].

<sup>82</sup> *Spencer on Byron*, above n 50, at [214]–[216] per McGrath and Chambers JJ, at [26] per Tipping J and at [22] per Elias CJ, applied in *Southland Indoor Leisure Centre Charitable Trust v Invercargill City Council* [2017] NZSC 190, [2018] 1 NZLR 278.

<sup>83</sup> *Carter Holt Harvey (SC)*, above n 42.

[79] As will also be apparent we have not included the JHTIs in this formulation. That is because we consider that, correctly analysed, any negligence claim regarding alleged errors and deficiencies in the technical instructions properly falls within the realm of negligent misstatement. The prerequisites of liability for negligent misstatement are well established and do not raise any novel duty issue.<sup>84</sup>

[80] Mr Hodder accepted that, in principle, if there were negligent misstatements in the JHTIs then James Hardie could potentially be liable. However, because of the need to establish reliance in negligent misstatement claims, any liability would be limited to builders.<sup>85</sup>

[81] The Judge did not engage in a *Hedley Byrne/Caparo* analysis.<sup>86</sup> Instead he appears to have treated the claim as one of carelessly failing to provide appropriate assistance so as to ensure the product would be installed correctly and safely. Given our finding that none of the JHTIs contained actionable misleading and untrue statements,<sup>87</sup> the same outcome is reached regardless of which approach is adopted.

[82] Finally, we agree with the Judge that a duty to warn is best viewed as an aspect of the negligence claim and not as a stand-alone cause of action.<sup>88</sup> A manufacturer who was aware of deficiencies in its product that rendered it unfit for its intended purpose and likely to cause harm but then did not remove that product from the market or warn of the risk of harm would clearly be negligent.

[83] Having confirmed the existence of a duty of care, we now turn to the critical issue of whether, on the facts, the duty was breached.

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<sup>84</sup> See *Hedley Byrne & Co Ltd v Heller & Partners Ltd* [1964] AC 465 (HL); and *Caparo Industries Plc v Dickman* [1990] 2 AC 605 (HL).

<sup>85</sup> Citing *Henderson v Merrett Syndicates Ltd* [1995] 2 AC 145 (HL) at 181 per Lord Goff; *Boyd Knight v Purdue* [1999] 2 NZLR 278 (CA) at [47] and [54]–[59] per Blanchard J; and *McNamara v Auckland City Council* [2012] NZSC 34, [2012] 3 NZLR 701 at [168] per Blanchard, McGrath and William Young JJ.

<sup>86</sup> *Hedley Byrne & Co Ltd v Heller & Partners Ltd*, above n 84; and *Caparo Industries Plc v Dickman*, above n 84.

<sup>87</sup> See below at [428]–[438].

<sup>88</sup> Substantive judgment, above n 5, at [745]–[747], citing *Carter Holt Harvey* (CA), above n 27, at [129]–[130]; and *Carter Holt Harvey* (SC), above n 42, at [77]. See also *Andrews Property Services Ltd v Body Corporate 160361* [2016] NZCA 644, [2017] 2 NZLR 722 at [98]–[105].

## **Our general approach to the factual issues**

[84] As indicated, this is an intensely factual appeal involving a very large volume of contested evidential material. The homeowners submitted that we “should not attribute to the Judge a special or superior position to the assessment of the evidence and the findings of fact that he has made”. In so far as that is a submission that we are required to reach our own independent view on the evidence, we agree. However, in undertaking that assessment, it is equally clear as a matter of case law and common sense that we must also be mindful of the advantages enjoyed by the trial Judge.<sup>89</sup> The trial Judge not only saw and heard all the witnesses but also had the advantage of evaluating the evidence as it unfolded over a three-month period. We have therefore approached the analysis of the evidence on that basis.

[85] The majority of the Judge’s factual findings ultimately related to the question of whether Harditex was fit for purpose, the relevant purpose being to ensure a durable weathertight building in accordance with the regulatory building standards. On appeal, Mr Farmer KC, for the homeowners, described this as “the real issue” in the case.

### **Fitness for purpose: moisture management**

[86] It was common ground at trial that the building code does not require all water to be excluded from a wall assembly. What the code does however require is that water be managed so as to avoid undue dampness and/or damage to building elements.<sup>90</sup>

[87] It was also agreed this could be expressed as a rate issue, the issue being the rate of wetting versus the rate of drying and redistribution. The amount of water that enters must not exceed the moisture storage capacity of the components of the wall assembly. That in turn requires adequate resistance to water ingress to reduce the rate of wetting as well as adequate management of any moisture which does enter the assembly.

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<sup>89</sup> *Green v Green* [2016] NZCA 486, [2017] 2 NZLR 321 at [31]; *Rae v International Insurance Brokers (Nelson Marlborough) Ltd* [1998] 3 NZLR 190 (CA) at 199 per Thomas J; and *Austin, Nichols & Co Inc v Stichting Lodestar* [2007] NZSC 103, [2008] 2 NZLR 141 at [13].

<sup>90</sup> Building code, cl E2.3.2.

[88] The framework of the discussion about moisture management both in the evidence and the High Court judgment thus centred around the “deflection, drainage, drying [capabilities] and durability” of the Harditex system.<sup>91</sup>

[89] In order to understand that evidence, and the arguments on appeal, it is necessary first to provide a brief and simplified overview of the mechanisms of water ingress and egress.

*Mechanisms of water ingress and egress*

[90] As explained by one of James Hardie’s experts, Dr Lstiburek, there are five primary mechanisms by which liquid water may enter a wall assembly from the outside.

[91] The first two, gravity and momentum, both require a gap in the wall assembly for water to enter and are generally associated with a joint, penetration and/or construction defect. Gravity will cause water running down the face of the cladding to enter the wall assembly if the water entry path also runs downwards. Momentum describes the mechanism of water ingress where the water hits the wall at an angle or splashes against it or against a gap.

[92] The third mechanism is surface tension which may carry water horizontally into a gap in the cladding. The fourth is wind pressure which can result in water being forced through even very small gaps in the cladding when the pressure at the outer face of the cladding is greater than the pressure at the inner face.

[93] The fifth mechanism, which featured large in the case, is capillary action. From a water ingress perspective, capillary action operates in two ways. It can draw water into narrow gaps between two surfaces (for example the gap between the back of a cladding sheet and a flashing upstand) or it can draw in liquid water through the pores of the cladding itself. Thus, unlike the other mechanisms, it is not necessarily dependent on a gap in the cladding. The latter form of capillary action is called “wicking” — a term that appears frequently in the evidence.

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<sup>91</sup> Substantive judgment, above n 5, at [23].

[94] The smaller the pore, the greater the capillary force. Both concrete and wood are porous, but the distance water will travel through concrete is much greater than wood because the pores in concrete are so small.

[95] The most common building techniques used to minimise or eliminate capillary action through building materials are to paint the building material so as to block the pores or to use sealant to seal the relevant gaps.

[96] In relation to water that has migrated inside a wall assembly, the two principal mechanisms by which water escapes from a wall assembly are drainage and drying. We pause here to signal that in order to understand the competing views, it is important to distinguish between water that is inside the wall assembly but has only made its way to the back face of the cladding and water that has gone further.

### *Deflection*

[97] The less water that enters the wall assembly, obviously, the better. In terms of deflection, the primary water barrier in the Harditex system was the exterior surface of the fibre cement sheets. It was common ground among the expert witnesses that if coated the sheets would deflect liquid water.

[98] It was common ground too that the building paper would also operate as a secondary, albeit imperfect, water barrier — imperfect chiefly because of nail holes.<sup>92</sup>

[99] The building wrap was said to also assist in distributing any water that penetrates the cladding over a greater area of the wall so that the water is not concentrated in a single spot. That in turn means that although a consequent rise in moisture content of the timber will affect a greater area, it will be able to dry more easily.

[100] Where the experts principally diverged was about other functions building wrap might perform in terms of moisture management. According to the James Hardie

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<sup>92</sup> The homeowners also contend building paper is imperfect because it will degrade if exposed to prolonged moisture.

experts, it performed more than just deflection and was “key to the behaviour of the water in a wall”.

[101] As they explained it, that was because building wrap is not only hydrophobic (closed to liquid water) but also vapour permeable (open to water vapour). Therefore, unless there are gaps or holes in the wrap, any liquid water that penetrates past the cladding can only pass through the building wrap in vapour form. This was said to significantly slow the passage of water from the outside to the inside of the building wrap, making it more likely that the water will be disposed of by drainage and drying before it accesses the timber framing. Further, any vapour that does diffuse through the wrap and into the timber framing will do so at approximately the same rate as it is able to diffuse out of the timber (dry).

[102] For reasons we discuss in the next section, building wrap was also considered to play a direct role in drainage.

### *Drainage*

[103] One of the main areas of controversy between the parties was the system’s drainage capacity.

[104] The Harditex system did not have a designed cavity or other drainage facility behind the cladding, as is now mandatory.<sup>93</sup> However, according to the experts called by James Hardie, there were nevertheless drainage paths. Those drainage paths were said to be the small gaps that inevitably, that is to say always, exist between the back of the Harditex sheets and the front of the building wrap. Those gaps, which made drainage unavoidable, were said to be the result of the fundamental characteristics of the materials used in the system including the lapping of the building paper within which gravity will operate.

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<sup>93</sup> Although there is some uncertainty in the evidence as to exactly when cavities became mandatory for fibre cement cladding systems, the general consensus seems to be that it was July 2005: see Department of Building and Housing *Approved Document for New Zealand Building Code External Moisture Clause E2* (3rd ed, amendment 1, 1 July 2005).

[105] As the Judge acknowledged, at first blush this suggestion might seem surprising given the system required the sheets to be tightly nailed to the framing.<sup>94</sup> However, according to the James Hardie experts, the clamping effect can never be uniform and across the surface of the wrap there was a large surface not held to the back of the sheet by a nail. These experts further relied on the fact a timber frame is never uniform and, therefore, gaps are also created by the timber variations. Where the water encounters a clamp, it works its way around the clamp until gravity asserts itself. In short, notwithstanding the clamping effect, drainage still occurs.

[106] The experts who propounded this drainage by “small gaps” analysis were Dr Lstiburek and another James Hardie witness, Dr Straube. Both were internationally recognised as experts on building failures and weathertightness in particular.

[107] Dr Lstiburek was described by the Judge as “an excellent witness” and “pre-eminent in the relevant fields”.<sup>95</sup> He had some 38 years’ experience as a forensic engineer in building failures and was the author of numerous publications, several of which had won awards. He was a consultant to a large number of major manufacturers of building products and had been called on to assist with major leaky buildings crises that occurred in North America.

[108] Dr Straube holds a doctorate in civil engineering which focussed on moisture control in enclosure walls, a topic which over a 30-year period had become his “life[’s] work”.<sup>96</sup> During those 30 years, he had undertaken extensive laboratory work as well as consultancy work with government agencies and major product manufacturers, being involved in projects throughout the world.

[109] While the experts called by the appellants accepted that drainage in small gaps can occur, they pointed out the lack of certainty as to where the inconsistencies will occur within the frame. The homeowners’ main expert on this point, Mr Hazleden, was particularly critical of the fact that drainage by “small gaps” was not a design

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<sup>94</sup> Substantive judgment, above n 5, at [54].

<sup>95</sup> At [47] and [125].

<sup>96</sup> At [48].

feature of Harditex. He stressed that a properly designed system should have an intentional drainage path, not an accidental or fortuitous one.

[110] In accepting the evidence of Dr Straube and Dr Lstiburek, the Judge said he found the “small gaps” scientific literature convincing.<sup>97</sup> This included what the Judge described as “numerous articles and research reports”.<sup>98</sup> He concluded that although there would not be as much drainage as there would be with an intentionally designed cavity, drainage nevertheless happened.<sup>99</sup>

### *Drying*

[111] The Judge acknowledged that the fact drainage does occur did not mean that all water drains away. Some of the moisture will not drain but will be absorbed into the uncoated back of the fibre cement sheet.<sup>100</sup> That raised the issue of whether the Harditex system had sufficient drying capacity.

[112] It was common ground that an uncoated Harditex sheet was absorbent. The dispute was whether that was a good thing or a bad thing, given that only the exposed parts of the sheet were required to be coated. As mentioned, the homeowners contended the absorbency was an inherent defect, being a pathway for moisture transfer from sheet to timber. James Hardie contended the absorbency was an important aspect of the moisture management system because it meant that water was safely absorbed and stored in the Harditex sheet until it left as vapour. That was provided, of course, that the amount of water concerned did not exceed the moisture storage capacity.

[113] In preferring James Hardie’s contentions, the Judge relied on the evidence of Drs Lstiburek and Straube, which he found was supported by building science and computer modelling done for the purpose of the litigation. It showed there was no risk of condensate run-off developing or occurring within the walls. Any moisture within the Harditex system would dry out.<sup>101</sup>

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<sup>97</sup> At [58].

<sup>98</sup> At [59].

<sup>99</sup> At [74].

<sup>100</sup> At [86].

<sup>101</sup> At [97]–[100].



[114] The Judge concluded:<sup>102</sup>

[127] My conclusion is that the Harditex system has not been shown to be conceptually flawed from a moisture management perspective. Rather, the way it manages moisture reflects well-established principles of moisture management. The contrary evidence was not convincing, and it is notable that current software modelling reaches the same conclusion. The evidence did not cause me to believe relevant James Hardie personnel understood all the mechanisms by which the moisture management was achieved, but that it worked and had done so with sheet systems for a long time was understood.

[115] The Judge therefore rejected the existence of inherent defects one and three.<sup>103</sup>

*Arguments on appeal*

[116] Mr Farmer challenged the Judge’s findings regarding the drainage and drying aspects of moisture management on two key grounds.

Erroneous analysis of the expert evidence

[117] The first challenge was that the Judge erred in preferring building science in published literature to empirical evidence based on examination of damaged buildings by experts and litigation-specific testing. As will be apparent from later sections of our judgment, this same criticism is levelled at a number of other findings, counsel for the homeowners even referring at one point of their submissions to the Judge’s “preoccupation” with building science and to him being “blinded” by building science.

[118] The homeowners also contend that generally the Judge did not correctly assess the “value” of their expert witnesses’ evidence and/or expertise, and at the same time overlooked deficiencies in the evidence of the James Hardie witnesses. In short, the Judge was unduly influenced by the James Hardie experts.

[119] We consider the criticisms are unfounded.

[120] In relation to moisture management, where there was a conflict of evidence as between the James Hardie experts — most notably Drs Straube and Lstiburek — and

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<sup>102</sup> Footnote omitted.

<sup>103</sup> Substantive judgment, above n 5, at [128].

the homeowners' experts, we consider the Judge was amply justified in preferring the evidence of the former.

[121] Scientific evidence as to the physical properties of building elements, their capacity to store water, and the principles of physics that govern water transfer in both liquid and vapour form was, in our view, critical. We consider it untenable to argue otherwise and point out that, in contrast to James Hardie, the homeowners did not call any witnesses credentialed as building scientists.

[122] Further, in so far as the suggestion is that Drs Straube and Lstiburek were academics without practical experience in the real world, that is simply not the case as evidenced by their work experience summarised above at [107] and [108]. Further, they were familiar with New Zealand conditions.

[123] It is also in our view wrong to argue, as the homeowners do, that the Judge should not have placed the weight he did on Dr Lstiburek's evidence because of concessions Dr Lstiburek made in cross-examination. Mr Farmer went so far as to suggest that the concessions Dr Lstiburek made in cross-examination established that the system was not fit for purpose. Having reviewed the concessions relied on, we disagree. The concessions did not detract from the central core of Dr Lstiburek's evidence and, if anything, only serve to demonstrate that he was an expert who was not advocating for the party who called him.

[124] The homeowners called several witnesses to give expert evidence on moisture management. Their main witness on the topic was, as discussed above, Mr Hazleden. Mr Hazleden is a Canadian architect. As also already indicated, there was general agreement between him and Drs Lstiburek and Straube about the principles of moisture management and on the moisture management features of the Harditex system. Their key point of difference was the sufficiency of those features.

[125] Although an architect, and not a building scientist as such, Mr Hazleden was, we accept, well qualified to give opinion evidence on moisture management. His specialist area of expertise was in building envelope and weathertightness issues. However, no doubt influenced by his architectural background, his evidence was, as

the Judge put it, presented through a design lens.<sup>104</sup> As the Judge rightly observed, from a design perspective, it is desirable that a system have an in-built overcapacity, but from a litigation viewpoint, that is less important than the issue of whether a product in fact works.<sup>105</sup>

[126] Mr Hazleden did also provide evidence bearing on whether the system worked or not. This however was primarily based on computer modelling work that he had undertaken, and which the Judge found to be unreliable.<sup>106</sup>

[127] The modelling involved identifying the likely level of water penetration of a Harditex wall in Wellington and Auckland and then calculating the likely drying capacity. The results were that the drying capacity was less than the likely wetting.

[128] Dr Straube, who has significant experience in analysis of wall claddings and computer modelling, was highly critical of the assumptions and inputs underlying each of Mr Hazleden's wetting and drying models. Dr Straube also testified there were better models available that are commonly used for the same exercise of predicting or simulating the behaviour of materials within a building enclosure.

[129] Significantly, in his reply evidence, Mr Hazleden did not provide any response to Dr Straube's criticisms of his drying model. Inevitably, and in our view, correctly, the Judge drew the inference that the criticisms were well founded.<sup>107</sup> Further, in our view, it logically follows that if the drying model could not be relied on, then the ultimate conclusion must also be unreliable.<sup>108</sup>

[130] The second expert witness called by the homeowners on moisture management was Ms Hugens. She was an experienced structural engineer, specialising in the analysis of high performance buildings and the thermal and moisture effects on the building envelope.

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<sup>104</sup> At [61].

<sup>105</sup> At [61].

<sup>106</sup> At [62]–[68].

<sup>107</sup> At [64].

<sup>108</sup> At [64].

[131] Ms Hugens gave evidence of computer modelling that she had undertaken on the Harditex system using software developed by one of James Hardie’s witnesses, a Dr Künzel. The software programme, known as Wärme und Feuchte Instationär (WUFI), was one of the better computer models identified in Dr Straube’s evidence. Significantly, with the exception of issues relating to mould growth which we address later, Ms Hugens agreed that any moisture which enters the Harditex wall enclosure will not accumulate but will increase and decrease in volume. She also accepted that moisture within the Harditex system will dry out and that the modelling showed there was no risk of condensate run-off developing or occurring within the walls.

[132] Another witness called by the homeowners who gave evidence about moisture management was Mr Wutzler. Mr Wutzler is a registered building surveyor and remediation specialist with extensive experience and expertise in analysing houses affected by water ingress. However, when it came to issues about building science and the mechanisms of failure, the Judge was, in our view, right to have “considerable reservations” about the scope of Mr Wutzler’s evidence on those points, having regard to his limited formal training and building experience.<sup>109</sup> Dr Lstiburek and Dr Straube, who did have the relevant qualifications and expertise, explained for example that Mr Wutzler’s proposed mechanisms for water entry violated fundamental physics.

[133] Another witness who gave evidence about moisture management on behalf of the homeowners was Mr Lalas, a façade engineer with more than 39 years’ experience, including consultancy work for James Hardie. The Judge found he was not an expert witness on whom reliance should be placed, noting that his evidence reflected inflexibility that was not appropriate for an expert witness,<sup>110</sup> and that:<sup>111</sup>

There were too many aspects where his evidence was based on errors, and on careless misreadings of material; much of his evidence ... was outside his expertise; there was incorrect use of publications, and he made allegations of impropriety about witnesses for the other side that were unfounded and can only be explained by the lack of objectivity that permeated his evidence.

[134] We agree with that assessment.

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<sup>109</sup> At [94].

<sup>110</sup> At [587].

<sup>111</sup> At [582].

## Absence of a proper design

[135] The second appeal challenge to the Judge's findings was that even if drainage did fortuitously occur, the absence of a proper design meant by definition that the system was not fit for purpose. As Mr Farmer put it, how can a drainage system that relies on good luck rather than good management amount to moisture management as required by the building code. In response to a question from us, Mr Farmer confirmed his submission was that the absence of a cavity was fatal to any finding of fitness for purpose. That was so even though cavities only became compulsory in 2005.

[136] We do not accept that submission. In our view, the Judge was right to proceed on the basis that for the purposes of this litigation what mattered is whether the system actually worked to provide a weathertight cladding system. The fact it was capable of improvements did not of itself mean it was unfit or that James Hardie had breached any duty of care.

[137] It follows from all of the above that we are satisfied the homeowners failed to prove that the absorbency of the Harditex sheet was an inherent defect and that the Harditex system did not adequately manage drainage and drying of any water that penetrated or accumulated within the cladding system.

## **Durability: fungal decay**

[138] Inherent defect five alleged that the Harditex sheet was not durable.

[139] Although durability is sometimes regarded as an aspect of moisture management,<sup>112</sup> the Judge dealt with it under its own discrete heading. That was presumably because it related to whether the sheet itself, as distinct from the system, was fit for purpose. In considering durability, the Judge held that a 50-year period of durability was the relevant touchstone because Harditex sheets can be used as a bracing element.<sup>113</sup> That approach is not challenged by either party.

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<sup>112</sup> Durability requires assemblies and materials that are tolerant of moisture.

<sup>113</sup> Substantive judgment, above n 5, at [129].

[140] The main mechanism of failure alleged by the homeowners was that Harditex was susceptible to fungal decay.

[141] It was accepted that mould can grow on an uncoated Harditex sheet and in limited circumstances on a coated surface. The central debate was fungal decay *within* the sheet. At issue were two components of the sheets: cement which made up 28.5 per cent, and cellulose fibres which comprised seven per cent. The cellulose fibres were wood fibres taken from trees<sup>114</sup> that had been through processing which removed food sources for decay fungi from the wood fibre.

[142] The main expert witness called by the homeowners on the topic of fungal decay and rot was Dr Wakeling.<sup>115</sup> He testified that notwithstanding the processing, the cellulose fibres still retained the properties of wood and were actually rendered more vulnerable by the removal of lignin, one of the food sources utilised by decay fungi. In his opinion, given the absorbency of the Harditex sheets, these vulnerable fibres were exposed to moisture, rendering decay inevitable.

[143] James Hardie disputed these contentions and adduced evidence that because the cement mix is highly alkaline, that prevented the sheets from being susceptible to fungal decay. It was conceded that, in service, the alkaline level of the cement will reduce over time, but according to James Hardie's evidence, it would never drop to a level which would allow fungi to survive.

[144] James Hardie's main witness on this topic was Dr John, a professor of building materials at a leading engineering school in Brazil. He has extensive experience in major research projects and investigations relating to the durability of building materials with a particular focus on the durability of cellulose fibre cement. He testified that Dr Wakeling's observation of fungal decay of cellulose fibres in the Harditex sheets was inconsistent with published literature. He also stated that in more than 30 years of studying the durability of cellulose fibres in various types of cement and cement products, he had not seen any evidence of biodeterioration of cellulose

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<sup>114</sup> Most commonly *Pinus radiata* (the Monterey/Radiata/Insignis pine).

<sup>115</sup> For details of Dr Wakeling's credentials see [150].

fibres embedded in fibre cement. He said categorically that in his experience cellulose fibre cement does not rot.

[145] For his part, Dr Wakeling did not accept the alkaline levels would remain sufficiently high to prevent decay.<sup>116</sup> He also opined that in any event, the wood fibres form an interconnecting network within the cement matrix which enables the fungi to migrate from fibre to fibre without engaging with the cement matrix. He said further that he had seen decay fungi within cement fibre and Harditex itself on “numerous” occasions.

[146] The Judge was critical of the evidence given by Dr Wakeling and placed limited weight on it.<sup>117</sup> He preferred the expert evidence adduced by James Hardie which the Judge found was supported by a body of published literature as well as the agreed statements of an expert panel convened for the purposes of the litigation.<sup>118</sup>

[147] On appeal, the homeowners submit the Judge’s analysis of the evidence on fungal decay was deficient and resulted in erroneous conclusions. In particular, it is contended that the Judge:

- (a) was too dismissive of Dr Wakeling’s evidence, given he is a world-leading authority;
- (b) failed to take into account the compelling empirical evidence that Harditex degrades as a result of fungal decay;
- (c) wrongly gave no weight to incriminating statements by James Hardie itself in patent applications;
- (d) erred in his treatment of what were called the Biodet reports;

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<sup>116</sup> Dr Wakeling also appeared to suggest that some fungi survive in very high alkaline environments.

<sup>117</sup> Substantive judgment, above n 5, at [160].

<sup>118</sup> At [171]–[173].

- (e) failed to take internal James Hardie group communications and the Building Research Association of New Zealand (BRANZ) opinions into account;
- (f) wrongly relied on the expert panel's agreed statement;
- (g) failed to take into account or give proper weight to James Hardie's own test results pointing to the capacity of fibre cement sheets to decay;
- (h) overstated the conclusions from the published literature relying on outdated and generalised statements; and
- (i) wrongly dismissed documents called the Allunga documents which had been discovered post-trial and which were entirely consistent with the empirical evidence adduced by the homeowners.

[148] Having closely examined each of the criticisms made by the homeowners, we are not persuaded they are well founded.

*Empirical evidence*

[149] Some of the key empirical evidence relied on was given by Dr Wakeling and a Ms Burnie. Having assessed that evidence ourselves, we share the Judge's misgivings about it and consider he was right to give it only limited weight.

[150] Dr Wakeling is a biodeterioration consultant and wood protection scientist, specialising in the decay of timber in buildings and other wooden structures caused by fungi and other biodeteriogens. He has a doctorate from Waikato University and in addition to his consultancy work has authored several publications and appeared in several cases before the ordinary courts as well as the Weathertight Homes Tribunal.

[151] Unfortunately, despite this impressive background, a feature of Dr Wakeling's evidence was the number of unsupported assertions and a degree of exaggeration.



[152] His explanation for the absence of supporting evidence in his initial brief was that he had not thought he needed to provide support because what he was saying was so fundamental. That explanation was however questionable when to his knowledge there were competing expert views. In relation to the lack of supporting evidence for his claim to have viewed decay on countless occasions in hundreds of samples, he said it was too time consuming to produce quality samples. Further, in response to the literature relied on by James Hardie's experts, Dr Wakeling produced a second brief of evidence citing papers which he said supported his theories. However, contrary to a submission made by Mr Farmer, we consider the Judge was correct to find the papers in question were in large part actually contrary to Dr Wakeling's central thesis.<sup>119</sup>

[153] The Judge's confidence in Dr Wakeling's evidence was understandably shaken as a result of those matters and he was, in our view, entitled to place limited weight on it, including on the purported empirical evidence Dr Wakeling gave of viewing fungal decay in samples.

[154] Ms Burnie is a microbiologist. She gave evidence about observing fungi, including mould, on the surface of some Harditex samples. It was only in her reply evidence, however, that she addressed the more relevant topic of decay within a Harditex sheet by producing images said to show such decay. However, the quality of the images was debatable and, according to the James Hardie experts, if there were mould hyphae present they were plainly stressed, suggesting that the high alkalinity was having the expected effect.

[155] In the same reply evidence, Ms Burnie also stated there was literature supporting her views and those of Dr Wakeling. In cross-examination, it emerged that the article she relied on was an in-house publication of a building consultancy and that Ms Burnie was unaware of contrary published literature which, unlike the publication she cited, had been peer reviewed.

[156] The apparent inability of either of these experts to provide any published literature unequivocally in support of their core opinions is, in our view, telling.

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<sup>119</sup> At [151]–[156].

[157] We would add that despite the homeowners' general submission that empirical evidence is superior to theoretical building science, it is notable that they do not appear to challenge the evidence concerning flexural testing undertaken of 10 Harditex samples, chosen by Mr Wutzler's company (Helfen Ltd) from its storage.<sup>120</sup>

[158] The testing was initially undertaken by one of the homeowners' own experts, a Dr Jia, who is a specialist in construction materials.<sup>121</sup> The methodology he used was patently flawed and there were a number of other shortcomings in his evidence including a failure to have read the full content of the articles he relied on in his evidence. These led the Judge to conclude — rightly in our view — that Dr Jia had not properly recognised the responsibilities that come with being an expert witness.<sup>122</sup>

[159] However, what is more significant for present purposes is that Dr Jia's raw data was reanalysed by Dr John. The latter concluded that even within the weakest sheets there was evidence of significant ongoing contribution to strength by the cellulose fibres, but a breakdown of the cement matrix. The results were thus inconsistent with a substantial weakening of the fibres as a result of fungal decay.

#### *The Biodet reports*

[160] The Biodet reports were three reports commissioned by a Mr Bloxham of James Hardie which examined samples of Harditex taken from properties in Auckland. One report identified fungal growth on the surface of the board. The other two identified the presence of fungi within the sheet at varying depths.

[161] The reports were not produced in evidence by the homeowners nor were they the subject of any analysis or comment by their experts.<sup>123</sup> They were put to two James Hardie experts in cross-examination during two of the last days of evidence.

[162] The Judge found the questioning failed to produce helpful evidence. He stated that the most that could be said was that one of the reports was evidence of fungi

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<sup>120</sup> The samples were taken from three properties, one was a test property and the other two were properties in the wider class.

<sup>121</sup> For further details of Dr Jia's credentials see [217].

<sup>122</sup> Substantive judgment, above n 5, at [216]–[218].

<sup>123</sup> Apart from a reference to them by Mr Wutzler for an uncontroversial proposition.

penetration beyond the surface, but because the issue was not the capacity to penetrate but to survive once having done so, the report did not advance matters.<sup>124</sup>

[163] On appeal, the homeowners say the Judge misunderstood the issue and was accordingly too dismissive of the significance of finding penetration. The report stated that if decay fungi has penetrated the sheet, it has utilised the cellulose fibres resulting in a loss of strength.

[164] The homeowners also point out that the Judge only referred to two of the reports. The report overlooked is said to have been very significant because it found fungal growth throughout the entire depth of a Harditex sheet in pH levels within the range that James Hardie experts opined would prevent fungal growth.

[165] Both of the James Hardie witnesses who were cross-examined about these reports raised concerns about them and the testing methodology. They identified a significant risk of contamination due in particular to the use of a power chisel to remove layers from the sheet. They also pointed out that the quantities of fungi reported within the sheet were very low and that no strength testing was undertaken. That was understandable because the writer of the report was a microbiologist.

[166] Given the concerns raised in cross-examination and the absence of any evidence explaining or supporting the reliability of any of the three reports, we too consider they do not advance matters. Nor do we consider the evidential gap can be filled, as suggested by the homeowners, by drawing an adverse inference against James Hardie for failing to call Mr Bloxham. As submitted on behalf of James Hardie, it could not reasonably be expected to anticipate the significance the homeowners attached to these documents for the first time on the very last days of evidence. The substance of the reports and their reliability had been addressed by the James Hardie experts and, without more, there must be doubt as to what Mr Bloxham could usefully have added.

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<sup>124</sup> Substantive judgment, above n 5, at [166]. James Hardie submits the Judge should not have made even this finding because there was no evidence explaining or supporting the reliability of the results.

*James Hardie internal communications*

[167] There were communications between James Hardie New Zealand and James Hardie's Australian-based Research and Product Development Centre (the Centre) regarding mould growth on James Hardie fibre cement in New Zealand. A letter written in 1989 mentions being "increasingly confronted with serious mould growth problems in New Zealand". The letter gave an example of new Hardiflex<sup>125</sup> being left on damp clay under a house for six months — conditions which induced a very serious black mould growth that came from within the board, seeming to leave it in a non-structural condition because it readily fell apart.

[168] On appeal, the homeowners say the Judge failed to consider this evidence which they contend supported other evidence that Harditex degrades as a result of fungal decay.

[169] However, that is to ignore the contrary evidence of the person who responded to the memorandum, a Mr Cottier. He was a former James Hardie Australia employee who was a product development engineer at the Centre. He testified that he responded to the memorandum with advice that the problem possibly lay with the paint, advice that was supported by subsequent testing in 1990 using painted and unpainted samples of another similar product, Hardiplank.

[170] In light of that evidence, we consider the Judge was entitled to decline to place any weight on the communications.

*BRANZ papers*

[171] BRANZ is an independent organisation that commissions research and provides product testing and consultancy services. Manufacturers of new products and systems can apply for a BRANZ appraisal to determine whether the product or system is fit for purpose and meets building code performance requirements.

[172] A 1986 report commissioned by BRANZ was part of the published body of literature that the Judge found supported James Hardie's position that fibre cement is

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<sup>125</sup> Hardiflex was another James Hardie cladding product.

at very low or no risk of fungal decay.<sup>126</sup> The homeowners contend the Judge was wrong to rely on this 1986 report because it was outdated and no longer reflected either BRANZ's thinking on the susceptibility of fibre cement to fungal decay, or current scientific thinking.

[173] In support of that contention, they pointed to a 1998 BRANZ opinion for another fibre cement cladding product (called Eterpan 430) which stated "significant loss of strength can occur in fibre cement boards when exposed to a fungal decay hazard because the cellulose fibres are consumed by the fungus".<sup>127</sup> The homeowners also relied on a draft BRANZ opinion issued in 2003 relating to another fibre cement cladding product. The draft report referenced the same vulnerabilities but these references were removed, the homeowners say, at the insistence of Mr Cottier.

[174] At trial, these two BRANZ opinions contradicting the published literature on fungal decay in fibre cement relied upon by the James Hardie experts were put to them. Mr Cottier explained that he asked BRANZ to provide test results to justify the statements. BRANZ was unable to do so and therefore it removed the references.

[175] In those circumstances, reliance on the Judge's failure to consider the BRANZ opinions is, in our view, misplaced. So too is the claim that the literature he relied on was outdated.

#### *Statements in patents*

[176] Two patents held in the United States by an entity in the James Hardie group contain statements identifying performance drawbacks of cellulose fibre cement materials which it is said can impact their long-term durability. One of the patents involved a technology treating cellulose fibres with biocide and the other a method for manufacturing fibre cement by filling the cellulose fibres with an insoluble substance. The biocide patent was granted in 2004 and the other, described in evidence as the "loaded fibres" patent, was granted in 2005.

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<sup>126</sup> Substantive judgment, above n 5, at [148]; and W R Sharman and B P Vautier "Accelerated durability testing of autoclaved wood-fibre-reinforced cement-sheet composites" (1986) 3 *Durability of Building Materials* 255 at 273.

<sup>127</sup> Eterpan was not a product manufactured by James Hardie.

[177] The homeowners say that despite the Judge acknowledging the statements in the patents were inconsistent with James Hardie’s position on durability at trial, he downplayed their significance to the point he gave them no weight. In particular, he wrongly characterised the contents of the patents as “just statements” in contradistinction to the studies reported in the scientific literature.<sup>128</sup> They also argue there could be no more compelling evidence than admissions made by James Hardie himself.

[178] This overlooks the evidence of Mr Kuizenga. He is an applied technologist with over 22 years of service working for a James Hardie company in the United States. At the time the patent applications were prepared, lodged and prosecuted, he held the role of intellectual property manager.

[179] In his evidence, he explained that the two patents were the result of research and development projects undertaken in the late 1990s to early 2000s. The aim was to develop new technologies that had the potential to enable more differentiated fibre cement products for use in a wider range of applications — such as on roofs or underground — and then to protect them through very broadly worded patents. The project was not, he testified, prompted by any experience of microbiological attack of its cladding products in service, or concerns about vulnerability to such attacks.

[180] Mr Kuizenga also explained that the samples used for the testing of the patents were not actual products on the market. They were lab-made fibre cement materials used to demonstrate that the technology was sufficiently enabled for the purpose of obtaining the patent. He further stated that the biocide technology has never been used for any of James Hardie’s cladding products because there was no need to do so.<sup>129</sup> The loaded fibres technology has never been used in any of James Hardie’s fibre cement products.

[181] The Judge did not ignore the evidence but, rightly in our view, regarded it as outweighed by the preponderance of the other evidence.

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<sup>128</sup> Substantive judgment, above n 5, at [171], n 37.

<sup>129</sup> It was used in bathrooms in the United States in order to differentiate its backer board from other problematic (non-fibre cement) products in the market, not because of a technical necessity for biocide in the product.

*Expert conference statement*

[182] An expert panel comprising three fibre cement experts was convened for the purposes of the litigation. One of the homeowners' experts, Dr Akers, was on the panel. The panel reached an agreed position which included the following statements:

- Surface colonisation by microorganisms (mould growth) is possible  
...
- There is no evidence that the microorganisms will penetrate in the cement matrix to destroy (feed on) cellulose fibres.

[183] These statements, the Judge said, were consistent with the James Hardie position on durability.<sup>130</sup>

[184] On appeal, the homeowners contend the Judge was wrong to rely on the panel's statements. This is said to be so because none of them were experts in biodeterioration and because the statements were in any event undermined as a result of later concessions made by the James Hardie witnesses as well as testing undertaken at the Allunga site in Tully, Queensland.

[185] In our view, the fact the panel members were experts in fibre cement was in itself a sufficient qualification to justify reliance on their views as to whether fibre cement was susceptible to fungi. As for subsequent concessions, two James Hardie witnesses did, as we have mentioned, later accept the possibility of hyphae within the product on Ms Burnie's images. However, both were at the same time firmly of the view that the fungi were not destroying the fibres. It is therefore, in our view, a stretch to say that the concession precluded the Judge from relying on the agreed statements of the expert panel.

*Allunga documents*

[186] For a seven-year period commencing in 1987, James Hardie carried out exposure tests on uncoated Harditex sheets on a test site located at Allunga in Tully, Queensland. This was said to be the hottest, wettest place in Australia. As summarised by the Judge, the testing involved uncoated sheets left outside on a frame at a preset

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<sup>130</sup> Substantive judgment, above n 5, at [173].

angle completely exposed to the elements. Analysis of how the sheets were affected in this environment was undertaken at various intervals.<sup>131</sup>

[187] At trial, the only available document regarding the Allunga test results was a 10-page extract from a 41-page document dated 15 March 1996 (the Extract). The Extract was discovered by James Hardie New Zealand in a sixth tranche of discovery in May 2019. The document was said to be of uncertain provenance.

[188] One of the 10 pages contained a graph on moisture movement with a footnote notation that Allunga exposed samples showed “alarming property degradation after 5 years (virtually fell apart). Believed to be [a] combination of matrix leaching and fibre decay”.

[189] Counsel for the homeowners cross-examined five James Hardie witnesses on the contents of the Extract.

[190] The hearing concluded in December 2020 with the Judge reserving his decision. In May 2021, before his judgment was delivered, but at a time when it was close to completion, the appellants learnt that some 33 documents relating to the Allunga testing and other matters had been discovered in a separate proceeding also involving Harditex, brought by a group of Auckland homeowners.<sup>132</sup> The defendants in the Auckland proceeding included James Hardie New Zealand and Studorp Ltd as well as different entities not involved in this proceeding and offshore companies in the James Hardie group.

[191] There was no evidence that James Hardie New Zealand was aware of the existence of the new Allunga documents. The documents had been located and discovered in the Auckland proceeding by James Hardie Australia Pty Ltd in early 2021. We were told the discovery in the Auckland proceeding consisted of a digitised base set of approximately two million documents.

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<sup>131</sup> At [187].

<sup>132</sup> The *White* proceeding. This proceeding settled.



[192] Initially, James Hardie New Zealand resisted discovery of the 33 documents on the grounds the documents were not in its control. The homeowners then sought a court order requiring discovery.

[193] In June 2021, James Hardie New Zealand agreed to provide the documents and also agreed to them being admitted into evidence. The homeowners then sought an order to recall Mr Cottier for cross-examination on the new Allunga documents. A hearing about the application for recall was held before the Judge on 23 June 2021.

[194] The Judge declined the application for recall but because the documents had been admitted into evidence, both parties were given an opportunity to file further submissions on their significance.<sup>133</sup>

[195] In his substantive judgment delivered in August 2021, the Judge addressed the new Allunga documents and noted they included content about microbiological attack of the cellulose fibres. However, he considered that in the absence of expert evidence as to the significance of the test results to the use of a coated Harditex sheet on a house in New Zealand, the Court was not in a position to itself read the results and conclude that they overrode the agreed views of the experts at trial and the current state of the literature.<sup>134</sup> The Judge further noted that an equivalent exposure trial of New Hardiflex by BRANZ in Wellington had not exhibited any of the issues noted at Allunga.<sup>135</sup>

[196] The new Allunga documentation did not therefore persuade the Judge to alter his assessment of fungal decay, durability or James Hardie's knowledge.<sup>136</sup>

[197] During the hearing before us, we gained the impression that at the June 2021 hearing the Judge had indicated it would not be necessary for the homeowners to adduce any expert evidence on the significance of the new Allunga documents but that they could safely rely on their submissions. The appellants had therefore not sought to adduce further evidence from their experts, only for the Judge to find in his

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<sup>133</sup> Substantive judgment, above n 5, at [937].

<sup>134</sup> At [183]–[190].

<sup>135</sup> At [190].

<sup>136</sup> At [205].

judgment that the absence of such evidence was a key reason he declined to attach any significance to the new documents.<sup>137</sup>

[198] We were troubled by this and accordingly queried why the homeowners had not applied to adduce further expert evidence for the purposes of the appeal. Initially, counsel for the homeowners told us that it would be “hard to discern in terms of the essence of the case what the other homeowners’ experts would have added”.

[199] However, on the penultimate day of the appeal hearing, counsel for the homeowners filed an application to adduce further evidence. The application was thus made over a year after the Allunga documents had first come into the homeowners’ possession.

[200] The application comprised:

- (a) a request to revisit the application to recall Mr Cottier for further cross-examination; and
- (b) a new application to adduce further evidence from the homeowners’ own experts for the purposes of the appeal.

[201] The application was supported by affidavit evidence from Drs Wakeling and Akers and submissions were made at a further hearing in this Court.

[202] In a subsequent results decision, we declined the application on the grounds that the proposed evidence did not satisfy the test for admitting further evidence, being neither fresh nor cogent.<sup>138</sup> Our reasons for coming to that conclusion were as follows.

[203] We obtained a transcript of the hearing held in the High Court about the new Allunga documents. It revealed that the Judge had expressly raised the possibility of the homeowners calling further expert evidence before he delivered his substantive judgment, but counsel had made a deliberate decision not to seek to call any expert

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<sup>137</sup> At [184]–[186].

<sup>138</sup> *Cridge v Studorp Ltd* [2023] NZCA 365.

evidence. That of course was very different from our previous understanding as to what had happened in the High Court.

[204] Contrary to the homeowners' complaint of "persistent" and "egregious" non-compliance with discovery obligations, we were also satisfied that up until the time the new Allunga documents first came into James Hardie New Zealand's possession (mid 2021), it had not been in breach of its discovery obligations.

[205] The terms of the deliberately targeted discovery orders had been directed towards documents within the control of James Hardie New Zealand, and documents which had passed between James Hardie New Zealand and other third parties. There was no general obligation to discover documents in the possession of all related companies which, given the volume of documentation, would have been an unreasonable and disproportionate task. Once the documentation was in James Hardie New Zealand's possession, it was, in our view, required to discover it. As noted above, it did so, albeit reluctantly, a few weeks later. The delay was therefore limited and of itself did not prejudice the homeowners.

[206] For the purposes of an application to adduce further evidence, lack of freshness will not always be determinative if the proposed further evidence is credible and cogent.<sup>139</sup> However, rather than provide a detailed statement of the further evidence they would give in light of the new Allunga documentation, the affidavits of both Drs Wakeling and Akers simply make general assertions to the effect the evidence they gave at trial would have been different had they known of the documentation but do not give any specifics. In particular, the affidavits do not address the extent to which the Allunga documents bear on whether Harditex, properly installed in New Zealand conditions, would satisfy the requirements of the building code.

[207] The lack of specificity in the affidavits which focus on the Allunga results may be attributable to the fact that the essence of those results was already available pre-trial to the experts from the Extract. In addition, the experts were also aware pre-trial of a published article regarding similar outcomes for uncoated exposure in a

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<sup>139</sup> *Rae v International Insurance Brokers (Nelson Marlborough) Ltd*, above n 89, at 193 per Richardson P and Tipping J.

high rainfall tropical environment.<sup>140</sup> The article had been authored by a person who was involved in the Allunga testing and was cited by Dr Akers in his reply evidence.

[208] Having regard to all the circumstances, we came to a very clear view that it would not be in the interests of justice to allow the further evidence.

[209] As regards the application to recall Mr Cottier, he gave evidence about James Hardie's testing programme as well as the proven durability of the product. The Judge acknowledged that Mr Cottier was the James Hardie witness whose evidence was most relevant to James Hardie's testing and knowledge of any defects.<sup>141</sup>

[210] The grounds of the recall application were that the new Allunga documents contradicted the evidence Mr Cottier gave about: the extent of his involvement in the Allunga testing; his knowledge of its results; the adequacy of James Hardie's other testing; its knowledge of problems; and the purported proven durability of Harditex. It was, the homeowners argued, in the interests of justice that they should be able to confront Mr Cottier with the documents and impeach his evidence.

[211] The Judge acknowledged some positive evidence for the homeowners might have been able to be elicited from Mr Cottier, including the fragility of his memory of events 30 years ago, but considered it would be of insufficient relevance to warrant recall.<sup>142</sup>

[212] We agree with that assessment. Ultimately, just as in the High Court, Mr Cottier's potential responses to the new Allunga documentation are not a matter of such moment in relation to the core issues before us for determination as to warrant his recall.

[213] Finally for completeness in this "durability" section of the judgment, we address two further matters, namely differential movement and flexural strength.

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<sup>140</sup> A M Cooke "Durability of Autoclaved Cellulose Fiber Cement Composites" (paper presented to 7th International Inorganic-Bonded Fiber Composites Conference, 2000).

<sup>141</sup> Substantive judgment, above n 5, at [936].

<sup>142</sup> At [937]–[939].

### *Differential movement*

[214] This issue arises from a submission made to us by the homeowners about Dr Wakeling’s evidence regarding samples of Harditex taken from the test properties. Dr Wakeling identified fungal decay in the samples and the submission was that the areas where decay was identified corresponded with locations where Harditex samples were observed by other witnesses to have lost strength and become crumbly or friable.

[215] However, the evidence did not establish there was in fact a correlation. This was acknowledged by Dr Wakeling himself and it was presumably what may have prompted him originally to posit “differential movement” rather than fungal decay as the primary failure mechanism. However, differential movement was only ever a hypothesis and the Judge found it was not established.<sup>143</sup>

### *Flexural strength*

[216] As discussed, James Hardie’s position was that water is safely absorbed into the sheet until it leaves as vapour, and that the sheet’s absorbency was thus a benefit as part of the “moisture balance equation”. This gave rise to arguments about whether the mechanical stresses caused by constant wetting and drying cycles generate fatigue in fibre cement sheets and adversely impact on their strength. There were also arguments about whether the temporary loss of strength when the product was wet made a difference to its performance.

[217] The homeowners called evidence on the topic of flexural strength from Dr Jia. He is a research scientist who specialises in construction materials, with significant experience in the area of cement based materials. He holds a doctorate in civil engineering (construction materials) as well as a master’s degree in materials science. Dr Jia undertook flexural strength testing of 10 Harditex samples taken from the test properties. He was unable to determine whether the samples met the required level of strength under the relevant Australian/New Zealand Standard (AS/NZS 2908.2:1992) but testified that the test results did endorse the reliability of visual observations of the

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<sup>143</sup> At [206]–[209].

quality of some of the sheets by Mr Wutzler's company, including those categorised as "bad".

[218] Unfortunately, Dr Jia's evidence on flexural strength suffered from similar deficits as his evidence on fungal decay, discussed above at [158]–[159]. Although Dr Jia had claimed in his brief of evidence that he tested the samples in accordance with the procedure contained in the relevant AS/NZS, under cross examination he admitted he had not been able to fully comply with it. The fact he was aware of this but had not disclosed it until Dr John had identified the areas of non-compliance was understandably troubling for the Judge. So too was Dr Jia's admission in cross-examination that he had not read the full content of articles he had cited in evidence, only the synopsis and conclusion. Another concern was that he expressed a view that James Hardie was probably not doing the autoclaving of its sheets properly, despite having no evidential foundation for making such an assertion.

[219] Dr John reanalysed Dr Jia's raw data and concluded that within the weakest sheets there was evidence of significant ongoing contribution to the strength by the cellulose fibres and that, properly assessed, the sampled Harditex met the flexural strength requirements under the relevant AS/NZS.<sup>144</sup>

[220] The Judge accepted Dr John's evidence as do we.

[221] Having regard to all of the above, we endorse the Judge's conclusion on durability which was expressed in the following terms:<sup>145</sup>

[221] The plaintiffs have not established inherent defect five. This conclusion reflects two factors. First, the opinion of the defendant's experts is consistent with the current scientific understanding of the underlying issues. Second, the contrary view was presented by expert witnesses concerning whom there were significant issues with the manner in which their evidence was presented. These issues led me to devalue the probative value to their evidence. It is important to observe, however, that the defendant's evidence was sounder in any event. On the topic of decay, it was supported by current literature and the Court was pointed to no contrary literature. On the question of ongoing strength, Dr John's analysis countered, successfully, the propositions advanced by Dr Jia.

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<sup>144</sup> When tested at equilibrium moisture content.

<sup>145</sup> Substantive judgment, above n 5.

## **Vulnerabilities resulting from construction details**

[222] Construction details are descriptions and diagrams in technical literature that provide information and instructions on how to build, assemble and/or install specific items/elements of a building. In this case, inherent defects six, seven and eight relate to alleged inadequacies of the construction details for the Harditex system, as specified in the 1991 JHTI.

[223] The homeowners contended that some of the specified details rendered the Harditex system vulnerable to undue dampness and damage from water ingress, causing or contributing to damage irrespective of any alleged workmanship issues or non-compliance with the JHTIs. In short, the details were incapable of producing a weathertight house.

[224] The specific construction details at issue relate primarily to the following potential entry points for moisture:

- (a) the h-mould and corners;
- (b) base of the sheet;
- (c) windows; and
- (d) building movement.

### *The h-mould and corners*

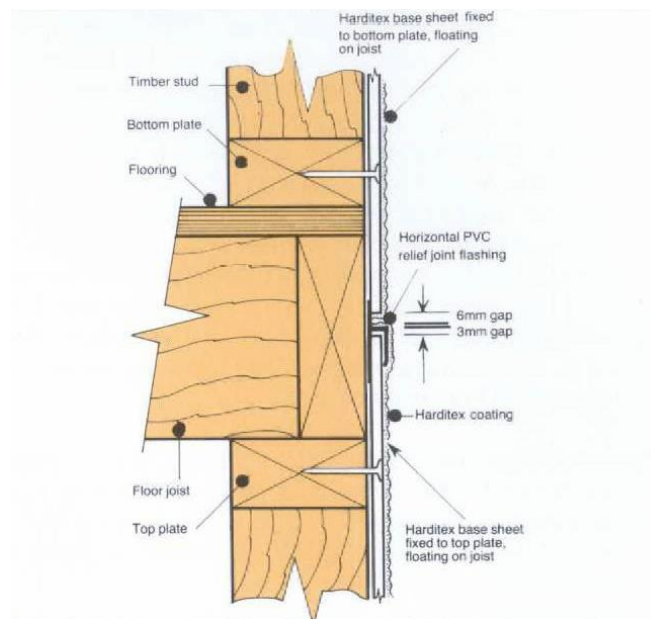
[225] The h-mould was a specifically designed PVC flashing. It was required to be incorporated within the horizontal control joints between the sheets at inter-storey level on the floor joist in two-storey buildings. As the name suggests, the profile of the mould replicated a lower case letter “h”. It featured a flat surface, a downstand and an upstand.

[226] It was one of the few novel features of James Hardie cladding when compared with similar cladding systems.

[227] The h-mould first appeared as a required Harditex accessory in the 1991 JHTI and featured in subsequent editions through until 1998. It appears to have been based on a detail which predated Harditex.

[228] The joint is formed by the insertion of the PVC moulding between the two sheets to the joint. The top sheet sits above the horizontal flat top of the middle of the “h”, and the bottom sheet slots in underneath between the two lower legs of the “h”. The joint is then required to be sealed and coated.

[229] The following photo of an h-mould and a construction detail from the 1991 JHTI were usefully provided in the High Court judgment:<sup>146</sup>



<sup>146</sup> Substantive judgment, above n 5, at [265]–[266].



[230] The homeowners contended the h-mould design and installation detail contained in the JHTIs were fundamentally flawed. On their case, the inevitable result was that moisture was allowed in to attack the uncoated back of the sheets, the building wrap and ultimately the timber.

[231] Their main witness on this topic was Mr Wutzler who, as already mentioned, is a registered building surveyor and remediation specialist.

[232] In his evidence, Mr Wutzler emphasised that from a weathertightness perspective it was important to appreciate that the horizontal control joints within the fibre cement sheet cladding of the various elevations create a break in the otherwise seamless cladding system. The joints are therefore vulnerable to water penetration and require appropriate protection, which in Mr Wutzler's opinion the h-mould flashing failed to provide.

[233] Based on test results and his observations of water-damaged houses built with Harditex, Mr Wutzler identified several deficiencies which, in his opinion, contributed to water ingress at horizontal control joints incorporating the h-mould:

- (a) the flat surface of the h-mould and its failure to deflect water;
- (b) the absorbent nature of the fibre cement sheets;
- (c) the application of texture coating to the flat surface of the h-mould;
- (d) the absence of any requirement to seal the sheet edges or inside face of the sheet at the base of the sheet prior to installation;
- (e) the inability to adequately apply texture coating to the bottom edge of the sheet;
- (f) the failure to provide any means of preventing moisture tracking up behind the top sheet to the horizontal control joint through capillary action;

- (g) the inadequate height of the h-mould upstand;
- (h) the inability to adequately protect joints in the h-mould;
- (i) unsealed sheets under the h-mould and the absorbent nature of fibre cement; and
- (j) the presence of unsealed sheet joints under the h-mould.

[234] Of these various deficiencies identified by Mr Wutzler, the central one was the h-mould's flat surface.

[235] Mr Wutzler testified that the flat surface enabled some of the water running down the exterior elevation above the horizontal control joint to pool rather than run off the flashing, down the exterior of the building. The water which collected on the flat surface was then able to penetrate behind the top sheet to the horizontal joint by various methods. First, it could be absorbed by the bottom edge of the sheet and by the inside face of the sheet. Secondly, water could rise up behind the sheet, between the rear face of the sheet and the h-mould upstand, by a process incorporating both capillary action and absorption. Thirdly, in certain wind conditions, water which collected on the flashing or on the bottom edge of the sheet could be blown up between the inside face of the top sheet and the upstand.

[236] The James Hardie experts, Drs Lstiburek and Straube, disagreed with this analysis. For reasons that they explained, and which the Judge accepted,<sup>147</sup> the h-mould was an acceptable construction detail which should perform acceptably.

[237] In challenging that finding on appeal, the homeowners cite this as another example of the Judge wrongly preferring theoretical building science to the evidence from the test properties, evidence of testing done by BRANZ and a testing facility called Façade Testing NZ Ltd (FTNZ), as well as evidence about the historical problems and redesign of the h-mould.

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<sup>147</sup> At [270]–[286].

[238] However, a close examination of the evidence relied upon by the homeowners suggests the Judge did not err.

[239] It is correct that James Hardie redesigned the h-mould for its later product Monotek which, as mentioned, was introduced to the market in 2001. It is also correct that the redesigned h-mould entailed changes to some of the features which Mr Wutzler identified as deficiencies in the Harditex h-mould. Thus, for example, the surface was now sloped and the height of the upstand increased. However, in our view, the inferences the homeowners seek to draw from the improvements are not sustainable having regard to other evidence which the Judge was fully entitled to accept.

[240] It will be recalled that Monotek was the result of a Harditex Improvement Project commenced in 1999. In evidence, the lead technical manager for the project, Mr Knox, rejected claims that the project commenced because of concerns Harditex was defective. He stated there was in fact no significant history of failure in the product so long as it and the other elements of the wall assembly had been correctly integrated into the building. Rather, the project was a response to a series of wider industry factors that, in combination, had led to a declining market share for Harditex over the latter part of the 1990s.

[241] As regards the h-mould specifically, Mr Knox said when the project commenced, there was no real concern about the performance or design of the h-mould flashing or how it was being used. It had been reviewed by BRANZ and there was no body of market feedback alleging poor design or pointing to major weathertightness failures at the joint. There were discussions about possible improvements, but these were not a priority and did not eventuate until later in the project.

[242] The fact the h-mould was capable of improvement does not, in our view of the evidence, equate to it being defective.

[243] In terms of the testing evidence, the homeowners criticise the Judge for incorrectly stating the BRANZ appraisal certificate for Harditex included the h-mould when it was not in fact included and when a rain penetration test of an h-mould

conducted by BRANZ in 2003 resulted in the detail failing and leaks being observed.<sup>148</sup>

[244] However, while the appraisal certificate does not expressly refer to the h-mould, it does state Harditex must be installed in accordance with the manufacturer's technical literature which provides details for control and relief joints. Further, evidence was given by a BRANZ accredited adviser that the h-mould and related detail and advice in the 1996 JHTI and previous versions were reviewed as part of the appraisal process and met BRANZ requirements.

[245] As regards the 2003 BRANZ test, it was accepted in cross-examination by a BRANZ senior scientist, Mr Burgess, that the test was conducted under conditions that were not real world conditions and that it was not a test for a commercial product but rather a test of performance limits. All of the building wrap and interior house lining had been removed for the purposes of the test.

[246] The other testing relied upon by the homeowners in relation to the h-mould was a test derived from AS/NZ 4284 which sets out methods of testing building façades for environmental loading, including water penetration. The test involves spraying the specimen wall with measured quantities of water at both constant and then increasing and decreasing pressures.

[247] The testing itself was conducted by FTNZ. As reported by the Judge, water penetration occurred:<sup>149</sup>

- (a) at windows at the initial no pressure test;
- (b) at h-moulds at zero static pressure, at 225 pa applied constantly and also during the cyclic tests; and
- (c) at the exterior corners, at 225 pa during the cyclic testing phase.

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<sup>148</sup> At [284].

<sup>149</sup> At [354].

[248] The Judge understandably had misgivings about the choice of test. It is a test used to test systems which, unlike Harditex, are designed to be a perfect or face-sealing barrier and where any penetration to the interior is a failure. That, as the Judge acknowledged, did not of itself deprive the test results of all relevance.<sup>150</sup> But there were however some other shortcomings which, in our view, meant the Judge was entitled to place little weight on these results. Those include unrealistic test conditions and the construction of the test wall, which involved replacing internal lining with Perspex, cutting holes in the building wrap, and inadequate use of sealant including failing to seal an h-mould joint.

[249] In addition to the FTNZ testing, the homeowners also rely on the fact the h-mould was a common site for water ingress at the test properties. They argue that even accepting the existence of poor workmanship or non-compliance relating to the h-mould, the poor workmanship could not have been a material cause of the water ingress or the only material cause.

[250] One of the workmanship defects relied on by the Judge was failure to apply sealant, the application of sealant being required by the JHTIs from 1995 onwards and considered good trade practice. The homeowners, however, say the Judge's reliance on a lack of sealant was contrary to the weight of the evidence that sealing the butt joints of the h-mould was ineffective. Therefore, the lack of sealant or inadequate sealing could not properly be viewed as significant. According to the homeowners, this was not only Mr Wutzler's view but also that of James Hardie's expert Dr Straube.

[251] There are certainly passages in Dr Straube's evidence to the effect that the use of sealant of joints in the h-mould provides only temporary protection. However, what Dr Straube also said was that even where the sealant at the h-mould fails, the amount of water getting to the building paper has been reduced as a result of the sealant by approximately a factor of 10.

[252] There is a further point that compliance with the JHTIs meant the sealant would be coated and properly maintained; inadequate coating and lack of ongoing

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<sup>150</sup> At [350].

maintenance also being a workmanship defect apparent at the test properties.<sup>151</sup> The homeowners sought to resist this analysis by contending it was common ground that coating was difficult to maintain. However, this was never conceded by the James Hardie experts.

[253] We note too that, in relation to at least one of the test properties relied on by the homeowners, the h-mould construction was so non-compliant as to cast doubt on whether the builders were even trying to comply with the JHTI, assuming they were in possession of it, which, given the extent of other non-compliance, was also doubtful. The framing was misaligned, there were over-driven nails, and the h-mould was on a slope.<sup>152</sup>

[254] At the heart of the debate over the adequacy or otherwise of the h-mould was expert opinion on how moisture behaves at the h-mould. That turned on issues such as wind and capillary forces applied to the water, the response of the components of the system to moisture, and the ability of the system to drain and dry. These are, it seems to us, quintessential issues of building science.

[255] While Dr Lstiburek accepted that capillary action may draw water upwards between the back of a cladding sheet and a flashing upstand, he was firmly of the view that it will not exert any force of a kind that could push the water over the top of the upstand and further into the assembly. If the only force operating is capillary, the water will simply sit between the sheet and the upstand. The wind pressures needed to force water over the upstand would only occur infrequently.

[256] On those topics, the Judge was, in our view, fully justified in preferring the evidence of Dr Lstiburek to that of Mr Wutzler because of the former's superior expertise and because the "empirical evidence" to the contrary relied on was not sufficiently cogent for the reasons we have identified.<sup>153</sup>

[257] On appeal, the homeowners suggested that Dr Lstiburek's evidence was unreliable because his claim that the wind pressures needed to force water over the

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<sup>151</sup> See for example at [478]–[479].

<sup>152</sup> See discussion of the Bay Lair property at [446]–[494].

<sup>153</sup> At [272]–[276].

upstand will only occur infrequently lacked any data to support it other than the RDH Building Science Inc testing. Yet that was testing which “even the Judge found unsatisfactory”.

[258] However, Dr Lstiburek’s evidence was supported by New Zealand data relating to wind driven rain and building science as explained by Dr Straube. As for the RDH testing, we agree the Judge was critical of aspects of it,<sup>154</sup> but in relation to the h-mould he accepted that an RDH test relating to the h-mould supported the conclusions he had reached.<sup>155</sup> The test involved the application of pressure-driven water to the face of a wall with an h-mould constructed in it, using a range of pressures. The result was that water did not overtop the h-mould at any pressure.

[259] A further criticism of the Judge’s endorsement of the h-mould detail is that it overlooked the concerns about the junction between the PVC corner mould and the h-mould. According to the homeowners, the evidence established that where the PVC corner mould and h-mould are both present, the various components of the corner assembly move differentially and crack the texture coating, leading in turn to water ingress and damage.

[260] Evidence to this effect is said to have been given by Mr Knox as well as two of the homeowners’ experts (Mr Wutzler and Mr Proffitt, a building surveyor). Mr Knox did give evidence that if the coating system is not sufficiently flexible to withstand the cyclic differential movement between the h-mould/PVC corner and the cladding, then there is the potential for cracking to occur. But, he also stated that such a crack will be very narrow. Additionally, he rejected the suggestion there was “inadequate provision for movement between the PVC corner mould and the fibre-cement at external corners”. There was evidence too from Dr Lstiburek that the joint in question can accommodate normal building movement.

[261] We therefore do not accept this criticism of the Judge’s reasoning is well founded.

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<sup>154</sup> At [397]–[405]. A challenge to the Judge’s criticisms of aspects of the RDH testing is one of the other grounds on which James Hardies seeks to support the judgment and which it is unnecessary for us to address.

<sup>155</sup> Substantive judgment, above n 5, at [406]–[407].

[262] Finally on the topic of the h-mould, we address a concern of inconsistency between the Judge's finding that water between the sheet and the upstand of the h-mould is not an inherent flaw,<sup>156</sup> and a finding that to the extent any water encounters uncoated Harditex, the sheet will absorb much or some of that water.<sup>157</sup> We are not however persuaded there is any inconsistency. As submitted by James Hardie, the first finding relates to moisture outside the sheet (between the sheet and the h-mould) and the second finding relates to moisture within the board and the process of vapour diffusion.

*Base of the sheet*

[263] The base of sheet detail appears for the first time in the 1991 JHTI.

[264] The base of the sheet was identified in evidence as one of the most vulnerable areas of a building because it is subject to high moisture loads. Water that runs down the face of the sheet to the base clings to the bottom edge by surface tension. From there, on the homeowners' case, it was said to be able to enter the wall assembly either by capillary action or by being absorbed into the sheet. Once the water was absorbed by the sheet it could then travel through the sheet and, where the sheet was in contact with the building paper, be absorbed through the building paper or access the timber framing through perforations in the paper.

[265] The relevant construction detail prescribed that:

- (a) the bottom of the sheet should hang down past the bottom plate by at least 50 mm;
- (b) the bottom of the sheet should be above the ground, the size of the clearance being 20 mm in the 1991 JHTI and increasing in various iterations of the JHTIs;
- (c) in the case of a concrete slab foundation, a capillary gap was required between the back of the sheet and the concrete slab;

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<sup>156</sup> At [276].

<sup>157</sup> At [271].



- (d) the gap between the slab and the back of the sheet was to be bridged by a strip of inseal placed at/near the bottom of the sheet; and
- (e) the coating on the sheet was required to cover the bottom of the sheet and go across the inseal to the slab.

[266] As noted by the Judge, the overall theory of the detail was that the bottom timber plate was protected from water by the overhang, the inseal strip and the ground clearance. The sheet was protected by the coating on the face and the bottom edge.<sup>158</sup> The coating in conjunction with the capillary gap would prevent water migration by either capillary action or surface tension.

[267] On the homeowners' case, the prescribed detail was however insufficient and, in some aspects, did not comply with the requirements of the relevant building standard of the time, NZS 3604. Their experts identified the following defects:

- (a) the absence of a drip edge on the sheets to promote water drainage;
- (b) the inadequate and non-compliant size of the prescribed capillary gap of 2–3 mm prior to 1998, NZS 3604 required 6 mm;
- (c) inconsistent ground clearances even within the same JHTI;
- (d) coating the bottom edge was too difficult; and
- (e) the inseal was conceptually flawed, impeded drainage, and was impractical to install and rarely used.

[268] Of these various defects, the Judge considered the only issue that really mattered was the ability or otherwise to coat the sheet on the exposed bottom edge. In his view if that were not possible, that would undoubtedly (unlike the other alleged deficiencies) be a flaw.<sup>159</sup> It was common ground that due to the absorbency of Harditex, if the bottom edge was not coated, water was likely to be absorbed into the

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<sup>158</sup> At [294].

<sup>159</sup> At [297].

sheet by wicking. How much water and up to what height was however disputed. As was of course what happened to water absorbed into the sheet.

[269] The Judge went on to hold it was always clear in the JHTIs that the base of the sheet must be sealed and coated.<sup>160</sup> He further held that while there will often be difficulty in coating the bottom sheet requiring some effort and time, there was no reason why sealing and coating could not be done using either an applicator gun or a brush.<sup>161</sup> Sound building experience should have ensured sufficient ground clearance.<sup>162</sup>

[270] On appeal, the homeowners challenge the Judge's findings on several grounds which we now address.

[271] First, they contend the Judge wrongly assumed that if the base of the sheet is coated, no water ingress will occur. However, our reading of the judgment as a whole does not support the making of any such assumption. The Judge certainly regarded coating as critical to avoiding a water ingress problem at the base of the sheet but never suggested if that was done the other requirements of the JHTI could simply be ignored.

[272] In so far as the submission is a reference to claims that at some of the test properties water ingress was observed in a number of locations where the base of the sheet was coated, we do not consider the evidence relating to those houses demonstrates that proper sealing and coating was ineffective. At one of the properties in question, there was erratic compliance with the base of sheet detail with some areas where it had not been sealed or coated at all.<sup>163</sup> At the other, the coating had not been properly applied at the base of the sheet (if applied at all) despite ample ground clearance to have allowed an applicator gun.<sup>164</sup>

[273] At one property relied on as evidencing the defects in the base of sheet detail, there were also significant departures from the various requirements. In some places

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<sup>160</sup> At [309].

<sup>161</sup> At [300]–[302].

<sup>162</sup> At [309].

<sup>163</sup> The Bay Lair property.

<sup>164</sup> The Woodhouse Avenue property.

there was no capillary gap, the sheet did not overhang the bottom plate by the required amount, and there was a lack of coating to the bottom edge.<sup>165</sup> Although the Judge's ultimate finding was that in any event the water may have come in from somewhere else other than the base of the sheet, we agree with his observation that the extent of the departure from the detail cannot support a conclusion the detail was inherently flawed.<sup>166</sup>

[274] At two other properties advanced to support the claims regarding the base of sheet detail, the James Hardie experts were denied any access or given only limited access.<sup>167</sup> These included a property where recladding was in process.<sup>168</sup> At yet another property, there were what the Judge fairly described as a "litany of errors including ... missing capillary gaps and poor ground clearance".<sup>169</sup>

[275] In fact, it appears that not one of the test properties showed a compliantly constructed and properly textured base of sheet that had been maintained correctly.

[276] The second criticism raised by the homeowners is that the Judge wrongly held that the difficulty in coating and maintaining the coating was irrelevant to liability, not least of all because its importance was not highlighted. They submit that in order to discharge the duty of care that James Hardie owed the end user of Harditex, it was incumbent on it to emphasise the importance of regular coating and maintenance.

[277] However, we agree with the Judge that no special advice was required given it was at the time common industry knowledge that exposed surfaces of an absorbent exterior cladding should be coated.<sup>170</sup> In saying that, we do not overlook the point that predecessor products, such as asbestos-based Hardiflex, did not require coating. However, given James Hardie ceased using asbestos in the 1980s, we do not accept that a decade later those in the building industry were unaware of the importance of

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<sup>165</sup> There was also no insecal although for reasons explained below at [280] we do not attribute any significance to that omission.

<sup>166</sup> Substantive judgment, above n 5, at [480] and [493].

<sup>167</sup> The Golf Road and Carnelian Court properties.

<sup>168</sup> The Carnelian Court property.

<sup>169</sup> Substantive judgment, above n 5, at [523], referring to the San Vito property.

<sup>170</sup> At [300].

coating. Significantly, the homeowners do not refer to any evidence to suggest otherwise.

[278] A third criticism is that the Judge erred in considering that coating was the only issue that mattered when other flaws in the base of sheet detail were significant. In support of that contention, the homeowners refer to evidence of a general lack of attention to detail in the JHTI, evidence that an inadequate capillary gap can result in water ingress through capillary action, evidence that the inseal can inhibit drainage and the absence of a drip edge. They further submit that the 50 mm overhang did not “exonerate” the other failures because moisture rise of greater than 50 mm was established.

[279] We do not accept these submissions.

[280] In our view, the inseal became something of a non-issue because it was seldom installed and the James Hardie expert Mr Knox confirmed he would not be critical of a Harditex wall assembly which did not include it.

[281] As for the capillary gap, the Judge accepted it was “very poor” that the specified capillary gap did not comply with the relevant building standard. The figure in the JHTIs was wrong. It should have been 6 mm instead of 2–3 mm. However, there were good reasons why in our view the Judge was right not to attach the same significance to that error as sought by the homeowners and to conclude it did not give rise to a risk of failure.<sup>171</sup>

[282] We say that because of compelling expert evidence to the effect that water would be held if the gap were 2 mm and only driven up if it were smaller than 2 mm. That evidence clearly justified the Judge’s finding that a 2–3 mm gap was sufficient to limit at least the worst effects of capillary action.<sup>172</sup> We note too there was no evidence that any builder had actually been misled by the incorrect information in the JHTIs, including at the test properties.

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<sup>171</sup> At [304].

<sup>172</sup> At [303], n 58.

[283] Related to this point is the fundamental issue of water pathways and in particular how far up the sheet any water that wicked into the base of the sheet would be capable of travelling. Mr Wutzler contended that water could wick up through and behind the sheet to the height of the timber framing and then transfer across to the timber. He claimed to have observed a moisture rise of over 50 mm.

[284] However, the building scientists called by James Hardie testified that only a small amount of water was available to wick into the base of the sheet and could only leave the sheet by vapour diffusion. Accordingly, in their opinion there was no risk of material capillary rise between the back of the sheet and the foundations. As already indicated, a central theme of their evidence was that vapour diffusion does not create a moisture management problem.<sup>173</sup>

[285] Mr Wutzler was not a building scientist and in our view the Judge was right to prefer the evidence of Drs Straube and Lstiburek. We note too that the claim made by Mr Wutzler in cross-examination of moisture rise over 50 mm was not supported by any evidence of the conditions under which he had made that observation.

[286] As for ground clearance, the Judge found it was “difficult to discern one JHTI that properly reflected the requirements ... of NZS 3604”.<sup>174</sup> Original iterations of the JHTI required the sheet to sit at least 20 mm above the ground after landscaping. This was increased to 50 mm for paved ground and 100 mm for unpaved ground in 1995, contrary to a BRANZ appraisal that advised it should be 100 mm above hard surfaces and 175 mm above unpaved ground. In 1996, a diagram in the JHTI stipulated 100 mm above paved ground and 205 mm above unpaved ground and the text alongside it specified 150 mm and 255 mm respectively. Then the 1998 JHTIs specified 50 mm for all surface types (for concrete slabs with cast-in bearers or timber piles), and 100 mm for paved ground and 175 mm for unpaved ground (for concrete or blockwork bases).

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<sup>173</sup> See above at [101].

<sup>174</sup> Substantive judgment, above n 5, at [307].

[287] The Judge rightly described this as “an inconsistent mess”<sup>175</sup> reflecting a lack of attention to detail.<sup>176</sup> However, he was not satisfied this was a real source of risk because in his view sound building experience should have ensured sufficient ground clearance.<sup>177</sup> Criticism that this was too dismissive a response overlooks that in all the test properties, there were areas where the ground clearance did not comply with any of the JHTIs’ requirements. It follows that the properties did not demonstrate failure despite compliance.

[288] There is also the further point made to us on behalf of James Hardie by Mr Scorgie in oral submissions. And that was that it needs to be borne in mind that the JHTIs did not purport to regulate the height of the concrete slab. That was the province of NZS 3064. In the construction sequence, the slab occurs before the installation of the cladding and is determinative of the distance between the ground and the timber.

#### *Windows*

[289] The JHTIs did not provide any installation detail for face-fixed windows until 1995. Nor was there any evidence that any other cladding manufacturer did so. The explanation given was that prior to 1995 James Hardie, in common with the other cladding manufacturers, had made assumptions about basic building knowledge and practice that it later became apparent may have been wrong.

[290] The homeowners’ case on this point was twofold. They argued that the failure to provide any detail was negligent and secondly that even when detail was provided it was inadequate.

[291] As to the first point, the homeowners’ argument rested, in our view, on several incorrect premises. In particular, the premise that there was something significantly new and different about installing windows in Harditex and that builders would not have been familiar with aluminium windows, which had in fact been available since

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<sup>175</sup> At [293(b)].

<sup>176</sup> At [307].

<sup>177</sup> At [308]–[309].

the 1960s.<sup>178</sup> The argument also rested on the premise that the Harditex sheet itself was an inherently deficient cladding option because of its absorbency, which the Judge rejected and which we, for reasons already discussed, also reject.

[292] As to the adequacy of the guidance on installation, we agree with the Judge that what was provided in the JHTIs was a reasonable illustration of the process, given the difficulties associated with it. Difficulties that, like the Judge, we consider were nevertheless not beyond the capabilities of a reasonably competent builder.<sup>179</sup>

[293] The homeowners further contend that their concerns were not limited to installation difficulties and that the Judge failed to appreciate or acknowledge this. In addition to installation difficulties, they also alleged for example that the detail for the head flashing was insufficient to ensure that a weathertight joint could be formed. The detail required the installer to notch the flashing and seal it.

[294] This deficiency was raised in evidence by Mr Wutzler. He said there was insufficient guidance as to what sort of sealant was required and where it was to be applied. More fundamentally, he also opined that sealant is at best only a temporary protection and not a cure to water ingress. He contended that it was easy for water to bypass the sealant. His evidence on this issue is said to be supported by evidence of water ingress and damage at the head flashings on two test properties where sealant had been applied, and the results of the FTNZ testing.

[295] For reasons we have already explained, we consider the reliance on the FTNZ testing to be misplaced.<sup>180</sup> Likewise on the two test properties cited. At one of the properties there was in fact a lack of sealant at window heads and at the other property any sealant that had been applied appeared to have been applied minimally.

[296] The contention by the homeowners also overlooks evidence, which we accept, that the same requirement to notch and seal at the head flashing had been used for several years with other sheet claddings.

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<sup>178</sup> The homeowners' expert, Mr Sutherland, testified that by the late 1960s windows were predominantly aluminium framed fitted with timber liners which were fixed to jamb studs.

<sup>179</sup> Substantive judgment, above n 5, at [339].

<sup>180</sup> See above at [248].

[297] Another concern raised by Mr Wutzler was that the head flashing detail required a slit to be cut in the building wrap at either end of the head flashing to accommodate the upstand. He considered this would allow water running off the end of the head flashing to have access to the underlying timbers through the slit.

[298] The Judge did not address this specific concern. Mr Longman, the main James Hardie expert on the installation details, accepted that a cut in the paper does create a point of weakness. However, as Mr Longman also pointed out, if the direction to seal the ends of the head flashings had been properly followed this should have been effective in preventing material water ingress at this location.

### *Building movement*

[299] It was alleged by the homeowners, and identified by the Judge as inherent defect four,<sup>181</sup> that the system failed to adequately accommodate normal building movement. The key contention was that the gaps prescribed in the JHTIs for the Harditex horizontal and vertical joints were not sufficient to allow for normal building movement caused by, for example, shrinkage in the timber framing.

[300] Again, there was competing expert evidence, this time from civil and structural engineers. The calculations undertaken by the homeowners' expert, Mr Hadley, suggested the system did not have sufficient capacity. This was disputed by the James Hardie expert, Dr Buchanan, whose evidence the Judge preferred, primarily because of his superior expertise.<sup>182</sup> The Judge did however accept that the system tolerances were very tight at the highest moisture levels, but not so as to qualify as an inherent defect. He considered it was more in the category of a theoretical problem.<sup>183</sup>

[301] At the hearing before us, Mr Rainey for the homeowners, acknowledged that the Judge "probably [got it] right" about the issue being a theoretical problem. That was an appropriate concession to make because even on the homeowners' case it was not alleged that cracking was the primary source of water ingress in any of the test

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<sup>181</sup> Substantive judgment, above n 5, at [24].

<sup>182</sup> At [236].

<sup>183</sup> At [239]–[243].



properties. As Mr Rainey put it, although the issue was raised on appeal, it was “not a big and significant aspect of [the] litigation”.

[302] We therefore do not address it any further.

### **Buildability**

[303] Buildability was not pleaded as a distinct defect. However, the concept of buildability underpinned several of the allegations relating to the content of the JHTIs. We have already traversed aspects of this in connection with the alleged vulnerabilities in construction details, most notably difficulties in coating the bottom edge of the sheet and the installation of windows. Under the buildability head, the JHTIs were further criticised for failing to alert the user to the critical importance of coating and for leaving it to builders to work out for themselves how to form critical junctions. In addition, buildability also involved an allegation that the Harditex system did not contain sufficient tolerance for normal building conditions.

[304] Evidence on buildability was given by a number of the various experts we have already mentioned. There was also evidence on buildability given by builders who had constructed houses with Harditex and other sheet cladding products.

[305] The Judge reached the following conclusions:

#### **Assessment on buildability**

[645] If the necessary assessment is whether the plaintiffs have proved Harditex was too hard a product to build with, the answer can only be no, and by a margin so. Their witnesses lacked direct experience in building with Harditex on residential houses. That is not to say some are not experienced and respected in the industry, but from their evidence I took a message of poor building standards rather than a product that could not be built with. By contrast, the defendant’s witnesses established that a competent builder could build a sound Harditex house. Indeed, I do not take Mr Proffitt, for example, to disagree with this.

[646] The greater familiarity with working with Harditex lay with the defendant’s witnesses, and particularly Mr Donnan<sup>184</sup> and Mr Kennerley. It would, however, be too narrow to focus just on Harditex. Experience with

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<sup>184</sup> Mr Donnan’s experience was not as extensive as first appeared in that he was an employed carpenter and all the 16 dwellings were single storey. This meant he had not installed an inter-storey h-mould, for example. In this regard his original evidence was overstated. It is the case, however, that he was a working builder on Harditex houses.

sheet cladding is of considerable relevance. For the homeowners I consider the greatest exposure to building with Harditex lay with Mr Holmes, who was also a witness who was very good in his field. However, his field, for the time period in question, was very much large-scale Harditex construction, and so not as directly relevant to the case as some others.

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[306] It appeared to be common ground in the evidence that if the JHTI details were to be adhered to, Harditex could only be installed by competent and skilled builders. It was not a system that just anyone could install. Careful attention was required.

[307] As is apparent from the passage quoted above, the Judge accepted this but also found there was nothing particular about Harditex that made it different from building with other sheet claddings and that a competent builder could build a sound Harditex house. As for the JHTIs, the Judge found that the level of detail was adequate for competent builders and there was no evidence that increased detail would have made any difference.<sup>185</sup>

[308] On appeal, the homeowners challenged the Judge's findings on two main grounds: that the Judge identified the wrong intended user of Harditex and that he wrongly discounted evidence given by builders called by the homeowners.

*Identification of the intended user*

[309] Before us, the homeowners maintained their position that James Hardie could not reasonably expect the exacting details of the JHTIs to be managed by its intended users. As to who the intended users were, they argued the Judge wrongly identified the hypothetical competent builder as the target audience of the JHTIs and the standard by which James Hardie was to be judged.

[310] That was said to be wrong because it overlooked several strands of evidence: evidence that James Hardie had not limited its marketing of Harditex to in-trade builders, but had also marketed to a wider user group; evidence that the increased popularity of sheet cladding had coincided with a building sector more experienced with using traditional products; and evidence that during the relevant period there was,

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<sup>185</sup> Substantive judgment, above n 5, at [744].

to the knowledge of James Hardie, a decline in building skills and a proliferation of labour-only contractors as well as do-it-yourself and spec-built houses. All of these were submitted to be matters that resulted in an increased margin of risk in relation to a product that required an unrealistically high degree of precision. At one point of the submissions, the homeowners also appeared to suggest that James Hardie should have anticipated the advent of the labour-only contractors and the lowering of standards.

[311] Having reviewed the evidence ourselves, we consider the latter is an unrealistic counsel of perfection and are not persuaded that the criticism of the Judge's analysis is well founded.

[312] While James Hardie certainly promoted its products to homeowners, who in that sense were thus part of its targeted audience, it is a stretch, in our view, to suggest (as the homeowners did) that this means James Hardie was legally obliged to tailor its technical advice to the unqualified owner-builder, including someone who for example was not even familiar with NZS 3064. On the contrary, we consider James Hardie reasonably expected and intended that a homeowner liking the look of the monolithic sheet cladding would engage a qualified builder to undertake the task of installation.

[313] We acknowledge that the JHTIs became more detailed over time. However, it would in our view have been obvious to the reader of even the earliest versions that they were not purporting to be a do-it-yourself guide for the home handyman or unskilled labourer. They were sufficiently technical for that to be self-evident.

[314] We therefore do not accept that the Judge applied the wrong standard or identified the wrong user and in at least one part of the oral submissions before us counsel for the homeowners appeared to agree.

*Evidence of builders called by the homeowners*

[315] The second criticism is that the Judge wrongly discounted the evidence of the builders called by the homeowners. It is contended that contrary to the Judge's assessment, the homeowners' witnesses generally had greater experience building with Harditex than those called by James Hardie and in one instance (Mr Proffitt) the Judge misunderstood the evidence.

[316] However, as pointed out by Mr Hodder for James Hardie, it is notable that not one of the competent builders called by the homeowners was a builder who, despite faithfully following the JHTIs, had been unable to install Harditex so as to produce a weathertight house. Yet, given that Harditex is estimated to have been installed in over 100,000 houses in New Zealand, it would be reasonable to expect the homeowners to have been able to find one such builder if there were significant buildability issues.

[317] It is notable too that none of the builders or designers of the test properties were called to give evidence about buildability difficulties they had experienced which might explain why those properties were not fully compliant with the JHTIs.

[318] As to the witnesses that were called, two of the homeowners' experts, Mr Proffitt and Mr Peryer, had each constructed buildings using Harditex. Neither said they personally had experienced difficulties or that the buildings in question had failed. Mr Proffitt also acknowledged that the key elements of the system were not difficult to install. Both were nevertheless critical of the Harditex system and the literature.

[319] However, after reading the entirety of their evidence, a slightly different impression emerges. In the case of Mr Proffitt, it is a reasonable inference (which the Judge also drew)<sup>186</sup> that his criticisms could be considered a product of his view of dismal standards in the building industry. Mr Proffitt considered there was a significant number of qualified builders who were neither willing nor able to carefully follow plans and instructions and ensure that houses were properly built.

[320] Mr Peryer's company had built three school buildings with Harditex in the early 2000s. He gave evidence of problems during construction but acknowledged these were attributable to a failing on the part of the architects to incorporate necessary details. He did not have any personal experience of using the JHTIs in the 1990s.

[321] The Judge found that the concerns of both Mr Proffitt and Mr Peryer about Harditex were largely anecdotal and related to perceptions of Harditex in the

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<sup>186</sup> At [567].

industry.<sup>187</sup> We agree with that assessment and reject suggestions the Judge misunderstood the former's evidence. That said, we also consider the fact of there being adverse perceptions of Harditex in the building industry is something not devoid of all significance. Such a perception must have come about for some reason. But equally clearly in order to sheet home liability in a damages claim, perception is not enough on its own without hard facts to back it up.

[322] Another building expert called by the homeowners who shared the same adverse perception of Harditex was Mr Holmes. Mr Holmes was a director and part owner of a major building construction company employing 71 staff. He had been involved in the building industry for almost 50 years, initially "on the tools" and then from 1991 in the role of a project manager.

[323] During the 1990s and early 2000s, his firm had employed contractors to install Harditex on four large jobs involving multi-storeyed apartment buildings. Although the firm had no involvement in the original construction of any single level buildings using Harditex, it had also been involved in recladding work on a number of smaller residential projects.

[324] Of the four apartment complexes, Mr Holmes testified that nine years after the first one in time was completed, there was evidence of water getting past the cladding on one level at the window/cladding junctions. The building was however still performing 21 years later which Mr Holmes attributed to the coating. As regards the second apartment building, Mr Holmes said he was not aware of any issues during installation of the cladding. Both the second apartment building and the third complex suffered watertightness issues subsequently leading to litigation against the builders and other parties, including James Hardie. There was no evidence as to the causes of those problems other than a copy of the respective statements of claims. These pleaded numerous workmanship defects and claims that Harditex may not have been properly installed as well as allegations similar to those raised here. The claims never went to trial and therefore the allegations were never tested. At the fourth property mentioned

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<sup>187</sup> See for example at [577].

by Mr Holmes, Harditex was installed over a cavity and accordingly did not feature in the case.

[325] The Judge was understandably impressed by Mr Holmes' experience and obvious abilities. He noted that of the homeowners' witnesses, Mr Holmes had had the greatest exposure to building with Harditex.<sup>188</sup> However, the Judge also identified several reservations about his evidence.

[326] The first was that Mr Holmes' experience during the relevant period was very much in large scale Harditex constructions and so not directly relevant.<sup>189</sup> The second reservation arose from Mr Holmes' contention that different building issues emerged with Harditex over and above previously available cladding systems. That contention was contrary to the weight of the evidence.<sup>190</sup> The third reservation was that Mr Holmes' criticism of the JHTIs tended to overlook that its target was a residential timber frame dwelling of no more than two storeys, unlike the apartment complexes in which Mr Holmes had been involved.<sup>191</sup>

[327] For its part, James Hardie called three building practitioners, Messrs Kennerley, Donnan and Sylvia. Contrary to a submission made by the homeowners, we consider the Judge was right to find that Mr Kennerley and Mr Donnan in particular had greater familiarity with working with Harditex than the experts called by the homeowners, including Mr Holmes.<sup>192</sup>

[328] Mr Kennerley had approximately 32 years' experience in the construction of residential buildings in both New Zealand and overseas. During that time, he had seen and worked on a large number of residential buildings clad in fibre cement, including many buildings clad with Harditex. Most of that work was in the context of alterations or renovations but some involved new builds, particularly earlier in his career.

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<sup>188</sup> At [646].

<sup>189</sup> At [646].

<sup>190</sup> At [647].

<sup>191</sup> At [602].

<sup>192</sup> At [646].

[329] He testified that he had not found Harditex any more difficult to work with than any other exterior cladding products. In his experience, there was no reason why Harditex houses could not be well built if the builder followed the technical literature, good trade practice, and used good judgement as they did every day on the job. He also gave evidence that James Hardie provided further assistance in the form of a toll free helpline and that James Hardie representatives were always willing to come on site if requested.

[330] Mr Donnan had the most experience of any witness in building residential properties with Harditex although all were single-storey dwellings meaning he had never had occasion to install an h-mould. He had built 10 or so Harditex-clad houses as part of a retirement village development between 1996 and 1998. Then later in the early 2000s he built approximately six Harditex-clad houses.

[331] In evidence Mr Donnan said he did not recall having any issues understanding the JHTIs and nor did he remember any of the other builders he had worked with on Harditex raising any difficulties with using it or with understanding the JHTIs. He agreed that the details in the JHTIs required the builder to be precise but considered the level of precision was what was reasonable to expect from a competent builder. As he put it, "precision is part of a builder's craft". He further stated that the Harditex details were not materially more complicated than the details for many other cladding systems at the time. He would never have turned down a job because the cladding was Harditex nor would he have allowed more time when quoting for a job because it involved Harditex.

[332] Mr Sylvia was a qualified carpenter who had worked in the building and construction industry since 1995. He was also a building surveyor. He had less experience using Harditex than the other witnesses, having installed it only on a few occasions. However, he had a lot of experience installing other cladding systems including sheet cladding, which in his experience provided similar detailing to Harditex.

[333] Having regard to all the evidence on buildability, we are not persuaded the Judge wrongly discounted the evidence of the builders called by the homeowners. He

clearly took it into account but was entitled to consider it was outweighed by the evidence of the James Hardie witnesses. We agree with that assessment.

### **The test properties**

[334] As mentioned, the test properties comprised eight properties, two of which were owned by the lead plaintiffs, who are the named appellants. The properties of the lead plaintiffs were Bay Lair — owned by Ms Cridge and Mr Unwin — and Woodhouse — which comprised two units in a duplex, one owned by Ms Fowler and the other by Mr Woodhead. The remaining six properties were owned by members of the class.

[335] The key witness for the homeowners regarding the test properties was Mr Wutzler. He inspected each of the properties, detailed the locations of water damage, identified moisture entry points and carried out dye testing in order to establish water pathways. His opinion was that in each case the damage could be linked to one or more of the alleged inherent defects in Harditex.

[336] For James Hardie, the main evidence regarding the eight properties was provided by Mr Sylvia and Ms Johnson. Ms Johnson, like Mr Wutzler, was a building surveyor specialising in weathertightness construction.

[337] At the outset of our involvement in this case, we considered the evidence relating to the test properties to be potentially the most important evidence of all. We say that because had that evidence established on the balance of probabilities that the cause or a contributing cause of the damage to those properties was more likely than not to be attributable to Harditex, it would have been pivotal to our thinking. As it is, we agree with the Judge that if anything the evidence relating to the test properties supported James Hardie's case rather than the other way round.<sup>193</sup>

[338] The Judge traversed in detail the investigations that had been undertaken in relation to each of the eight properties and made individual findings that none of them provided any evidential support for the alleged inherent defects. Collectively they

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<sup>193</sup> At [549].



revealed what he described as “scant regard by builders to the requirements of the JHTI” and a “disturbing pattern of incompetent building and poor texture coating” which was more likely to be the cause of the damage than anything to do with Harditex.<sup>194</sup>

[339] It is unnecessary for us to repeat the exercise in the same detail as we agree with the overall finding that the test properties were not examples of the Harditex system in action. We do however make the following general observations about the evidence before turning to the key arguments.

[340] Mr Wutzler had inspected not only the test properties but also all 149 properties in the class. It is therefore reasonable to assume that had there been a property suffering from weathertightness issues despite being constructed in accordance with good and tradesmanlike practice and the JHTIs then it would have been selected as a test property.

[341] Yet, there was none and none of the people involved in the design or construction of the test properties were called to give evidence. That meant that there was no explanation as to why elements of the Harditex system were not used or why the JHTIs were not followed.

[342] There was also no evidence that any of the properties had been coated using an approved coating system or that the coating was applied by a licensed applicator. At the base of the sheet, none of the test properties showed a compliantly constructed and properly texture coated bottom edge. Where there was some evidence of coating, the coating was incomplete and had not been properly maintained.

[343] On the evidence it appears that none of the properties showed horizontal control joints that fully complied with the JHTIs and also that none of the properties had the vertical control joints required by the JHTIs. Similarly, it appears that none of the properties had windows that had been installed fully in compliance.

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<sup>194</sup> At [744] and [889].

[344] On appeal, counsel for the homeowners endeavoured to overcome these difficulties by submitting that the Judge erred in his approach to causation because he failed to appreciate that in the law of torts there can be multiple causes of damage. In support of that contention, the homeowners point to a passage in the judgment where the Judge talks about the homeowners needing to “disentangle” the building flaws from the accompanying damage in order to be able to establish causation.<sup>195</sup> The law of causation does not, the homeowners argue, require disentanglement.

[345] We agree that in principle there can be more than one operative cause and that a contributing cause is sufficient. But that does not mean it was an error for the Judge to question how much value could properly attach to the damaged properties as illustrations of the existence of the inherent flaws given the extent of the bad workmanship and in particular the number of major departures from the JHTIs.<sup>196</sup> That was only common sense.

[346] We note too that the exact phrase in the impugned passage of the judgment was “to *sufficiently* ‘disentangle’”.<sup>197</sup> That the Judge correctly directed himself on causation is evidenced by his analysis of the evidence generally, including his detailed analysis of the individual test properties and examination of possible alternative causes of water ingress and moisture damage. Thus, for example he recorded his finding about one of the test properties as being that “[t]he house has not been shown to have damage resulting in whole *or in part* from an inherent flaw with the Harditex system”.<sup>198</sup>

[347] A further point is that the comment about sufficient disentanglement was made in the context of an observation about a tendency in the evidence called by the homeowners to try and downplay the significant number of basic building deficiencies in order to prove there were other causes of the problems being experienced.

[348] In our assessment, that was very much a feature of Mr Wutzler’s evidence. The general impression we gained from reading his evidence is that he came to his task

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<sup>195</sup> At [514].

<sup>196</sup> At [455].

<sup>197</sup> At [514] (emphasis added).

<sup>198</sup> At [494] (emphasis added).

with a pre-existing mindset about Harditex. This also led him to not only downplay workmanship issues but, on a few occasions, to be less forthcoming than he should have been in his role as an expert, for example, failing to disclose his previous dealings with an owner.

[349] Another feature of Mr Wutzler's evidence relating to the properties was to regard some instances of non-compliance as insignificant because non-compliance was commonplace during the relevant period as a result of declining building standards at the relevant time. However, James Hardie was not a guarantor of building standards and in our assessment was not legally obliged to cater for non-compliance.

[350] In seeking to persuade us that the workmanship and non-compliance issues did not displace the causative effect of the inherent defects and could not be found to be the sole cause of the damage, counsel for the homeowners took us through some of the evidence relating to each property. We turn to briefly summarise the key arguments and our response.

#### *Bay Lair*

[351] The house is a duplex, only one half of which is involved in the litigation. It was constructed in 1992 and the relevant unit is owned by the named appellants, Ms Cridge and Mr Unwin. They purchased it in 2006. They are the fourth owners. The applicable JHTI was the 1991 version.

[352] There was a significant amount of water damage on the inter-storey timbers. The house was said to demonstrate water ingress and damage to the framing timber from the h-mould, as well as moisture ingress and damage to the framing timbers from the base of the sheet. This was also the house which contained so many building defects and departures from the JHTI, both in relation to the h-mould and the base of sheet, that there was said to be doubt whether the builders had a copy of the JHTI or, if they did, whether they made any attempt to use it. The defects included timber framing that did not comply with NZS 3604.

[353] On appeal, the homeowners did not dispute the existence of the non-compliance issues but argued there was "no evidence" the non-compliance issues

accounted for the entire water load of the property. More specifically, they contend that the Judge erred in his assessment of the contribution of a large mitred corner window and the gutter system, and that he overlooked a concession made by Ms Johnson that the base of sheet had been coated.

[354] However, what Ms Johnson stated was that at some areas there appeared to be some coating and that other areas appeared to have never been coated. She did not ever accept the base of the sheet had been properly coated including at the locations identified as the source of the water ingress. There was in fact no evidence that there was ever proper coating and also no evidence of adequate maintenance.

[355] As regards the corner window, there was a significant amount of damage to the timber framing below it. Both parties relied on the location of this damage to support their competing arguments as to the cause of it. The homeowners submit there was no evidence there was anything unusual about the installation of the window which added to the moisture load such that the cladding should not have been expected to be able to manage it. But that assertion overlooks evidence the window had been poorly designed and executed, and even Mr Wutzler accepted this kind of window was notorious for failing. The window leaked inside, rather than outside.

[356] The homeowners also challenge what they describe as the Judge's "theory" of overflowing gutters because it is inconsistent with the absence of any high moisture level readings higher up the building. However, that is incorrect because there was evidence of readings in two locations midway up the building and one reading even higher. Mr Wutzler also accepted there was signs of water ingress in the soffit above the dining room. We note too that leaks, possibly from overflowing gutters, were the reason why Mr Wutzler had first visited the property. There was also evidence from Ms Johnson which Mr Wutzler did not directly contradict that an insufficient number of downpipes had been installed.

#### *Woodhouse*

[357] This was also a duplex. Unlike Bay Lair, both units were involved in the litigation. One unit was owned by the appellant Ms Fowler and the other unit by Mr Woodhead. Ms Fowler was an original owner who had seen the house being built

in 2000. The relevant JHTI was the 1998 version. Mr Woodhead purchased his unit in 2015.

[358] The damage at this property included damage apparent at the base of some Harditex sheets and damage caused by movement.

[359] The Judge found there were clear building defects associated with each of the locations relied on by the homeowners as illustrating inherent defects. The building defects in question were: non-compliant sheet layout, structural deficiencies, the failure to use sealant at some penetrations, and a very poor coating job at the base of the sheet despite ample ground clearance to enable this to have been done properly.<sup>199</sup>

[360] On appeal, the homeowners take issue with the Judge's reliance on these alleged building defects. They say there was evidence that although the primary consequence of poor sheet layout is cracking, it can also occur even where the sheet layout is compliant for example at sheet joints. And that in any event, there was evidence of water ingress and damage in numerous areas away from instances of poor sheet layout and also away from cracks associated with structural deficiencies. They say further that poor sealing and sealing breakdowns applied only to some limited locations.

[361] In our view, these submissions understate the significance and extent of the building defects. The testimony from a structural engineer called by James Hardie was that the movement and cracking was due to a number of interconnected reasons, including but not limited to sheet layout. The other reasons included incorrect installation of the timber framing and bracing elements, as well as a failure to comply with the applicable JHTI in relation to installation of both vertical and horizontal control joints.

[362] The description of the coating as a "very poor" job was given by one of the homeowners' own witnesses, Mr Moginie, an approved supplier of coating and jointing products for use with Harditex, after he was shown a photo of the Fowler

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<sup>199</sup> At [509].

elevation. In various places the base of the sheet was uncoated with no sign of any coating having ever been present.

[363] The homeowners' statement of claim admitted in relation to the Woodhouse property that:

The bottom edges of the cladding sheets at the base of elevations are only partially sealed in places by the texture coating leaving exposed raw fibre cement exposed on parts of the bottom edges. There was no apparent pre-sealing of bottom edges.

[364] There was evidence too that at each of the relevant base of sheet locations the base had not been properly texture coated. There was also evidence that solid plaster had been applied to the foundation up to the cladding creating water reservoirs. Further, in some places the plaster was in contact with the uncoated sheet, thereby preventing drainage and holding water against the uncoated sheet.

[365] Having regard to all that evidence, it is hardly surprising the Judge was driven to the conclusions he reached about this property. We agree with them.

#### *San Vito*

[366] Construction of the San Vito property began in mid-July 1997 at which time the applicable JHTI was the 1996 version. It is unclear when construction was completed but a final building inspection took place on 16 January 1998 with a code compliance certificate issued in July 1999.

[367] Unfortunately, San Vito was only nominated as a test property after it had been demolished in late 2018. The fact of a pending demolition had the benefit that it facilitated invasive and destructive testing by Mr Wutzler. On the other hand, the demolition inevitably reduced the probative value of the building. It meant too that the James Hardie representatives were unable to assess Mr Wutzler's analysis against the site.

[368] The main damage was around the windows and at the base of sheet.

[369] The Judge described San Vito as “representative of a poor build” involving “a litany of errors”.<sup>200</sup> He identified the latter as including incorrect framing and bracing, misaligned framing, poor sheet layout, sheet joints without any support under them, missing relief joints, incorrectly configured h-mould, missing capillary gaps, poor ground clearance, and poor window detailing.<sup>201</sup> In the Judge’s view there was “no doubt” that the construction of the windows had led to much of the damage.<sup>202</sup>

[370] The homeowners do not deny the existence of the workmanship issues but submit they were isolated failings and not the primary mechanisms of failure. They further note that in addition to blaming the parapets, Ms Johnson accepted there was water ingress occurring at the base of the sheet.

[371] As regards the base of the sheet, what Ms Johnson actually said was that where it appeared moisture uptake may have been occurring at the base of the sheet, it was due to the extensive non-compliance with the JHTIs. She also identified potential moisture ingress points above the two locations relied upon by Mr Wutzler. The latter acknowledged that at one of the locations, most of the water ingress appeared to be from above.

[372] The homeowners also assert the Judge wrongly stated polystyrene plant-ons did not feature in the evidence. This was wrong because there was evidence about the plant-ons and it was important evidence.

[373] We agree that, contrary to what is said in the judgment, Mr Wutzler did address the significance of plant-ons in several places in his evidence. The evidence was to the following general effect.

[374] Polystyrene plant-ons (sometimes called “architectural shapes”) were common for aesthetic reasons during the period. They were installed around the windows at San Vito. The windows were face fixed and not recessed which necessitated the need for a junction between the plant-ons and the aluminium sill of the window frame. Plant-ons were expressly mentioned in the JHTIs and because of the vulnerability of

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<sup>200</sup> At [523].

<sup>201</sup> At [523].

<sup>202</sup> At [525].

the plant-on/sill junction to water ingress Mr Wutzler was critical of the absence of any instruction as to how the installer should protect those vulnerable junctions. As part of his testing at San Vito, Mr Wutzler introduced dyed water into the polystyrene plant-on above several windows. He testified that in time the dyed water emerged from the base of the plant-on as well as emanating from under the bottom of the plant-on at the sill. He also stated there was evidence of historic water staining.

[375] This evidence was however challenged in a number of respects. Ms Johnson was concerned about the integrity of the testing, some of which involved Mr Wutzler breaking the texture coating at the plant-on/wall junction and forcing water under pressure into the broken area. Ms Johnson's evidence was that water can only penetrate behind the plant-ons if the texture coating is poorly applied or poorly maintained. She also identified the following construction faults with the windows:

- (a) the lack of sealing of the notches in the cladding;
- (b) lack of plastering or meshing of the plant-ons;
- (c) the installation of the plant-ons such that a gap was left behind the windowsill and the top of the plant-ons; and
- (d) lack of sealant, at the time of construction, to the junction between the plant-on and the frames.

[376] Mr Wutzler accepted some but not all of these workmanship defects. The Judge was of course entitled to prefer the evidence of Ms Johnson.<sup>203</sup> Our view is that given the cumulative effect of the many workmanship issues at this property and the fact of its demolition, it would be wrong to rely on San Vito as illustrating inherent defects with Harditex.

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<sup>203</sup> For example at [527].



*Ambassador*

[377] The Ambassador was a motel complex comprising three buildings, one of which was a test property. The building is part single-storey and part two-storey and was constructed in 1996. The applicable JHTI was the 1996 edition.

[378] Unfortunately, it was not nominated as a test property until after it had been re-clad. Although the re-cladding had not been completed at the time Ms Johnson was invited to visit the property, it was well underway. Contrary to a submission made by the homeowners, we consider those circumstances must inevitably impact on its probative value as a test property.

[379] Ms Johnson opined that the primary source of moisture ingress was the failure of the waterproof membrane used on the balconies, and that was the reason a re-cladding had been necessary. Mr Wutzler accepted this was an issue but stated there was other damage which was not related to the balconies, and which exemplified the deficiencies of Harditex. The Judge recorded the deficiencies relied on as being problems around an h-mould along one wall — said to demonstrate the inability of the Harditex system to manage moisture that infiltrated — and windows as a source of moisture ingress.<sup>204</sup>

[380] On appeal, the homeowners say this was an inaccurate statement of their case because evidence was also provided in respect of other h-mould locations and also apron flashings. They say further that the Judge erred in relying on an unexplained departure from a specific design variation regarding the h-mould that had been specified in the consented plans for the building. This is said to be an error on the part of the Judge because what mattered for the purposes of the litigation was not the plans but whether the installation was in accordance with the JHTI, which they say it was. Further, in their submission, none of the other workmanship defects impacted on the performance of the h-mould on the gable wall where there was a significant amount of damage.

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<sup>204</sup> At [529].

[381] However, we are not persuaded the evidence did establish compliance, or even material compliance, with the JHTI. For example, not one of the h-mould butt joints was sealed and properly texture coated.

[382] Mr Wutzler himself identified approximately 15 different workmanship or compliance issues that directly relate to weathertightness.

[383] Ms Johnson identified a further nine construction or workmanship defects identified in the locations where destructive testing had occurred. These included:

- (a) inadequate cladding coverage at the top of walls;
- (b) insufficient cladding batten size, meaning cladding could not be attached without penetrating the h-mould or flashings;
- (c) careless cladding sheet layout, which did not ensure fixings aligned with and penetrated the cladding battens;
- (d) incorrect installation and attachment of the h-mould;
- (e) no installation of movement control joints;
- (f) internal linings that were not waterproof;
- (g) likely non-installation of damp proof course between a bottom cladding batten and foundation wall;
- (h) poorly installed waterproof membranes at the perimeter of balconies and flat roofs; and
- (i) poorly folded and lapped roof and cap flashings.

[384] Having regard to all the evidence relating to this property, we are not persuaded there were other operative causes, for which Harditex was responsible, that materially contributed to the damage caused by defective workmanship.

*Carnelian*

[385] This property was a two-storey building with Harditex being used for the cladding on the upper storey, and the lower storey having a brick veneer. The base of the Harditex sheet was thus installed along a junction between the two stories. The house was constructed later than the other test properties, being built in 2002. The applicable JHTI was the 1998 version.

[386] Unfortunately, this was another property which was nominated as a test property after a re-cladding had been completed. The Judge found that Ms Johnson had only limited access to the property beforehand.<sup>205</sup> He also found there had been significant moisture ingress from incorrectly constructed decks and balustrades, and that there was a movement issue with the house.<sup>206</sup> We agree with those findings.

[387] The key focus on appeal is the further finding that the problems at the property were solely attributable to it being badly built.<sup>207</sup> The homeowners say in reaching that conclusion the Judge failed to take into account evidence of moisture uptake at the base of sheets in areas away from cracking at sheet joints and where there were no issues with coating, ground clearance, or capillary gap. It is also contended that the locations where there was damage around the windows and the base of sheets were well away from the deck and deck balustrade.

[388] In our view, this criticism of the Judge takes no account of the fact that the Harditex/brick veneer inter-storey junction was a bespoke construction which detracts from its value as an exemplar of the JHTI base of sheet detail. Further, the criticism of the Judge's findings is itself based on a selective analysis of the evidence. It ignores evidence of inadequate texture coating that was applied, and also overlooks that most locations of damage were in fact in relatively close proximity to the decks. It ignores too evidence that the structural movement caused by poor workmanship likely impacted on the nails at sheet base locations.

[389] We are not persuaded the Judge erred in his assessment of this property.

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<sup>205</sup> At [533].

<sup>206</sup> At [534].

<sup>207</sup> At [534].

*Golf Road*

[390] This property was a two-storey standalone house built in the late 1990s. The relevant JHTI was the 1996 version. The property was relied on by the owners as evidencing water ingress and damage at the base of sheets and h-moulds. It was also common ground that the house contained a range of high-risk features.

[391] Unfortunately, although this property was inspected several times by Mr Wutzler, the new owners of the property (who were not involved in these proceedings) refused to allow entry to the James Hardie experts. In light of this, the Judge held Golf Road should not have been used as a test property. He said it was unclear how the Court could fairly place reliance on the analysis of only one party.<sup>208</sup>

[392] On appeal, the homeowners suggest the approach taken by the Judge contrasts with his acceptance of the RDH test result despite Mr Wutzler being unable to view the testing. They submit further that despite Ms Johnson being denied access to the property, she did have access to Mr Wutzler's photos and was able to produce 60 pages of evidence about the property.

[393] To the extent these submissions allege inconsistency and lack of even-handedness on the part of the Judge, we do not accept them. There is, in our view, a significant difference between preventing a person from being able to conduct a detailed inspection of a building as opposed to not inviting a person to observe a laboratory test. That is especially so given the homeowners' emphasis on the test properties.

[394] It is correct that Ms Johnson provided evidence on the Golf Road property in the form of a schedule, but in terms of length it was shorter than other schedules and more importantly identified many "unknowns". Those identified "unknowns" included matters relating to the base of the sheet and the h-mould. The problems arising from her inability to inspect the property were compounded by a long history of past remedial work. It is also unfortunate that Mr Wutzler did not, it seems, disclose all his photos.

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<sup>208</sup> At [536].

[395] We agree with the Judge that in all the circumstances this property cannot properly be relied on as evidencing any failings of Harditex.

*The Esplanade*

[396] This property is a two-storey stand-alone building built in 1996 and 1997. The relevant JHTI was the 1996 edition.

[397] It appears to have been common ground that this property contained many high-risk features and that the detailing — particularly on the front elevation and the upper storey deck — was poor. There was also uncertainty as to whether the unusual detailing was the original construction.

[398] The evidence of the James Hardie experts, which the Judge accepted, was that there were multiple workmanship problems at the property and departures from the JHTI that had allowed moisture ingress. In particular, the Judge accepted that none of the JHTI requirements regarding the h-mould had been complied with and that, in breach of the requirements, the cladding had been continuously nailed through the h-mould.<sup>209</sup> The cladding had been so poorly installed that Ms Johnson questioned whether it had been undertaken by a qualified carpenter.<sup>210</sup> The Judge further accepted that the base of sheets had not been coated, and that the head flashings had been wrongly installed, as had the damp proof membrane.<sup>211</sup>

[399] The Judge concluded by saying:

[541] I do not accept that a building of this quality can be used to provide proof of the inherent flaws. The need for the plaintiffs' expert to focus on only one part of the house is telling, and inevitably undermines the legitimate value that can be taken from it. The little that is known of the history when that is considered in light of the analysis by Mr Sylvia and Ms Johnson, is significant.

[400] The reference to the house's history is a reference to a letter of concern on the council file from a neighbour who was a builder. He had quoted for the job to build the Esplanade and although the owner had accepted his quote, the neighbour had

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<sup>209</sup> At [540].

<sup>210</sup> At [539].

<sup>211</sup> At [540].

pulled out because he expected the owner would ignore regulatory requirements during the building process and plead ignorance later.

[401] On appeal, the homeowners say the Judge was wrong to rely on the letter because it was not relevant to weathertightness. Also not relevant, in their submission, was the non-compliance with the JHTI h-mould requirements. They also contend that contrary to the Judge's finding, the evidence of both Mr Wutzler and Ms Johnson established the base of sheets were coated.

[402] In our view however, this somewhat overstates the evidence about coating. The best that could be said was that there was some incomplete coating. Further, in two base of sheet locations that had been partially coated, and where Mr Wutzler had made cut outs, Mr Wutzler accepted that one location might be affected by water coming down from above while, according to the evidence of the James Hardie experts, the second cut out was near a gap in the cladding enabling water to run directly into the wooden timber framing.

[403] As for the h-mould, not only was there evidence of incorrect nailing, but the sealant had not been applied to the ends of the h-mould and the bottom edge of upper sheets had not been coated.

[404] Like the Judge, we are not persuaded that a building of such poor quality provides a cogent test of the Harditex system in action.

### *Portsmouth*

[405] Portsmouth was a two-storey house constructed in around 1996 or 1997 by or on behalf of the current owners. The relevant JHTI was the 1996 version. According to the appellants, the evidence relating to this property "established" that Harditex had contributed to damage from the base of sheet and window defects.

[406] The Judge however considered the property was "another poor vehicle through which to demonstrate inherent flaws". He came to that opinion because of the limited information about its in service history, the "plain" building issues and the fact it did

not have a code compliance certificate.<sup>212</sup> The Judge also appears to have been concerned by the fact that Ms Johnson was denied access to the interior of the house and denied the opportunity to do any destructive testing.<sup>213</sup>

[407] On appeal, the appellants say the fact of limited information about in service history was not relevant because none of the elements exposed by Mr Wutzler's destructive testing had been the subject of repairs. Also not relevant, in their submission, was the lack of a code compliance certificate because there was no evidence this was related to the performance of the cladding.

[408] We disagree. In her evidence Ms Johnson quoted from a letter between the council and the owners, which was on the council file. The letter specifically stated that the council needed to be assured the cladding fixed to the house met the requirements of the building code before a code compliance certificate could be issued. The certificate was never issued. The cladding was one of 12 matters identified as requiring attention following a council inspection on 31 March 2005.

[409] One of the owners of Portsmouth provided a brief of evidence which was admitted by consent. His evidence is silent on the issue of the code compliance certificate and why it was not issued. The evidence is short and only addresses one aspect of the in-service history, namely maintenance. In those circumstances, it is in our view a reasonable inference to draw that the cladding installation was never approved.

[410] Further, a bland assertion that the evidence "established" a causal connection between the Harditex system and the damage also ignores cogent evidence of many workmanship defects relating to the base of sheet and the windows, which bore on weathertightness.

[411] We conclude that none of the test properties provided a proper test of Harditex.

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<sup>212</sup> At [544].

<sup>213</sup> At [542].

## **The claim under the Fair Trading Act**

[412] The homeowners claimed that various statements in the different iterations of the JHTIs — dating back to the first edition in 1987 — as well as statements in marketing materials breached ss 9 and 10 of the Fair Trading Act. Section 9 provides that no person in trade shall “engage in conduct that is misleading or deceptive or is likely to mislead or deceive”. Section 10 states that no person in trade shall “engage in conduct that is liable to mislead the public as to the nature, manufacturing process, characteristics, suitability for a purpose, or quantity of goods”.

[413] The claim under the Fair Trading Act alleged two categories of misleading conduct. The first category concerned statements about the qualities or attributes of Harditex including in particular what were submitted to be “repeated [James Hardie] claims that Harditex has proven durability, is completely unaffected by water and is not subject to rot or decay”. The second category was conduct relating to product design and development.

[414] The Judge held that, in the circumstances of the case, conduct in the second category did not constitute conduct “in trade” for the purposes of liability under ss 9 and 10 of the Fair Trading Act.<sup>214</sup> The grounds of appeal included a challenge to this finding, but it was not pursued in submissions. We therefore do not address it further.

[415] In relation to the Fair Trading Act issues that are before us, the Judge made the following key findings:

- (a) The target audience was competent professionals with the necessary skills and knowledge to undertake the construction of a house, who were capable of reading a JHTI as a whole and who brought to the exercise knowledge of the building industry and the understanding that the JHTIs augmented other knowledge and literature.<sup>215</sup>

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<sup>214</sup> At [841]–[844].

<sup>215</sup> At [848].



- (b) None of the statements in the JHTIs about Harditex sheets, the Harditex system, buildability, and regulatory requirements was false or misleading.<sup>216</sup>
- (c) Even if there had been breaches of ss 9 and 10, in the absence of any reliance on the statements in the JHTIs by either the named appellants or the builders of their properties (Bay Lair and Woodhouse), causation was problematic.<sup>217</sup>

[416] On appeal, the homeowners challenge each of these three findings.

*The target audience*

[417] For the purposes of buildability, the Judge held that the relevant yardstick or standard was that of a competent builder. We have agreed with that finding.<sup>218</sup>

[418] For the purposes of identifying the target group of the JHTIs, the Judge at least in one part of the judgment, drew a distinction between the earlier versions of the JHTIs and the remainder. In particular, he noted that the 1987 JHTI was a mixture of brochure and technical data. He found it had a broad target audience and included potential homeowners. But by 1991 the JHTIs were, in his assessment, more clearly aimed at industry participants given the predominance of technical content.<sup>219</sup>

[419] The issue raised on appeal is whether this was wrong and potential homeowners remained an operative part of the target audience after 1991, for the purposes of liability under the Fair Trading Act, as argued by the homeowners. The homeowners also contend that in any event “industry participants” should be taken to include a wide and diffuse group of people with a range of skills and experience.

[420] For the reasons already outlined in our discussion of buildability,<sup>220</sup> we reject these submissions. Even the 1987 JHTI included an express statement that “the

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<sup>216</sup> At [887].

<sup>217</sup> At [850]–[851].

<sup>218</sup> Above at [309]–[314].

<sup>219</sup> Substantive judgment, above n 5, at [698].

<sup>220</sup> Above at [303]–[333].

systems recommended in [the] [b]rochure [were] formulated along the lines of good building practice and [were] intended to assist experienced tradespeople in construction procedures”. It also expressly stated that it was “not intended to be an exhaustive statement of all relevant data”.

[421] We therefore proceed, like the Judge, on the basis that at least by 1991 the target group was designers and builders capable of reading any relevant JHTI as a whole and having a good knowledge of the building industry.

[422] There are two further complications. The first is that although Bay Lair was designed, permitted and constructed in 1992, the Cridge and Unwin statement of claim purports to rely on statements contained in the 1987, 1988 and 1989 JHTIs despite the fact they had all been superseded by the 1991 version. For his part, the Judge correctly identified the 1991 JHTI as being the one applicable to Bay Lair.<sup>221</sup>

[423] The second complication is that in our view any claim based on misleading conduct arising out of any of the JHTIs, except the two 1998 versions, is undoubtedly time-barred. The limitation period under the Fair Trading Act is three years. And the legal position at the relevant time was that the three-year period started to run from the date of the misleading conduct.<sup>222</sup> These proceedings were only issued in 2015.

[424] In coming to that conclusion, we have not overlooked an argument raised by the homeowners to the effect that the continuation of some of the impugned statements in the 1998 JHTIs brings the homeowners’ claims based on earlier iterations within time. In support of that proposition, the homeowners rely on a 1997 High Court decision *Griffins Foods Ltd v District Court*.<sup>223</sup> That case concerned an alleged misrepresentation of the characteristics of a product. It was held, for the purposes of the criminal offence under s 10 of misleading the public, that time did not run from the date the product in question was first launched if it continued to be marketed on the same basis.<sup>224</sup> However, in the context of individual damages claims where each

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<sup>221</sup> Substantive judgment, above n 5, at [858].

<sup>222</sup> Fair Trading Act, s 43(5), as it then was; and *Gosper v Re Licensing (NZ) Ltd* [1998] 3 NZLR 580 (CA) at 584–585.

<sup>223</sup> *Griffins Foods Ltd v District Court* (1997) 7 TCLR 710 (HC).

<sup>224</sup> At 714.

edition of the JHTI was superseded by the next often with different wording and where the act of reliance took the form of the use of the cladding in a specific building, we are not persuaded the same reasoning applies.

[425] As regards the Woodhouse units, the applicable JHTI was the 1998 version. The Fowler and Woodhead proceedings were issued in 2015. Whether a claim based on either of the 1998 JHTIs is time-barred under the Fair Trading Act is less clear-cut because after 3 May 2001 the limitation provision was amended by the introduction of a reasonable discoverability test.<sup>225</sup> On the other hand, far fewer of the statements relied on as constituting misleading conduct are contained in the 1998 versions.

[426] As for the other test properties, the relevant JHTI for five properties was the 1996 edition and for one property the 1998 edition.

[427] James Hardie pleaded a limitation defence to the Fair Trading Act claims. The Judge however took the view it was unknown what versions of the JHTIs applied to other properties in the class and therefore he was prepared to consider all of them.<sup>226</sup> James Hardie takes issue with that approach. Given our view that claims on all the JHTI editions, except the 1998 versions, must be statute barred, we agree it was unnecessary for the Judge to consider all versions. However, for completeness, we undertake the same exercise.

#### *False and misleading conduct*

[428] As will be obvious, our earlier findings regarding moisture management, durability and buildability significantly impact on the claims of misleading conduct under the Fair Trading Act. It was acknowledged for example that if we were to agree with the Judge's conclusion on the "decay thesis" (which we do) then the challenge to the veracity of statements about sufficient durability to meet the building code bracing requirements must fail. Other statements regarding the attributes of Harditex were however advanced before us as still actionable in their own right independently of the fitness for purpose findings.

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<sup>225</sup> Fair Trading Amendment Act 2001, ss 2–4.

<sup>226</sup> Substantive judgment, above n 5, at [694]–[695].

[429] The relevant JHTI statements can be grouped under the following headings:<sup>227</sup>

- (a) the Harditex sheet was proven by testing;<sup>228</sup>
- (b) Harditex cladding provides durability and peace of mind;<sup>229</sup>
- (c) Harditex does not rely solely on the texture coating for its performance;<sup>230</sup>
- (d) Harditex is unaffected by water and moisture, and does not rot;<sup>231</sup> and

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<sup>227</sup> Note the quotes in the following footnotes are materially those found in the relevant JHTIs, however some inconsequential variations — such as emphasis, <sup>TM</sup>, and slight wording differences — have been omitted.

<sup>228</sup> 1991 and 1992 JHTIs “[Harditex sheets] have been tested by BRANZ to technical paper P21 and are suitable for use in conjunction with either NZS 3604:1990 or NZS3604:1984” and “Harditex has been extensively tested and evaluated, and in the opinion of BRANZ, the bracing ratings shown are appropriate for use with NZS 3604:1990”; 1993 and 1994 JHTIs “Harditex has received the following appraisals: BRANZ Appraisal Certificates Nos 229 (1993) and No. 243 (1993)”; and 1995–1998 JHTIs “[b]racing ratings have all been determined by BTL (BRANZ) testing and are suitable for use in conjunction with NZS 3604: 1990” and “Harditex has gained the following BTL/BRANZ Appraisal Certificates: No. 229 (1995) James Hardie Wall Bracing Systems No. 243 (1995) Harditex – Exterior Substrate for Coating Systems”. Additionally, the 1991–1994 JHTIs mention the testing of coating systems.

<sup>229</sup> 1987 JHTI “[o]ffering the durability and peace of mind of fibre cement, Harditex is the complete cladding system for today’s architecture”; 1988 and 1989 JHTIs “[o]ffering the durability and peace of mind of fibre cement, Harditex is the complete cladding system for today’s monolithic trend in architecture”; 1991–1994 JHTIs “[o]ffering the durability and peace of mind of fibre cement, Harditex is the complete cladding system for today’s architectural trends”; 1995–1998 JHTIs “Harditex is the ideal lightweight cladding for a monolithic finish, yet it provides you with the comfort and peace of mind that comes with the stability and strength of James Hardie fibre cement” and “[Harditex] has been developed to provide a durable substrate for a range of textured coatings”.

<sup>230</sup> 1987–1994 JHTIs “Harditex is an exterior cladding in its own right and does not rely solely on the texture coating for its performance as do many other systems”.

<sup>231</sup> 1987–1989 JHTIs “products with proven durability. Unaffected by water, they do not rot”; 1987 and 1988 JHTIs “[u]nder normal conditions Hardie’s Building Products are not affected by insects, termites, sunlight or steam and will not split or rot”; 1988 and 1989 “[f]ibre cement products will not rot, burn or split and are immune to water damage and termite attacks, therefore they are one of the most durable building products available”; 1989 JHTI “[t]he products are not affected by sunlight, moisture, dry rot, insects or steam”; 1991–1994 JHTIs “the Harditex cladding sheet is a lightweight fibre cement substrate which is immune to permanent water damage, and which will not rot or burn”; 1991 JHTI “fibre cement is completely unaffected by water. It never rots or decays”; 1992–1994 JHTIs “fibre cement is unaffected by water. It never rots or decays”; 1995–1998 JHTIs “the Harditex cladding sheet is a lightweight fibre cement substrate which is resistant to permanent moisture damage and will not rot or burn”; 1995 and 1996 JHTIs “Harditex fibre cement sheets are highly resistant to permanent water damage and will not rot”; and 1995–1998 JHTIs “Harditex is not susceptible to long-term moisture damage and when the jointing, sealing, flashing and coating details are maintained the Harditex is expected to have a serviceable life of at least 50 years”.

- (e) if correctly maintained, Harditex has a serviceable life of at least 50 years.<sup>232</sup>

[430] The Judge held it was not misleading to say the sheet had been proven by testing, because the evidence established it had been.<sup>233</sup> On appeal, the homeowners appear to dispute the existence of any such evidence and submit the results from the Allunga testing in fact support the opposite conclusion to that claimed in the JHTIs. However, for the reasons already discussed, the Allunga results are of very limited probative value. Further, there was evidence of favourable pre-release testing conducted by James Hardie as well as testing conducted by BRANZ.

[431] The Judge acknowledged that some of the other JHTI statements were false and misleading if read as absolute propositions. However, he went on to hold that the product was not being sold in its raw state and that the target audience would have understood the implicit qualification, namely that these attributes held good provided the Harditex sheet was properly installed, texture coated and maintained in accordance with the JHTI and good practice.<sup>234</sup> If those things were done, it was a durable substrate, immune to permanent water damage and would not rot or burn.

[432] This was not a complete answer, as the Judge himself accepted, to the statement in the 1991 edition that “fibre cement is *completely* unaffected by water”.<sup>235</sup> That is because even on James Hardie’s own evidence the sheet was absorbent and had a wet-dry cycle. The Judge however concluded the statement was not misleading when seen in context. Rather, it should be viewed as “clumsy shorthand” for the fact the sheet will return to its initial state if allowed to dry.<sup>236</sup>

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<sup>232</sup> 1993 and 1994 JHTIs “[t]he ability of Harditex to perform as bracing for at least 50 years is dependent on remaining dry in service (one or two accidental brief wettings per year expected). The various coatings and jointing systems will need to be maintained so as to continue to exclude water and this may require the replacement of some of these items during the life of the building”; and 1995–1998 JHTIs “[t]he Harditex sheet system meets the performance requirements of NZBC Clause B2.3(a) of 50 years as long as the integrity of the various coating systems is maintained” and “Harditex is not susceptible to long-term moisture damage and when the jointing, sealing, flashing and coating details are maintained the Harditex is expected to have a serviceable life of at least 50 years”.

<sup>233</sup> Substantive judgment, above n 5, at [866].

<sup>234</sup> At [864].

<sup>235</sup> At [865] (emphasis added).

<sup>236</sup> At [865].

[433] On appeal, the homeowners submitted the Judge erred in reading down the claimed attributes in this way. They also pointed out that none of the statements at issue contained any such proviso or qualification and further that the implication of a proviso was contrary to the express representations that Harditex does not rely solely on coating for its performance.

[434] We disagree and consider the approach taken by the Judge as being entirely consistent with case law that the impugned conduct must be considered as a whole and in context.<sup>237</sup> The need to texture coat the sheeting was always an express requirement in the JHTIs. Also, from the very beginning of the JHTIs, it was stated that the work of texture coating should only be undertaken by a licensed applicator. This was a clear indication that texture coating was very important.

[435] In our assessment, no one reading any of the JHTIs could reasonably have interpreted the representation that Harditex did not rely solely on the texture coating for its performance to mean texture coating was somehow irrelevant and not required or had no impact on performance. By 1991, the JHTI included a statement that James Hardie insisted on high standards for any texture coating manufacturer recommended for use on Harditex. Coating was always an integral part of the system.

[436] That said, we consider the homeowners are on stronger ground about the potentially misleading nature of the 1991 claim that Harditex is “*completely* unaffected by water”.<sup>238</sup> There is some force in their argument that viewing it as “clumsy shorthand” may have been unduly favourable to James Hardie and that “the target audience could not possibly have worked out that there were periods when the cladding lost strength from water absorption but that ultimately all would be well”. Interestingly, it appears no other JHTI made the “completely unaffected” claim either before or after 1991. After 1991, the word “completely” was removed.

[437] In addition to claims about the attributes of the sheets, the homeowners also relied on statements made about the Harditex system. On appeal, their counsel

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<sup>237</sup> *Parkdale Custom Built Furniture Pty Ltd v Puxu Pty Ltd* (1982) 149 CLR 191 at 199, cited with approval in *Geddes v New Zealand Dairy Board* CA180/03, 20 June 2005 at [80].

<sup>238</sup> Emphasis added.

submitted that the most significant of these was a statement contained in the 1987 to 1994 JHTIs that “[o]ffering the durability and peace of mind of fibre cement, Harditex is the complete cladding system for today’s architectural trends”.<sup>239</sup>

[438] The homeowners contend the Judge wrongly characterised this as “a broad marketing type proposition” and submit that rejecting liability on those grounds would render the Fair Trading Act ineffective.<sup>240</sup> However, the submissions do not address why the statement is considered misleading and it is unclear to us whether the objection is taken to the use of the word “complete” to describe the cladding system or the use of the word “durability”. If the latter, for reasons already traversed, we would not perceive that to be misleading. If the former, “complete” would seem an accurate description.

### *Causation*

[439] Section 43 of the Fair Trading Act relevantly provides that relief may be granted to a person who has suffered loss or damage “by” conduct that breaches ss 9 or 10. It is well established that the word “by” requires a causal nexus between the misleading conduct and the loss or damage.

[440] The leading authority on causation under the Fair Trading Act is the decision of the Supreme Court in *Red Eagle Corp Ltd v Ellis*.<sup>241</sup> In that case, the Court endorsed the following propositions:<sup>242</sup>

- (a) The language in s 43 requires a practical or common-sense concept of causation.
- (b) The court needs to ask whether the defendant’s conduct in breach of s 9 was an operating cause of the claimant’s loss or damage. It need not be the sole cause, but it must be an effective cause.

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<sup>239</sup> This specific wording was that in the 1991–1994 JHTIs, however the 1987–1989 JHTIs were substantively the same.

<sup>240</sup> Substantive judgment, above n 5, at [877].

<sup>241</sup> *Red Eagle Corp Ltd v Ellis* [2010] NZSC 20, [2010] 2 NZLR 492.

<sup>242</sup> At [29]–[30].

- (c) There must be a clear nexus between the conduct and the loss or damage.
- (d) A claimant's own conduct may be an operating cause.

[441] To similar effect is the statement in a decision of this Court (quoted in *Red Eagle*)<sup>243</sup> that:<sup>244</sup>

[T]here must be a sufficient relationship between the impugned conduct and the loss or damage to make it reasonable to say that the loss or damage is the consequence of the conduct.

[442] In this case, there was no evidence that the named appellants were aware of the existence of the JHTIs at the time of purchase, let alone read them or specifically relied on any of the impugned statements. Nor was there evidence that the builders and designers involved in any of the test properties had engaged with the JHTIs. In those circumstances, the Judge concluded causation had not been established.<sup>245</sup>

[443] On appeal, the homeowners argue this finding was contrary to the broad approach to causation endorsed in *Red Eagle*. They argue that the builders must have relied on the JHTIs because they had to under the regulatory scheme. In those circumstances, the onus was on James Hardie to establish the builders had disregarded them. They also contend that in any event the Judge's finding was contrary to Canadian case law where manufacturers of medical products have been unable to avoid liability for inadequate warnings by asserting the claimant's doctor would or should have warned their patient.<sup>246</sup>

[444] We agree that a broad approach is taken to causation under the Fair Trading Act. The "but for" test does not apply and there can be more than one cause. However, the claimant must still prove some causal nexus. And here there was none. The claims of the homeowners under the Fair Trading Act and the negligence claim of the patients in the Canadian cases are not comparable. The homeowners'

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<sup>243</sup> At [29], n 19.

<sup>244</sup> *Cox & Coxon Ltd v Leipst* [1999] 2 NZLR 15 (CA) at 38 per Tipping J.

<sup>245</sup> Substantive judgment, above n 5, at [849]–[851].

<sup>246</sup> Referring to *Hollis v Dow Corning Corp* [1995] 4 SCR 634; and *Buchan v Ortho Pharmaceutical (Canada) Ltd* [1986] 54 OR (2d) 92.



Fair Trading Act claim is for damage based on positive assertions, not a failure to warn about possible risk.

[445] We conclude that, with one possible exception, none of the impugned statements amount to false or misleading conduct. Any claim based on the one possible exception must however fail because of the lack of a causal nexus and because it is in any event time-barred.<sup>247</sup>

[446] We turn now to the final topic for our consideration which concerns a general limitation issue raised by James Hardie regarding the application of the Limitation Act 1950 in relation to the negligence claim. We have already addressed the issue of time limitation under the Fair Trading Act at [423]–[427].<sup>248</sup>

#### **Were the negligence claims of the named appellants time-barred?**

[447] James Hardie contends it had a complete limitation defence to the negligence claims made by the named appellants, a defence which was not considered by the Judge.

[448] For the purposes of time limitation periods, the homeowners' claims in negligence are governed by the Limitation Act 1950. Although that Act has been repealed and replaced by the Limitation Act 2010, it continues to apply to claims based on actions and omissions before 2011.<sup>249</sup> It therefore applies to the claims in this case.<sup>250</sup>

[449] Section 4 of the Limitation Act 1950 relevantly provides that actions in tort cannot be brought after the expiration of six years from the date on which the cause of action accrued. It is therefore crucial to identify the date of accrual because it sets time running. The traditional view was that a cause of action accrued when every material fact which the plaintiff must prove in order to succeed had occurred or come

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<sup>247</sup> It is not necessary for us to address the application of disclaimer clauses in the JHTIs.

<sup>248</sup> James Hardie also raised a time limitation related issue arising from an amendment to the pleadings. We do not consider it necessary to address that issue which involves the application of well-established principles and is entirely case specific, with no bearing on the outcome.

<sup>249</sup> Limitation Act 1950, s 2A; and Limitation Act 2010, s 59.

<sup>250</sup> This was not disputed by the parties.

into existence (the occurrence test). In a negligence action, that meant the facts giving rise to a duty of care, the breach of that duty and the resulting damage — usually the last in time — all had to be in existence.<sup>251</sup>

[450] A series of cases in the 1980s and 1990s however held that for the purposes of a negligence action involving latent building defects, the date of accrual and hence the start date of the six-year limitation period was the date on which the damage was reasonably discoverable and not, as previously thought, when the defect was created, that is to say when it came into existence.<sup>252</sup>

[451] The reasonable discoverability test was applied by this Court beyond the building context to claims for exemplary damages in personal injury cases. The first was a claim against the perpetrator of sexual abuse and the second a negligence claim involving the manufacture and distribution of a medical product.<sup>253</sup>

[452] This judge-made doctrine of reasonable discoverability was developed to ameliorate the obvious injustice of a claim being time-barred before a plaintiff even knew or could reasonably have known they had suffered damage. The doctrine however raised the spectre of cases being heard many years after buildings had been constructed thereby imposing too onerous and unfair a burden on defendants and the insurance industry. The legislative response, designed to strike a just balance between those competing interests, was the introduction of an overriding 10-year longstop period in both the 1991 and 2004 Building Acts.<sup>254</sup>

[453] As noted above at [57], the 10-year longstop provisions under the Building Act do not apply to manufacturers of building products. However, because these proceedings were filed after 1 January 2011 and relate to actions or omissions before

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<sup>251</sup> *Williams v Attorney-General* [1990] 1 NZLR 646 (CA) at 678.

<sup>252</sup> See for example *Hamlin* (PC), above n 49.

<sup>253</sup> *S v G* [1995] 3 NZLR 681 (CA); and *GD Searle & Co v Gunn* [1996] 2 NZLR 129 (CA). In *Searle*, the plaintiff suffered from a condition which she only realised after reading a magazine article was due to a medical device. In *Murray v Morel & Co Ltd* [2007] NZSC 27, [2007] 3 NZLR 721, at [2] per Blanchard J, [38] per Tipping J, [101] per McGrath J and [142]–[143] per Henry J, the Supreme Court however rejected the suggestion that reasonable discoverability was of general application for limitation purposes.

<sup>254</sup> Building Act 1991, s 91; and Building Act 2004, s 393.

that date, they are subject to a 15-year longstop provision inserted into the 1950 Limitation Act in 2011.<sup>255</sup>

[454] As regards the date that time started to run, Mr Hodder argues that in this case the correct test to apply is the occurrence test and not the reasonable discoverability test. Therefore, he says, time started to run when the named appellants first acquired their properties with the latent defects, which, with one exception, was more than six years before they issued their proceedings.<sup>256</sup> In support of that proposition, Mr Hodder referred us to a Supreme Court decision where it was said that where a product (in that case a prenuptial agreement) is created with an inherent flaw, damage arises from the outset rather than when the flaw ultimately manifests itself.<sup>257</sup>

[455] In our view, for limitation purposes the present case is however more appropriately considered in the defective building context. In that context, the rationale for applying the reasonable discoverability test is that the homeowners' claim is one for economic loss (the diminution in value of the building). Therefore, as a matter of logic, it is only when the latent defect is known or manifests itself in obvious signs pointing to its existence, that the value of the house drops. Until then, the owner suffers no loss whatsoever. A house with a hidden defect retains its value and can be sold.

[456] We see no reason as a matter of principle or logic why that test should not also apply where the hidden defect is created by the manufacturer of a key component of a building. Labelling it as a product liability claim does not inexorably drive the outcome. We therefore reject Mr Hodder's submission that the date of acquisition was the date the cause of action accrued.

[457] In the event we were to hold the named appellants could rely on the reasonable discoverability test, Mr Hodder submitted that the claims were in any event also statute barred under that test. He pointed out that even under the reasonable discoverability test, a plaintiff cannot postpone the start of the limitation period by shutting their eyes

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<sup>255</sup> Limitation Act 1950, s 23B. This provision was not raised by either party.

<sup>256</sup> The exception is Mr Woodhead, who purchased his property the year the claim was filed. James Hardie does not maintain that they have a limitation defence against him.

<sup>257</sup> *Thom v Davys Burton* [2008] NZSC 65, [2009] 1 NZLR 437.

to the obvious,<sup>258</sup> and contended that in the circumstances of this case that would mean the clock started ticking at the point in time at which a reasonable person would call in an expert.

[458] Developing that submission, Mr Hodder advanced the following argument. The leaky buildings crisis came to public attention about the time the Hunn report was released in August 2002.<sup>259</sup> The report highlighted the number of failures in direct-fixed monolithic building designs. The named appellants knew they had a property of that general character and their own claim was premised on the basis that by August 2002 a reasonable cladding expert would have regarded such a cladding system as inherently defective. Therefore, time started to run in August 2002 which meant a claim filed in 2015 was well out of time.

[459] There is an obvious irony in that submission, given James Hardie's insistence that Harditex was a sound product and it had no knowledge of any problems, or reason to be concerned.

[460] In any event, in our view, it would not be reasonable to expect every owner of a home with monolithic cladding to call in an expert to investigate whether the cladding on their house had a latent defect if the home was not demonstrating any of the well-publicised signs of weathertightness problems.

[461] Ms Cridge and Mr Unwin did obtain a pre-purchase report from a builder in November 2005, which noted rot to framing under the sub-floor access door. But the report writer did not identify any weathertightness issues nor did they recommend further investigation. Ms Fowler noted cracking in the cladding of her house, but, on several occasions, asked the builder to fix this and was satisfied with the repairs done. A professional report she acquired in 2015 noted that there were "[n]o obvious visible signs of mould, decay or water ingress".

[462] Mr Woodhead's evidence was that before purchasing the property in 2015, he obtained two pre-purchase reports, one of which was from a company which

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<sup>258</sup> *Hamlin* (PC), above n 49.

<sup>259</sup> Hunn report, above n 68.

specialises in cladding systems. Neither report raised weathertightness issues. Both said the property was sound. Mr Woodhead acknowledged he knew there was a leaky home problem with some monolithic clad properties, but the property he was buying had a steeped gabled roof, no balconies or water traps, wide soffits as well as what appeared to be good flashings around windows. It was only after a discussion with Ms Fowler that the alarm bells rang and he instructed Mr Wutzler's company to undertake testing. By then it was too late and he was legally committed to the purchase.

[463] Just as cracking and sticking doors in a house have been held insufficient to put a homeowner on notice they have defective foundations,<sup>260</sup> we are not persuaded that the matters relied upon by James Hardie had the effect of triggering the start of the limitation period under the 1950 Limitation Act in respect of the named appellants.

[464] We appreciate that because the 10-year longstop provisions in the Building Acts of 1991 and 2004 do not apply to manufacturers, adopting the reasonable discoverability test leaves manufacturers vulnerable to historic claims. However, that consideration must be tempered by the fact that in relation to proceedings filed after 1 January 2011 a 15-year longstop based on a manufacturer's negligent act or omission (whether that takes the form of the manufacture or supply of a defective product, a negligent misstatement or failure to warn) will apply under either the Limitation Act 1950 or the Limitation Act 2010.<sup>261</sup> For the purposes of these proceedings, filed in August and October 2015, that would appear to mean that at best for the homeowners, only claims about properties built after August or October 2000 would be in time. It is, however, not necessary for us to make any definitive finding.

### **Costs**

[465] Although the usual practice is for this Court to determine costs in its substantive judgment, counsel did not have an opportunity to make submissions on costs.

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<sup>260</sup> *Hamlin* (PC), above n 49; and *Hamlin v Bruce Stirling Ltd* [1993] 1 NZLR 374 (HC).

<sup>261</sup> Limitation Act 1950, ss 23A and 23B; and Limitation Act 2010, s 11(3).

[466] If counsel cannot agree on costs, and require a determination, we reserve leave for costs memoranda to be filed within 15 working days of the release of this judgment.

[467] It may assist counsel to indicate our provisional view that costs should follow the event both in relation to the substantive appeal and the unsuccessful application to adduce further evidence. We also provisionally consider costs should be calculated on the basis of a complex appeal, band B with certification for three counsel. Although James Hardie did not succeed on the duty and some aspects of the limitation issues, those matters occupied relatively limited time and would not, in our provisional view, warrant any reduction.

### **Outcome**

[468] The appeal is dismissed.

[469] In the event the parties cannot agree on costs and require a determination from the Court, leave is reserved for costs memoranda to be filed within 15 working days of this judgment.

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