

**IN THE HIGH COURT OF NEW ZEALAND
AUCKLAND REGISTRY**

**CIV 2009-404-008136
[2015] NZHC 862**

BETWEEN BODY CORPORATE 326421
 First Plaintiff

 WILLIAM MILLER AND RAEWYN
 MILLER & ORS
 Second Plaintiffs

AND AUCKLAND COUNCIL
 First Defendant

 BROOKFIELD MULTIPLEX
 CONSTRUCTIONS (NZ) LIMITED
 (in liquidation)
 Second Defendant

 WALKER ARCHITECTS LIMITED
 (in liquidation)
 Third Defendant

cont.../2

Hearing: 4 August - 12 September 2014

Appearances: C M Meechan QC, T J Rainey, G R Grant and J Heatlie for the
 Plaintiffs
 S A Thodey, L J Douglas, S B Mitchell and K M Parker for the
 First Defendant
 D T Broadmore for the Second Defendant
 No appearance for the Third to Sixth Defendants
 S C Price, D M Cross and N J Brazendale for the First Third
 Party
 M G Ring QC, A S McIntyre, M J Francis and M Cusack for the
 Second Third Party

Judgment: 29 April 2015

JUDGMENT OF GILBERT J

*This judgment is delivered by me on 29 April 2015 at 3.30 pm
pursuant to r 11.5 of the High Court Rules.*

.....
Registrar / Deputy Registrar

DOWNER EDI WORKS LIMITED
Fourth Defendant (Discontinued)

FAÇADE TECHNOLOGIES LIMITED
(in liquidation)
Fifth Defendant

CHARLES NORAGER & SONS
LIMITED
Sixth Defendant

AND

BOSTIK NEW ZEALAND LIMITED
First Third Party

ZURICH INSURANCE PLC AS LEAD
UNDERWRITER AND ON BEHALF OF
ALL UNDERWRITERS SEVERALLY
SUBSCRIBED TO POLICY
B 0901LB0810824
Second Third Party

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Introduction

[1] The plaintiffs are the body corporate and owners of residential units in a building called the Nautilus situated near Orewa Beach, north of Auckland. They claim that the Nautilus, which was constructed at a cost of some \$35 million between October 2002 and June 2004, suffers from such fundamental design and construction defects that it will cost over \$23 million to repair. The plaintiffs claim that each of the defendants is responsible for some or all of these defects. They seek compensation for their proportionate share of the remediation costs, the costs of temporary repairs, compensation for loss of use of the units while they are remediated and general damages for inconvenience.¹

[2] The Nautilus comprises 12 levels and is a mixed use development. There are shops and a café on the ground level where the main entrance to the tower is located. The next two levels are taken up with car parks. These three levels comprise the base of the building and have a wider footprint than the tower above. The podium above is split into two levels. A swimming pool and recreational facilities are on the lower podium which is landscaped with planter boxes and has a perimeter wall. The upper podium is immediately adjacent to the tower and features landscaped areas with planter boxes and gardens. The decks to the units located on the first level of the tower, level 4, are on the upper podium. The residential units are located on this level and the eight levels above.

[3] The plaintiffs claim that the Nautilus is not watertight and does not comply with the building code because of the following alleged defects:

- (a) Roof – the plant room was designed as an open air structure. Water has penetrated through the floor where plant has been installed and entered the building causing damage to the internal linings and structure of the building. Water is also penetrating around inadequately sealed skylights causing damage to timber trims and plasterboard linings.

¹ Not all of the owners of units in the Nautilus have participated in the proceeding. The second plaintiffs together hold 93.5 per cent of the total unit entitlement in the building.

- (b) Roof edge – the joints between the aluminium composite panels forming the roof edge have failed allowing water to enter the building damaging internal linings and wall framing.

- (c) The decks –
 - (i) The deck screed and waterproof membranes were incorrectly designed and installed allowing water to enter the soffit on the level below and cause damage to various structural and other elements of the building.

 - (ii) Corner overflows on some of the decks were inadequately designed, formed and waterproofed causing similar damage.

 - (iii) The waterproof membrane under the joinery at the threshold between the unit and the deck was incorrectly designed and installed allowing moisture to enter the joinery by capillary action and cause corrosion and carpet damage.

- (d) Balustrades –
 - (i) The full height glass balustrades were fixed in a structurally inadequate manner giving rise to the risk to safety from falling.²

 - (ii) The balustrade fixing channels are poorly sealed at the top and are not drained, allowing moisture to penetrate through screws fixing the channel to the concrete nib and cause damage to the timber packer as well as corrosion of the tray deck.

- (e) Cladding – the design, fabrication and installation of the cladding system was defective. As a result, water has penetrated through the

² Not all units have full height glass balustrades; some are half height.

joints between the aluminium composite panels causing damage to timber framed external walls and internal linings.

(f) Podium –

- (i) Incompatible waterproofing materials were used on the lower podium and the steps leading to the upper podium allowing water entry at the junction. This has caused corrosion of the concrete reinforcing steel.
- (ii) The perimeter walls have no capping allowing water to penetrate and cause corrosion and cracking.

[4] Rodney District Council issued the building consents for the Nautilus. At the time, it was the territorial authority responsible for performing the building control functions under the Building Act 1991 in this region. It also carried out inspections during the course of construction and issued code compliance certificates confirming that it was satisfied on reasonable grounds that the building work complied with the requirements of the building code. The first defendant, Auckland Council, is the successor to the liabilities of the former Rodney District Council. I will refer to Rodney District Council and Auckland Council as “Council”.

[5] The plaintiffs claim that Council was negligent in issuing the relevant building consents for the Nautilus, in carrying out its inspections and in issuing the code compliance certificates. The plaintiffs claim that Council is liable for all of the costs associated with the defects other than those relating to the skylights.

[6] The second defendant, Brookfield Multiplex Construction (NZ) Ltd (now in liquidation), contracted with the developer, Tamariki Ltd (also now in liquidation), to build the Nautilus as the head contractor. Tamariki subsequently assigned to the body corporate the benefit of all contractual rights, warranties and guarantees held by it as developer, including its rights against Brookfield Multiplex under the head contract. The plaintiffs claim that Brookfield Multiplex is liable for all of the defects. The plaintiffs seek to enforce Tamariki’s contractual rights under the head

contract relying on the assignment. They advance an alternative claim against Brookfield Multiplex in negligence.

[7] The third defendant, Walker Architects Ltd (also now in liquidation), undertook design work in relation to the Nautilus under a consultant agreement with Tamariki entered into in April 2002. This agreement was on standard terms prepared by the New Zealand Institute of Architects and specified the scope of services to be provided.³ These included preparing plans and specifications in sufficient detail for consent and construction purposes, contract administration including coordinating with contractors, observation of works on site, issuing certificates for payment and practical completion and arranging for the rectification of defects during the defects liability period.

[8] Walker Architects prepared the original plans and specifications that were submitted to Council by Tamariki in support of its applications for building consents, including the application in August 2002 seeking consent for stage three, being the construction of the tower.

[9] In April 2003, soon after the head construction contract was signed, Tamariki, Brookfield Multiplex and Walker Architects, entered into a deed of novation in terms of which Brookfield Multiplex assumed Tamariki's position as the employer under the consultant agreement. However, Brookfield Multiplex did not assume liability for the design of the Nautilus. That responsibility was to remain with Tamariki save for minor errors and omissions in the design development which an experienced contractor would be reasonably expected to foresee and for design changes introduced for the benefit of Brookfield Multiplex.

[10] The plaintiffs claim that Walker Architects is liable to them in negligence for the losses arising out of all of the defects other than the skylights.

[11] The plaintiffs discontinued their claim against the fourth defendant, Downer New Zealand Ltd, having reached a settlement relating to the waterproofing work undertaken by that company on the roof and the podium. The costs associated with

³ NZIA Agreement for Architect Services AAS2 2000.

that work have been removed from the claim against the remaining defendants and all parties consented to the discontinuance.

[12] The fifth defendant, Façade Technologies Ltd, manufactured and installed the exterior cladding. This company is also now in liquidation and the claim against it is stayed. The plaintiffs have not sought leave to continue against this defendant.

[13] The sixth defendant, Charles Norager & Sons Ltd, applied the waterproof membrane and installed the tiles on the decks. The plaintiffs claim that this company is liable to them in negligence for the costs of remediating the decks and for part of the works required on the podium.

[14] Council joined Bostik New Zealand Ltd as first third party, contending that the liquid membrane it supplied for use on the decks was defective. Council abandoned this claim during the course of the trial.

[15] The second third party, Zurich Insurance Plc, is the lead underwriter under a professional indemnity insurance policy provided to Brookfield Multiplex. Brookfield Multiplex seeks indemnity under this policy for the claims it faces in this proceeding. I will refer to the second third party as the "Underwriters."

The issues

[16] The issues I need to determine are:

- (a) What are the defects?
- (b) Who is liable for the defects?
- (c) What is required to repair the defects?
- (d) What will it cost to repair the defects?
- (e) Has an appropriate allowance been made for betterment?

- (f) Are plaintiffs with assigned claims entitled to recover?
- (g) Are the plaintiffs entitled to the cost of temporary repairs?
- (h) Are the plaintiffs entitled to consequential losses?
- (i) Are the plaintiffs entitled to general damages?
- (j) Did any of the plaintiffs fail to mitigate their loss?
- (k) Did any of the plaintiffs contribute to their own losses?
- (l) What damages are the plaintiffs entitled to against each of the defendants?
- (m) What contribution is each defendant entitled to from other defendants?
- (n) Is Brookfield Multiplex entitled to indemnity for part or all of its liability under the professional indemnity insurance policy?

[17] It is convenient to consider the liability and quantum issues arising out of each category of defect separately:

- (a) roof;
- (b) roof edge;
- (c) cladding;
- (d) decks;
- (e) balustrades; and
- (f) podium.

Roof

What are the defects?

[18] It is common ground that there are penetrations through the membrane where plant has been installed on the roof and that this is allowing water to enter the building causing damage to internal linings and the structure of the building.

[19] It is also common ground that the mitred corners of the aluminium extrusion forming the edge of the skylights are poorly formed and allow water to penetrate causing damage to timber trims and plaster board linings.

Who is liable for the defects?

[20] It is settled law that councils owe a duty of care to existing and subsequent owners of premises when performing their building control functions under the Building Act.⁴ Council accepts that it ought to have identified the defects in the plant room when inspecting the building during construction and that it is liable for the cost of remediating these defects.

[21] The plaintiffs accept that Council cannot be held responsible for the skylight defects.

[22] The plant and the skylights were installed as part of the head contract works. Brookfield Multiplex breached its contractual obligations to Tamariki by carrying these works out in a defective manner. The body corporate has taken an assignment of Tamariki's rights under the head contract and is therefore entitled to recover the losses it has suffered as a result of this breach.

[23] Brookfield Multiplex also owed a duty of care to the plaintiffs as unit owners to ensure that these works were completed competently. The expert witnesses who gave evidence about these defects all agree that Brookfield Multiplex breached this

⁴ *North Shore City Council v Body Corporate 188529 (Sunset Terraces)* [2010] NZSC 158, [2011] 2 NZLR 289; *Body Corporate No 207624 v North Shore City Council [Spencer on Byron]* [2012] NZSC 83, [2012] BCL 498.

duty. On the basis of that evidence, I find that Brookfield Multiplex is liable to the plaintiffs for the losses caused by these defects.

[24] The plaintiffs claim that Walker Architects is liable for the defects in the plant room but accept that it is not liable for the defective skylights.

[25] The plaintiffs rely in part on the evidence of Sean Cavan, a building surveyor with 37 years' experience in the building industry, including the design and construction of multi-storey buildings. He is a consultant with Prendos New Zealand Ltd, a building consultancy with specialist expertise in investigating weathertightness defects in buildings and designing remedial solutions. Prendos has been assisting the plaintiffs in relation to the defects at the Nautilus since September 2008.

[26] Mr Cavan explained that the fans and other large machinery on the roof were designed to sit on raised plinths to keep the machinery away from areas where water can collect. He says that particular care is required to ensure that all penetrations, including for fixings, cabling and ducts, are properly sealed. He says that provision also needs to be made to ensure that water drains away effectively.

[27] Mr Cavan criticises the plans that were prepared by Walker Architects in June 2003 showing the penetration and plinth layout for mechanical services on the roof. He says that although these show the dimensions and locations of the plinths and penetrations, they do not show where the feet of the machines were to be positioned. He says the plans are also deficient because they do not include sufficient waterproofing details and do not provide for any slope or other means of directing the water away.

[28] However, these plans were not followed. Mr Cavan established that the machinery was not installed as shown on these plans and the plinths and the holes are in different locations. He says that this indicates that the proposed machinery was modified or altered at a very late stage before installation. This inevitably would have made it difficult to co-ordinate contractors so that everything was done in the correct sequence. Mr Cavan says that proper sequencing is required to achieve

a weathertight solution. For example, the mechanical engineer needs to specify where the bolts are going to appear and direct the builder where to locate the plinths. The waterproofing contractors have to know where the bolts are so that these can be dressed before the membrane is laid and the fixings sealed and covered.

[29] Mr Cavan says there were additional fixings through the membrane and some of the machinery was laid on timber sections that were then silicon sealed onto the mastic asphalt. He says that it is very difficult to maintain a weathertight seal in these circumstances because the timber swells when wet and contracts as it dries. This process stretches the membrane causing further problems. Mr Cavan considers that the defects in the plant room are obvious and Walker Architects ought to have identified them when it inspected the works.

[30] The plaintiffs also called Lindsay Mackie, an architect with over 35 years' experience in the design and construction of a wide range of buildings including residential, commercial and office buildings, educational facilities, hotels, restaurants and healthcare facilities. Mr Mackie agreed with Mr Cavan that the plant room defects were obvious and that Walker Architects should have detected them.

[31] Council called Mark Powell, a building surveyor with 23 years' experience. He emphasised the importance of appropriate design details showing how all penetrations through the membrane on the roof such as ducts, pipes, fixings for supports and anti-vibration equipment are to be waterproofed. In his view, these were not properly considered or detailed and he criticises the reliance placed on surface applied sealants in locations such as this which are prone to ponding. Mr Powell was in general agreement with Mr Cavan's evidence relating to the defects in the plant room. He considers that poor construction sequencing and workmanship contributed to the problem.

[32] Walker Architects did not participate in the trial but its liability was contested by the Underwriters. This was because of the plaintiffs' contention, supported by Council, that Brookfield Multiplex is liable for Walker Architects' defective design work and that claims arising out of this are indemnified under Walker Architects' professional indemnity policy.

[33] The Underwriters retained Kevin Clarke, an architect with 45 years' experience, to review and comment on the adequacy of Walker Architects' work. Mr Clarke has had considerable experience with a wide range of residential, commercial and industrial developments. He says that it is common practice to design plant rooms as open air structures and that water would not normally penetrate into the building if the plant has been properly installed. He says that the design for plant installation on the roof of a building such as the Nautilus would not typically be detailed and that the problems experienced at the Nautilus were caused by poor workmanship. However, Mr Clarke agrees that the layout of the plant and the details as to how penetrations are going to be positioned and waterproofed require careful thought at the design stage. He says that pipe penetrations, by way of example, are "a difficult and fiddly detail to make watertight". Mr Clarke focused on the plans and did not address the plaintiffs' claim that Walker Architects ought to have detected the defects during the course of its inspections.

[34] I accept Mr Clarke's evidence that the fact that the plant room was designed as an open air structure was not of itself a defect and if the work had been carried out properly, a weathertight solution was achievable but I do not accept that the plan prepared by Walker Architects shows adequate waterproofing details; there are virtually none. The plan does not even show the location of all of the penetrations, such as for pipes, let alone how they were to be waterproofed. However, this plan was not followed in any event. It appears that Numecon Contracting Ltd installed the plant and prepared the most recent drawings for the installation. There is therefore no causal link between Walker Architects' deficient design and the defective installation.

[35] Walker Architects is nevertheless liable for the plant room defects because these would have been obvious to any qualified observer and ought to have been noted by Walker Architects during the course of its inspections.

What is required to repair the defects?

[36] Prendos has prepared remedial design plans covering all of the defects and consequent damage. The proposal for the plant room is to construct a roof over the plant. Mr Powell agrees that this is the simplest and most cost effective solution.

[37] Mr Clarke does not consider that a roof over the plant room is required. He suggests that the plant could be lifted using jacks while the waterproofing works are undertaken. He estimates that this work could be completed in a day or so at a cost of approximately \$25,000. However, he has not prepared any detailed plan or specification or obtained any market pricing for the work.

[38] Mr Cavan considers that there are many practical problems associated with the repair solution suggested by Mr Clarke. He says that it would be necessary to have a crane or other lifting mechanism on the roof to lift the machinery to enable the waterproofing work to be carried out. He points out that a number of services would need to be maintained to support the building while the works were in progress, for example the extractor fan for the stairwell and hallways, and the hot water tanks and califonts. The membrane would need to be lifted and new plinths formed to accommodate the position of all fixing points. The bolts would need to be precisely located in the plinths to align with the machinery which he anticipates would need to be moved offsite. He says that a further concrete pour would be required to allow for adequate drainage from the plant area. A new membrane would then have to be laid with all of the penetrations properly waterproofed. Mr Cavan estimates that the cost would be between \$180,000 and \$200,000 assuming that no problems are encountered. He maintains that building a roof over the existing plant and leaving it all in place and operational carries far less risk and is the preferable solution.

[39] I accept Mr Cavan's evidence about this. The weathertightness issues caused by the plant room defects are serious. Considerable damage has been caused by water entering the building from the plant room. This damage extends as far down as the car parks, many levels below. An enduring solution is required. The plaintiffs should not have to accept makeshift repairs and be left with the risk that this will not

be effective or durable. This is particularly so in this case where the remedial works promoted by the Underwriters have not been designed or costed and no guarantee or assurance is offered that they will be effective.

[40] Baragwanath J made a similar point in *Dicks v Hobson Swan Construction Limited (In Liquidation)*:⁵

I am satisfied that Mrs Dicks should not have to bear the worry and risk that the council's estimate should be inadequate; indeed general damages would have to make allowance for the resulting anxiety. It was open to the council to offer a guarantee that its estimate would be correct but it did not accept that option. Mrs Dicks is entitled to the peace of mind that results from a firm price ...

[41] I accept the remedial solution proposed by the plaintiffs and accepted as appropriate by Council.

[42] There was no challenge to the proposed works to remediate the skylights. Only Brookfield Multiplex is liable for this defect.

Roof edge

What are the defects?

[43] The overall shape of the Nautilus was designed to resemble a fish. The eastern side facing the sea has a curved front. The building tapers to a "tail" at the western end which is formed by triangular decks. Aluminium composite panels have been shaped to form the perimeter of the roof creating a "bull nose" effect. These panels are laid over a timber nib on the main roof and are supported by a series of steel beams where they wrap around to a near horizontal plane before intersecting with the main façade of the building. The underside of these panels serves as a soffit covering the decks of the units on level 12.

[44] The roof edge was formed using the same type of aluminium composite panel that was used to clad the rest of the exterior of the building. There is an "L" shaped fixing flange on each side of the panels. The flanges are designed to overlap to

⁵ *Dicks v Hobson Swan Construction Limited (In Liquidation)* (2006) 7 NZCPR 881 (HC) at [122].

create a "U" shaped channel between the panels. The panels are secured to the underlying timber joinery with screws fixed through these channels.

[45] The seal between the panels is created using a polyurethane foam backing rod pressed into the channel after the panel has been fixed. Sealant is then applied over the top. The backing rod serves as a "bond breaker" between the base of the fixing channels and the sealant ensuring that the sealant adheres solely to the vertical faces of the fixing channels and not to the base. This enables the sealant to stretch and compress as required to accommodate the movement that can be expected to occur between the panels.

[46] The final design did not incorporate mechanical flashings over or beneath the joints and there is no mechanism to drain any water that may accumulate behind the panels.

[47] The plaintiffs claim that the joints between these panels have failed allowing water to track down the inside of the soffits and enter the building above the external joinery causing damage to internal linings and wall framing in the units on level 12.

[48] The plaintiffs called Jacob Woolgar, another experienced building surveyor at Prendos, to assist the Court in relation to this and other defects at the Nautilus. Mr Woolgar has had a central role in investigating the defects and determining the extent of remedial works required. He explained that the specified joint width at the Nautilus was 12 millimetres. In general, the recommended width to depth ratio is two to one and the minimum sealant depth is 6 millimetres. This means that the specified width of 12 millimetres was only just sufficient to allow for the minimum recommended depth.

[49] Mr Woolgar says that the dimensions of the sealant joints varied throughout the cladding system, including at the roof edge. He measured these joints in multiple places around the building and found that they were generally 18 to 20 millimetres deep and 12 millimetres wide. However, the width of the joints ranged from 2 millimetres to 40 millimetres.

[50] Mr Woolgar noted corrosion on the steelwork inside the roof edge and white rust on the galvanised purlins. He observed tracks showing that water had been running down and entering the building where the soffit intersects the head of the external door leading onto the deck.

[51] Mr Woolgar also observed damage at the junction between the joinery and the external walls during a visual survey of units on level 12. He was present when soffit cladding panels were removed from the unit on the eastern side of the building and noted that water had accumulated in the void above the soffit in a location corresponding to where moisture had tracked over the joinery and onto the ceiling lining in the unit.

[52] Mr Woolgar produced photographs showing this defect in other places on level 12. One of these shows staining where water has seeped through the joints on the underside of the soffit. Another shows panels above the door leading from one of the units onto the deck on the northern side of the building. Mr Woolgar says that these panels had filled with water that had drained from the soffit. The water had then travelled over the window heads and into the wall cavities. He produced another photograph showing water damage to the internal wall and ceiling linings including cracked and swollen plasterboard linings, deformation of paint surfaces and swollen timber trims. Mr Woolgar says that he also observed damage to carpets and carpet bars caused by water draining down the inside of the windows.

[53] The external walls of the units protrude to the edge of the curve of the bull nose at the northern and southern corners of the fishtail. Mr Woolgar produced a photograph showing similar water damage to the unit at one of these corners.

[54] Another photograph, taken from within the void beneath the panels on the northern side of the roof edge, shows that there is no packing between the supporting structure and the screw fixings so that the panels are secured by only part of the screw thread. Mr Woolgar found a number of other instances where the screws went from one panel to another without going into any of the timber structure. He concluded that there is inadequate support for the roof edge panels, particularly given the exposed location and height of the building and consequent high wind

loading. He says that this is likely to have contributed to the seals on some of the joints failing.

[55] Mr Powell inspected the joints in the cladding panels forming the roof edge by inspecting these from the main roof and from the level 12 decks. He agrees that the panel joints have failed at the roof edge. He observed numerous joints on the top surface of the panels that had split exposing the foam backing rod beneath and providing a direct path for water entry. Mr Powell noted that in some places where the joints had failed the sealant had minimal thickness, typically only a few millimetres. He observed water dripping out of the panel joints on the underside of the soffit to a unit on the eastern side of the building in close proximity to several failed joints above.

[56] It is clear from the experts' evidence that water is penetrating through the joints in the aluminium composite panels on the roof edge causing the damage that Mr Woolgar described. However, the experts disagree about who is responsible for these defects and the extent of the remedial works required. Because the same aluminium composite panels were used to clad the building and there is considerable overlap between the plaintiffs' claims relating to the roof edge and those relating to the cladding on the rest of the building, I will address the liability and quantum issues in respect of these claims together.

Cladding

What are the defects?

[57] The plaintiffs claim that the design, manufacture and installation of the cladding system were defective and as a result the cladding is not weathertight. They claim that water has entered the building through the joints in the panels causing damage to timber framed external walls and internal linings.

[58] The cladding system at the Nautilus is a face-sealed system which means that it is wholly dependent upon the integrity of the external finish and the efficacy of the joints to keep water out. There is no mechanism to deal with water that penetrates the seal. Mr Woolgar says that it is difficult to achieve a perfect face-sealed system,

particularly on a building such as the Nautilus which has complex shapes including curved and triangular edges to decks which also change in level.

[59] To accommodate these challenging design features, the cladding panels were folded and cut. In many cases, because the panels did not fit properly when they were installed, the fixing flanges were trimmed or removed altogether resulting in the cladding not being properly fixed to the framing. Without any fixing channel, there was no backing rod to support the seal. The integrity of the waterproofing of these joints is dependent on the sealant which has only the limited surface of the edge of the panels to adhere to.

[60] An example of where this defect has commonly occurred is on the decks with the half-height balustrades in the middle section of the building. These balustrades are flanked by external windows. The panels on the outside base of these balustrades were modified to clad a double step where the panel abuts the fixing channel for the glass section of the balustrade. At the ends of these balustrades, the panels were further modified to allow for a change in the profile of the wall to accommodate the adjoining window joinery. Mr Woolgar says that the fixing flanges were removed from the panels in these locations creating holes immediately behind the sealant joints.

[61] Fixing flanges were also removed from panels installed beneath windows. Again, the result is that the cladding is not fixed to the wall framing along this joint and there is no backing to support the backing rod and sealant joint. In at least one case, Mr Woolgar found that a hole had been cut in the cladding at this junction and filled with sealant.

[62] In some of the more complex junctions, such as where the cladding has been installed in acute angled corners of decks, the joints have been poorly formed creating gaps that have not been adequately sealed. The generally large and unsupported joints at these junctions have been finished using a variety of methods, most commonly by filling the gap with large quantities of sealant. Mr Woolgar says that in some cases rags, cardboard or multiple backing rods have been used to provide backing.

[63] Apart from the specific problems that have occurred at the complex junctions referred to, Mr Woolgar found that the width of the sealant joints on the exterior cladding of the building varied considerably, ranging from less than 2 millimetres in places to more than 60 millimetres in others. This has also contributed to the widespread joint failure.

[64] Waterproofing issues caused by failed sealant joints are particularly prevalent at the fishtail on the southwest and northwest corners of the building. In these locations the cladding intersects the joinery at an acute angle making it a challenging junction to perfect and seal.

[65] The joint failure, which has occurred on all levels of the tower, has led to water damage to timber framing, internal wall linings, ceilings and other building elements. In some of the units, the leaks have been so serious that it has caused the carpet to rot in the vicinity of the junctions.

[66] Gregory O'Sullivan, a director of Prendos, was responsible for directing and reviewing the investigations carried out at the Nautilus by Prendos' employees, including Messrs Woolgar and Cavan. Mr O'Sullivan has been involved in the building industry since 1971. He formed Prendos 26 years ago and for the past 17 years has had significant involvement in investigating weathertightness defects and designing remedial solutions. He is extremely critical of the cladding at the Nautilus. He considers that a face-sealed system as designed for the Nautilus could not have been weathertight unless the panels had been installed perfectly. He believes that this standard of workmanship could not realistically have been achieved on a building of the size and complexity of the Nautilus. Mr O'Sullivan says that the panels were incorrectly fitted and the joints were so poorly formed and backed that the cladding could never be weathertight.

[67] Mr Powell agrees that the complex shape of the Nautilus, particularly the curves, triangles and acute angles, adds significantly to the complexity of the cladding system. He also agrees that the cladding was poorly installed with panels being adapted inappropriately and fixings incorrectly installed through the face of the cladding in some instances. He says that in many cases the width of the cladding

joint is insufficient to allow the appropriate width to depth ratio. He considers that the smaller sealant joints have typically failed because they were required to perform beyond their elastic limit. Mr Powell says there was insufficient cladding material for the sealant to adhere to, particularly where the fixing flanges were removed.

[68] Mr Powell summarised the various deficiencies in the cladding joints that he observed as follows: lack of backing rod behind the sealant; backing rod present but insufficient support to keep it in position; lack of support to sides of sealant joint as a result of removal of fixing flanges; insufficient width between cladding panels with sealant joints only one to 2 millimetres wide in places; incorrect sealant thickness; sealant applied over the face of adjacent cladding panels to give the appearance of a consistent and appropriate joint width; unsealed fixings penetrating the outer face of cladding panels; and distorted cladding fixing flanges resulting in insufficient sealant cover.

[69] Mr Powell found evidence of sealant joint failure in 15 of the 24 units he inspected. He observed water damage in 10 units including damage to carpets, timber skirting, painted plasterboard wall linings and ceiling linings. Mr Powell also found several cases where the cladding panels themselves were beginning to fail with short splits radiating from the corners where the panels have been folded.

[70] Mr Powell carried out water testing which confirmed that water was able to enter the building where sealant joints had failed. He found some damage to the timber framing to which the cladding was fixed. Fungi were detected in all nine samples analysed and timber decay was evident in seven of these. The five most severely decayed samples were found to have been exposed to consistently high levels of moisture for at least three years, possibly five.

[71] In addition to the decayed timber framing, Mr Powell observed water damage resulting from the failed sealant joints including damage to paint and plasterboard internal wall linings, corroded interior steel angle used to form plasterboard corners, timber skirting, carpet backing, carpet gripping bars including rotten timber and corroded fixings, surface corrosion on structural steel members and

tray decking under concrete floors, corroded building wrap staples and mould deposits on building wrap.

[72] Council engaged Rico Bonaldi, an architect with over 65 years' experience, to assist the Court in relation to the cladding issues. Mr Bonaldi has extensive experience in the design and implementation of façade buildings such as the Nautilus. He explained that joint width is of primary importance in enabling an effective seal and must allow for the natural movement that occurs as a result of thermal effects and building movement. He emphasised that the flanges are essential.

[73] Mr Bonaldi considers that the cladding failure at the Nautilus resulted from errors in the fabrication, application and sealing of the aluminium composite panels. He too observed that the width of some of the joints was as small as 2 millimetres in places. He found joints with a wholly inadequate depth of only 2.5 millimetres compared to the minimum required depth of 6 millimetres and in some instances undersized backing rods had been used causing a lack of control over sealant depth. He also noted that the flanges had been removed from many of the panels.

[74] The Underwriters engaged Peter Lalas, who has been involved in the design, testing, manufacture and installation of windows, doors and cladding systems on buildings like the Nautilus for more than 30 years. Mr Lalas was principally engaged to express his opinion on whether the defects at the Nautilus were caused by defective design or defective installation because this is relevant to whether Brookfield Multiplex's professional indemnity insurance policy responds to any of the claims. He agrees that the cladding has the defects described by the other experts but maintains that this was the result of poor workmanship rather than design.

[75] There was no real challenge to the evidence of the plaintiffs' experts as to the nature and extent of the defects in the cladding. I accept their evidence about these fundamental and widespread defects.

Who is liable for these defects?

Council

[76] Section 34(3) of the Building Act required territorial authorities to grant a building consent if it was satisfied on reasonable grounds that the provisions of the building code would be met if the building work was properly completed in accordance with the plans and specifications submitted with the application. The plans and specifications would therefore need to include sufficient detail to enable this to be assessed. For that reason, s 33(2) of the Act provided that every application for a building consent was to be accompanied by such plans and specifications and other information as the territorial authority reasonably required. The territorial authority was empowered by s 34(2) to require further reasonable information in respect of the application. In exercising its powers under these provisions it was required by s 47 to have due regard to various matters including the size and complexity of the building, its intended use and life and the reasonable practicality of any work proposed.

[77] The plaintiffs claim that Council should not have issued the building consent for the Nautilus tower because there was insufficient detail in relation to the proposed cladding system to enable it to be satisfied on reasonable grounds that the performance requirements of the building code would be met.

[78] The plaintiffs rely on the evidence of Ronald Hanley, a specialist in the design and specification of windows, curtain walls and cladding systems. Mr Hanley has had significant involvement in reviewing designs of cladding systems for building consent purposes and reviewing the construction of such systems to determine whether building consent conditions have been complied with. Mr Hanley explained the important difference between a rain screen system which allows for drainage of any water that may penetrate and a face-sealed system which must exclude water entry altogether. Both systems must be coordinated with other elements of the façade such as windows and doors. Mr Hanley says that the specification approved by Council on 26 February 2003 did not make clear which type of system was proposed for the Nautilus.

[79] Further, Mr Hanley says that although the specification makes reference to Australian and New Zealand standards, no detail was provided as to how those standards would be met. The specification merely sets out a process for assessment by the architect of a design yet to be developed. This included the provision of:

- (a) sample panels for assessment before commencing fabrication;
- (b) shop drawings and installation details for evaluation;
- (c) shop drawings for review before commencing manufacture showing: design calculations; fully dimensioned elevations of all elements; complete details of constructions, connections and all support systems; dimensions of all typical elements and of all special sizes and shapes; provision for the exclusion and/or drainage of moisture; jointing details and method of fixing between individual elements and between the installation and adjacent work; adjustment of fixings to ensure accurate alignment of composite cladding; sealant types and full size sections of all sealants and backing rods; provision for thermal movement; provision for seismic movement and movement under wind loads; sequence of installation; coordination requirements with other work; and a full schedule of materials, finishes, componentry, hardware and fittings; and
- (d) complete laboratory testing of a prototype of the building façade in accordance with the relevant Australian and New Zealand standard.

[80] These are requirements that the design must meet but Mr Hanley says that he has not seen any developed design for the cladding system other than basic shop drawings. He is not aware of any prototype having been approved by Walker Architects or of any test results demonstrating compliance with the stipulated standards. The shop drawings do not carry the Council approved stamp and Mr Hanley understands that they were not submitted to Council.

[81] Mr Hanley considers that the information supplied to Council was inadequate and did not permit the required assessment of whether code compliance would be achieved. Council received a prescription for the proposed assessment and testing regime that would be followed in the course of developing a fully completed design but it received only limited details of what that design would entail and how it would meet the performance requirements of the building code. Mr Hanley notes by way of example that complex junction details were not developed and no detail was provided showing the terminations of the aluminium composite cladding panels and flashings. These details were critical to ensuring the weathertightness of the building.

[82] Mr Mackie agrees with Mr Hanley that the original building consent documentation was insufficient, particularly for a complex high rise building located in a coastal wind zone that would be subject to high wind pressures.

[83] Mr Bonaldi says that he has not seen any design document illustrating the build-up of the critically important sealant joint between the aluminium composite panels. Nor has he been able to find any drawing or specification identifying the diameter of the screws that were to be used to attach the panels to the building substrate or the spacing between these screws. These were basic and fundamentally important details. Mr Bonaldi expressed the position bluntly:

A fact of life is that this job has been so badly documented to begin with that even now after about 10 years we still don't know really what they built.

[84] The plaintiffs called Robert Tidd who has 40 years' experience in the residential and commercial building industry. For much of his career he worked for various city or district councils and has had extensive experience with building consents, building inspections and code compliance certificates. Mr Tidd also considers that Council had insufficient information to enable it to be satisfied on reasonable grounds that the proposed cladding design would comply with the building code and that the building consent should not have been issued. He says that a prudent council officer processing the application would have requested additional information to support the design, probably in the form of a report from an independent façade engineer or similarly qualified person to confirm that the

proposed works would comply with the building code if installed as designed. He also suggests that advice could have been sought from one of the larger councils given that Rodney District Council had limited experience with buildings of this type.

[85] The building consent was granted by Kelvin Goode who has had over 25 years' experience working for local government, principally in the area of processing consents. In response to the suggestion that he ought to have obtained an independent review of the proposed cladding system before issuing the consent, he said that he did not consider this necessary because the application was made by an experienced development company and, as far as he was aware, by an experienced architect. Further, he knew that aluminium composite panels had been used on other buildings on the North Shore and in Auckland City and there was no information available in the market to suggest that these types of cladding systems were inherently flawed.

[86] However, the complaint is not that aluminium composite panel cladding systems are inherently flawed but that insufficient details were supplied regarding the particular system proposed for the Nautilus to enable any useful assessment to be made as to whether it would meet code requirements. It would have been apparent to Council that no developed design existed.

[87] Council endeavoured to answer the plaintiffs' criticisms about the lack of adequate documentation with the evidence of Stephen Flay, a qualified builder who joined Rodney District Council as a building inspector in November 1996. Mr Flay left the Council in 2001 to set up his own consulting business as a building surveyor specialising in weathertightness issues in commercial and residential buildings and has worked for North Shore City, Manukau City and Franklin District Councils. He says that at the time the Nautilus was built, council officers would not normally have sought an independent report from a façade engineer. He says that this would be unusual even today because until recently there has been no evidence that aluminium composite cladding systems might be the subject of weathertightness issues. Mr Flay considers that Council had sufficient information to justify issuing the consent.

[88] Council also led evidence from Stephen Cody, who has worked for Wellington City Council more or less continuously since April 2001. Mr Cody has had various roles for the council including as a building officer and as manager of compliance building consents and licensing services. He considers that the application for building consent was “well detailed” and that there was enough information to justify issuing the consent.

[89] I accept the evidence of Messrs Hanley, Mackie, Bonaldi and Tidd on this issue. The critical feature of this type of cladding system is the joints but these were not specified or detailed and the design of complex junctions had not been developed. These were the very areas where weathertightness problems were likely to occur and in fact did occur.

[90] Council knew that the cladding system proposed was a bespoke system that had not been used or proven on any other development. Having regard to the complexity of the building, its height and exposed location, Council ought to have insisted on greater detail showing how the critically important cladding system would meet the performance requirements of the building code. In the absence of these details, Council did not have sufficient information to enable it to be satisfied on reasonable grounds that the requirements of the building code would be met if the building work was properly completed in accordance with the plans and specifications submitted with the application in terms of s 34(3) of the Act. Having issued the building consent without these details, there was no design against which inspections could be carried out by Council or anyone else.

[91] However, the original design concept prepared by Walker Architects for building consent purposes was significantly modified after the consent was granted and before construction of the tower commenced. I will briefly explain why this happened before relating the events that led to an amended consent application being lodged with Council in November 2003, long after construction had commenced.

[92] On 7 October 2002, Brookfield Multiplex submitted a tender for the construction of the Nautilus with a guaranteed maximum price of approximately \$29.9 million. This tender excluded various items including design fees and design

management and assumed that the basic scope of works was the minimum required to satisfy the terms and conditions of the standard sale and purchase agreement and council consent.

[93] On 27 November 2002, Brookfield Multiplex wrote to the building consultants appointed by the developer stating, amongst other things:

The \$29.9 + GST GMP1 put up early to assist the Mezzanine Funding Phase was tagged to be conditional upon us delivering the bare minimum required to satisfy the standard Sales Agreement. As discussed, if need be we would “rape and pillage” the design to the bone to protect ourselves on this GMP1.

[94] Brookfield Multiplex submitted a revised provisional price of approximately \$36.4 million on 21 December 2002. Negotiations followed over the next three months before the head contract was signed on 18 March 2003. Construction of the Nautilus was already well underway by this time. The eventual contract price was approximately \$34.1 million. Mr O’Sullivan says that a number of material changes were made to the design to achieve this cost reduction including the removal of drainage points and the plywood backing which formed a cavity behind the cladding. These features formed part of the original design and were intended to deal with any water that might penetrate the face of the cladding.

[95] The application for building consent for the tower was made on 12 August 2002. Council issued the building consent on 25 February 2003 without any knowledge of the changes that had been agreed in order to reduce costs, including the important changes to the cladding system.

[96] The incompleteness of the design of the cladding system at this time is demonstrated by the minutes of a meeting of representatives of Brookfield Multiplex, Façade Technologies and Walker Architects held the day after the building consent was issued. The minutes of this meeting record:

...

Multiplex and the Architect have raised the question – Should your system be the waterproofing system, how does it operate?

Façade Technologies commented that the Architect has drawn drains everywhere, Façade Technologies not comfortable with this design.

Multiplex has the ability to make the system a pressure release. What about the water getting in and running down to the bottom levels?

Façade Technologies commented that they are happy to do a drainage type system.

...

Multiplex asked – do we make the system a drain type or an air type??

Façade Technologies and Multiplex to think about these issues ...

[97] Façade Technologies commenced installing the cladding on 22 July 2003. It had been installing panels for over three months by the time Council received an amended consent application on 6 November 2003, less than four weeks before practical completion of the entire building was due under the head contract. The amended consent application included alterations to the cladding system with the removal of drainage points and the rigid ply backing which was to form a cavity behind the cladding. Mr O’Sullivan emphasises the importance of these changes observing that there was no longer any provision to deal with water entering the building through the joints.

[98] Mr Tidd says that he was surprised that Council did not insist on a report from an independent cladding designer or façade engineer advising whether these significant changes to the cladding system should be approved. He notes that this is the approach Council adopted in requiring a report from an independent fire engineer concerning the proposed changes to the fire design of the building.

[99] Mr Cody agrees that this would be the correct approach if the application was being considered by Council today. However, he says that at that time council officers tended to rely on the advice of cladding suppliers and manufacturers. He says that it is only with the benefit of hindsight that it is now known that this reliance was sometimes misplaced.

[100] Council knew from the original specification that shop drawings and installation details had yet to be prepared and were to be provided to Walker Architects for review before manufacturing commenced. Revised shop drawings incorporating any modifications were to be provided before any panels

were erected on site. Laboratory testing of a prototype of the building façade was also to have been completed by them. Despite Council knowing that panel installation had been ongoing for over three months by the time the amended application was received, it did not request shop drawings or the results of any testing. It did not seek an independent review or a producer statement in relation to the amended design.

[101] Mr Goode appreciated that the plywood backing and drainage points were incorporated in the original design to deal with any water entering through the sealed joints and junctions. He says that although he was aware of the concerns identified by the Hunn report relating to the lack of cavities in conjunction with the use of untreated timber in residential buildings, he did not consider that this was relevant because the Nautilus was constructed more like a commercial building using concrete and steel.⁶ This is why he dismissed this change as inconsequential:

[t]he simple fact that the proposed system was moving from a cavity to a non-cavity based system (and that is using a very simplistic terminology), would not conceptually have been an issue for me.

[102] Mr Goode understood that, as a result of the changes, the weathertightness performance of the cladding would be entirely dependent on the efficacy of the sealant joints between the panels and at other junctions. However, he did not have any information about how these critical joints would be formed and sealed. He did not ask for shop drawings or evidence of satisfactory testing. He was therefore unable to assess whether code requirements would be met.

[103] I do not accept Mr Cody's evidence that the design of the cladding system was well-detailed. His assertion stands in stark contrast to the evidence of Mr Bonaldi, who has vast experience with face-sealed cladding systems, that the cladding design at the Nautilus was so badly documented that he cannot say even now what was built. Council had no detail of how the basic joints between the panels were formed, let alone details of the more complex junctions.

⁶ The Hunn Report to the Building Industry Authority in 2002 was a landmark report into the causes of weathertightness defects arising out of certain types of construction.

[104] I conclude that Council did not have sufficient information to justify its decision to grant the amended consent in relation to the cladding.

[105] The plaintiffs' next complaint is that Council failed to carry out adequate inspections of the cladding system during the construction process to ensure that the work was being carried out in accordance with the building consents and would comply with the building code.

[106] Kevin Higgs was one of the building inspectors responsible for inspecting the building works. He recalls a discussion at council offices before the tower was built when a decision was made not to inspect the cladding because Council did not have sufficient expertise to do so. Mr Higgs' evidence was confirmed by Stephen Hubbuck who was the senior field officer responsible for inspecting building works in the Orewa area at the time. Mr Hubbuck says that after the consent was issued he asked his manager whether the cladding needed to be inspected and was assured that it did not.

[107] Because it was not going to carry out any inspections of the cladding, Council issued the building consent subject to a condition that a PS4, a producer statement – construction review, would be required from Walker Architects confirming that it had observed the exterior cladding works and certifying that these works either complied with the design or were amended appropriately to suit site conditions.

[108] The issue is therefore not whether Council's cladding inspections were adequate but whether it should have carried out such inspections at all.

[109] Mr Flay says that at the time the Nautilus was built, council officers would not normally inspect a cladding system such as this because they would be unlikely to understand how it was to be installed. In any case, he says that it would be almost impossible for a council inspector to view the joints closely except for those on the walls of the decks.

[110] Mr Tidd acknowledges that a council building inspector would not have had access to the roof edge to carry out any close inspection. He accepts that the defects at the roof edge would not have been apparent from a visual inspection from the decks on level 12 or from the roof. On the other hand, he says that council inspectors had the opportunity to observe the installation of the cladding on the rest of the building and ought to have inspected it even if they did not have the requisite expertise. He says that this may have revealed obvious defects.

[111] However, Mr Tidd agrees that some of the defects in joint formation were masked by sealant applied to the face of adjoining panels to create the impression of consistently wide joints. He also accepts that a council inspector would not be able to see beneath the surface of the sealant and tell whether the joint had been formed correctly. He therefore supports Council's decision to place primary reliance on the PS4 from Walker Architects in relation to the cladding.

[112] I am not persuaded that Council was negligent in deciding not to inspect the cladding during the course of installation. It would not have been practical for council officers to undertake any meaningful inspection regime for the cladding installation. I consider that Council was entitled to anticipate this difficulty at the consent stage and determine that it would instead place reliance on a PS4 from Walker Architects certifying that it had overseen the cladding works and that these works complied with the code. It was appropriate for Council to make this a condition of the consent.

[113] This leads to the final complaint against Council in relation to the cladding, that it was negligent in issuing a code compliance certificate, particularly in the absence of a PS4 from Walker Architects.

[114] Section 43 of the Act provided for the issue of code compliance certificates. It required the territorial authority to issue a code compliance certificate if it was satisfied on reasonable grounds that the building work complied with the building code. Territorial authorities were permitted, at their discretion, to accept a producer statement establishing compliance with relevant provisions of the building code. Producer statements were defined broadly in s 2 of the Act as meaning any statement

supplied by or on behalf of an applicant for a building consent or by or on behalf of a person who has been granted a building consent that certain work will be or has been carried out in accordance with certain technical specifications.

[115] It would not be appropriate for a territorial authority to accept any producer statement without question. The extent to which a particular producer statement should be relied on in considering whether code requirements had been met would depend on all relevant circumstances. These would include, for example, the skill, experience and reputation of the person providing the statement, the independence of the person in relation to the works, whether the person was a member of an independent professional body and subject to disciplinary sanction, the level of scrutiny undertaken and the basis for the opinion. The territorial authority would also need to consider any other information relevant to whether the works had been carried out to an appropriate standard and could be expected to meet code requirements. This would include the skill, experience and reputation of the party carrying out the works, the complexity of the works, the likely consequences of non-compliance and whether any concerns had arisen regarding the quality of the works. Ultimately, the territorial authority was only entitled to issue a code compliance certificate if it was satisfied on reasonable grounds that the building works complied.

[116] Producer statements fall into four categories:

- (a) PS1 design – a statement from a design professional in relation to the design and intended for use in connection with the issue of a building consent.
- (b) PS2 design review – a statement from an independent design professional who has reviewed the design. This is also intended for use in connection with the issue of a building consent.
- (c) PS3 construction – a statement from the party that carried the construction works and intended for use in connection with the issue of a code compliance certificate.

- (d) PS4 construction review – a statement from an independent design professional confirming that construction has been carried out in accordance with the design. This is also intended for use in issuing a code compliance certificate.

[117] Mr Hubbuck issued the code compliance certificate without requiring a PS4 from Walker Architects despite this being one of the building consent conditions. Instead, he relied on a certificate from Façade Technologies which manufactured and installed the cladding. It was not possible to obtain a PS4 from Walker Architects at that stage because it had not overseen the cladding works, nor had anyone else.

[118] Mr Flay says that in his experience it was typical for councils to accept PS3s from installers at the time the Nautilus was built because they were in the best position to verify the installation. Mr Cody agrees and says that it would have been unusual at that time to seek a PS4 from the architect.

[119] Mr O’Sullivan was particularly well placed to assist the Court on the standard reasonably expected of a council carrying out these functions at the relevant time. He has worked closely with many councils and is familiar with their processes and procedures. He was one of number of professionals engaged by the Department of Building and Housing to undertake reviews of territorial authorities throughout New Zealand to assess their processes for issuing building consents and code compliance certificates. These reviews were carried out between September 2003 and January 2005 with the aim of assisting territorial authorities to improve their regulatory building control operations.

[120] Rodney District Council was one of the councils Mr O’Sullivan was involved in reviewing. This review was conducted in three stages, commencing in September 2003 and culminating in a final report in May 2006. The initial review revealed that Council had no formal policy or consistent practice for assessing and accepting proposed alternative solutions such as the cladding system at the Nautilus. The review also identified that Council placed strong reliance on producer statements for verifying building code requirements but had no formal policy or procedure for assessing and accepting producer statements and no register or list of approved

authors or providers to check against. The reviewers made various recommendations to Rodney District Council at the time of the initial review to address these inadequacies. However, the reviewers noted in their final report that Rodney District Council failed to implement these during 2003 or 2004.

[121] It appears that, consistent with Council's usual practice at the time, Mr Hubbuck simply relied on the certificate from Façade Technologies in issuing the code compliance certificate and did not make any further enquiries including why a PS4 was not available from Walker Architects to fulfil the building consent condition. The certificate was signed by John McEvoy but does not disclose his position with Façade Technologies, whether he had any relevant qualifications or experience or what his role was in relation to the cladding works at the Nautilus, if any. Mr McEvoy simply completed a pre-prepared form confirming that he was a duly authorised representative or agent of Façade Technologies and believed on reasonable grounds that it had completed all building works in accordance with its contract with Brookfield Multiplex. No basis for this belief was offered and no other information was provided. Mr McEvoy makes no reference to the building code and his statement is not even addressed to Council. Ms Meechan QC submits that this does not qualify as a producer statement as defined in the Act.

[122] Mr O'Sullivan considers that Council should not have relied solely on Mr McEvoy's statement as providing sufficient grounds to conclude that the cladding works complied with the code. Mr Hubbuck did not know Mr McEvoy or the basis of his belief and how reliable it was. Mr O'Sullivan says that in the absence of a PS4 from Walker Architects, Council should have made a number of further enquiries, particularly given that the cladding was not a proprietary system or one that had a proven service history, the drawings were "woefully inadequate" and Council had received an amended application well after construction had commenced showing that the cladding system had fundamentally changed. Mr O'Sullivan says that Council should have requested the shop drawings, the results of the laboratory testing that was supposed to have been carried out and detailed information about any quality assurance program. Council took none of these steps, all of which were readily open to it.

[123] Mr Cody accepts that Council should have at least sought clarification as to why the PS4 from Walker Architects was not available.

[124] Ms Thodey submits that the building process is a continuum and it is not appropriate to consider the reasonableness of a particular decision or act by Council in isolation. I accept this. When issuing the building consent, Council needed to consider how the building works were going to be inspected and what information it would need to rely on in determining whether to issue a code compliance certificate. That is what occurred in this case. Council decided that it would not be practical for it to inspect the cladding works and it accordingly made it a condition of the consent that an independent party would carry out this role and provide an appropriate assurance to Council regarding code compliance once the work was completed.

[125] I consider that blind acceptance of the certificate provided by Façade Technologies to Brookfield Multiplex was not an adequate response by Council in this case. Whether or not it was common for councils to accept PS3s from installers at the time the Nautilus was built does not mean that it was appropriate to rely on the certificate provided in this case. What will be sufficient in one case may not be in another. It obviously depends on the particular circumstances. I accept Mr Rainey's submission that the process for determining code compliance is not simply a matter of collecting pieces of paper, judgment is required.

[126] Council knew that the cladding system was not a proprietary system and had no service history. Only basic drawings were supplied at the building consent stage. It was clear from the specification that no final design had yet been developed, only a process for assessment and testing of any design before it was manufactured and installed. Council was not given shop drawings or the results of any testing. It should have been concerned when it received an application for an amended consent more than three months after installation of the cladding commenced. This is particularly so given that the cavity and drainage features of the original design were removed without explanation. Council should have made enquiries as to why no PS4 was available from Walker Architects. Having regard to the mandatory considerations under s 47 of the Act, including the size, location and complexity of

this building, I consider that Council fell below the standard reasonably expected at the time in issuing the code compliance certificate simply on the basis of Mr McEvoy's statement and without making any other enquiries.

[127] I conclude that Council is liable for the cladding defects, including at the roof edge.

Brookfield Multiplex

[128] Mr Clarke considers that the workmanship was defective to the point of being grossly negligent. He says that this was "manifestly evident" throughout the installation of the aluminium composite panels. In his view, the jointing quality was so bad that the cladding had no chance of being waterproof. For example, he observed panels on the roof edge where the reveals had been cut off making it impossible to seal.

[129] Mr Clarke says that all face-sealed installations of this type require a good standard of workmanship and rely on consistent and appropriate joint geometry, appropriate bond breaking at the back of the joints and appropriate sealant to form joints that are durable. In his view, the leaks in the roof edge areas are the result of poorly manufactured and installed panels combined with incorrectly configured sealant joints.

[130] Brookfield Multiplex breached the terms of the head contract by failing to ensure that all cladding works complied with the relevant performance requirements of the building code. The Body Corporate is the assignee of Tamariki's rights under the head contract and is accordingly entitled to recover the losses it has suffered that were caused by Brookfield Multiplex's breach.

[131] The plaintiffs are also entitled to recover in tort for the losses that were the foreseeable consequence of the negligent manufacture and installation of the cladding. Again, this includes the roof edge. Brookfield Multiplex was responsible for all of these works.

Walker Architects

[132] There is no evidence that Walker Architects sought detailed shop drawings and the other design documentation required by the specification or the laboratory test results. Nor is there any evidence that it gave appropriate consideration to the significant design changes that included the removal of the plywood backing and drainage.

[133] As previously stated, Walker Architects was engaged to undertake contract administration and observation as defined in the standard terms and conditions of the consultant agreement. This was an important quality control function and required periodic site visits and off-site shop visits to observe the progress of the works and compliance with contract documents. Walker Architects was also responsible under its contract for certifying progress payments, issuing practical completion and final completion certificates and PS4 producer statements. Although the practical completion certificate was ultimately issued by the engineer to the contract, Davis Langdon, it was based on Walker Architects' inspections. The frequency of inspections Walker Architects was required to make was specified as follows:

- (a) Not less than weekly during early stages of foundations and structure.
- (b) Not less than twice weekly visits from the commencement of the superstructure until commencement of architectural finishes.
- (c) Not less than three visits per week, and more often when necessary, from commencement of architectural finishes to completion of contract.

[134] Walker Architects was also required to deliver a monthly design check certificate to Brookfield Multiplex including notification of any work that was not strictly in accordance with the design.

[135] Mr O'Sullivan says that Walker Architects ought to have been aware from its observations that there were fundamental deficiencies in the installation of the cladding.

[136] Mr Mackie says that Walker Architects should have carefully reviewed the critical design changes that threatened the weathertightness of the building. There was no evidence that this was done.

[137] Although Mr Clarke has some sympathy for the position Walker Architects was placed in following the novation agreement, he described the installation of the cladding as “disgraceful”, “a hopeless mess” and “obviously atrocious” and says that Walker Architects ought to have issued design notices in relation to it. He was unable to find any evidence that this happened.

[138] There was no challenge to the evidence of these experts in relation to this issue and I accept it. It follows that Walker Architects is also liable for the cladding defects.

What is required to repair the defects?

[139] Mr Powell initially took the view that the defects at the roof edge could be addressed by resealing the joints and initiating an appropriate maintenance programme with regular inspections. However, at the trial, he amended his view and agreed with the other experts that the panels will have to be replaced.

[140] There was no disagreement among the experts that the cladding on the rest of the building can only be remediated by replacing it with a pressure equalised cladding system that operates as a rain screen with separate cap flashings and modified aluminium joinery. The design of this system has been developed for the plaintiffs and Council has approved it.

Decks

What are the defects?

[141] The plaintiffs claim that the decks suffer from the following defects:

- (a) there was an insufficient step-down at the deck threshold;
- (b) the waterproof membrane failed to set or cure properly;

- (c) the membrane was not dressed into outlets;
- (d) the membrane was not continuous at the nib;
- (e) corner overflows were not adequately formed; and
- (f) the waterproof membrane was applied under grout fill beneath the joinery at the threshold between the units and the decks allowing water entry by capillary action and damage to building elements.⁷

Insufficient step-down at the threshold

[142] The construction details included with the original building consent showed a 100 millimetre step-down between the interior and exterior floor slabs on levels 5 to 12 with a waterproofing membrane dressed up the face of the slab at the threshold between the units and the decks. These drawings also showed a sand cement screed over the exterior slab to form the falls for drainage. The screed was to be up to 30 millimetres in depth. Mr Woolgar says that this accorded with correct practice.

[143] Mr Woolgar says that the step-down is actually only 65 millimetres and the screed is substantially thicker than 30 millimetres with the result that in some places there is no step-down at all. This means that the aluminium sill trays for the joinery are in direct contact with the tiled surface in these places causing them to corrode.

[144] Mr Clarke confirmed that the tiles at the threshold are set significantly higher than shown on Walker Architects' drawings. He says that this was done in an attempt to provide adequate falls for drainage. He says that as a consequence, the gap between the bottom of the cladding and the deck decreased and in some instances the sill tray was buried.

[145] There was no challenge to the evidence of Messrs Woolgar and Clarke as to this defect and I accept it.

⁷ The first four defects were dealt with together as particulars of the first general defect relating to the decks, referred to at the trial as defect (d).

Failure of Membrane to cure

[146] The screed on the decks on levels 5 to 12 was covered with a liquid applied fibre reinforced acrylic known as *Dampfix 3*. This waterproof membrane was then covered with a flexible urethane based acoustic tile adhesive called *Asophonic*. The ceramic tiles were laid over this. The courtyards on the upper podium at level four were formed in the same way except that a cementitious adhesive was used in place of *Asophonic*.

[147] Tiles were lifted on the decks of 18 of the units in various locations around the building during the course of Prendos' investigation. Tiles were subsequently lifted on at least 10 further decks by experts assisting Council and the third parties. In each case, the membrane was found to be "spongy" indicating that it had not set or cured properly. Mr Woolgar believes that this will be the case on all of the decks.

[148] There is no dispute that the membranes have failed to cure and coalesce fully and as a result are not fulfilling their waterproofing function. The disagreement among the experts is limited to how this happened and who is responsible for it.

Membrane not dressed into outlets

[149] On some of the decks, the waterproofing membrane was not lapped into the PVC overflow pipes forming the main deck drain outlets. Mr Woolgar produced a photograph showing stalactites that had formed around the edge of the overflow pipe beneath one of the decks as a result of water passing through the screed and concrete and leaching calcium. Mr Woolgar acknowledges that this problem was not evident on all the decks he inspected.

[150] Mr Smith agrees that there are some instances of drain outlet failure but he says that these are isolated. Of the 133 decks he examined on levels 5 to 12, only five showed evidence of moisture on the soffits indicating that water had come from the outlets directly above.⁸ Mr Smith is unable to say whether this defect is the result of the failure of the membrane itself or because the membrane was not properly dressed into the outlet.

⁸ Mr Smith inspected all but five of the decks on levels 5 to 12.

[151] I accept Mr Woolgar's evidence that there are at least some instances where the waterproof membrane has not been dressed into the overflow pipe. However, the plaintiffs have not proved that this defect is widespread. This issue has limited consequence because the membrane has failed and will have to be replaced in any event.

Discontinuity of membrane at the nib

[152] Mr Woolgar says that because of inappropriate construction sequencing, the fixing channels for the full height glass balustrades were installed before the screed was laid on the decks and the waterproofing membrane applied. He says that the concrete nib was waterproofed separately and the membrane was therefore discontinuous between the concrete nib and the main deck. He says that this defect affects all decks on levels 5 to 12 that have full height glass balustrades, roughly half of the units.

[153] Mr Smith independently undertook destructive testing on some of the decks to verify whether this defect exists. He also found that the waterproof membrane is discontinuous at the junction between the top of the screed where it intersects with the balustrade fixing channel fixed to the concrete nib.

[154] Mr Clarke agrees that the membrane is discontinuous at this junction. I accept the unchallenged evidence of these experts concerning this fundamental defect.

Corner overflows not adequately formed

[155] This issue affects only the decks at the fishtail of the building, being the triangular cantilevered decks on the southwest and northwest corners of the building.

[156] The plaintiffs claim that there is a defect at the junction where these triangular decks intersect with the external face of the building. Small overflows, approximately 80 millimetres wide, have been cut through the concrete balustrade upstands at this junction creating a gap between the edge of the balustrade and the face of the building. This is intended to allow water to escape down the face of the

building in case the main deck outlet blocks. Mr Woolgar says that these overflow junctions rely on membrane and tiles cantilevering from the edge of the concrete decks onto the top of the aluminium composite cladding panels. He says that this detail is not in accordance with good cladding, tiling or waterproofing practice and has allowed water to enter between the aluminium panels and the deck tiling and track into the soffit space and ceilings of the apartments below. He says that he found evidence of water entry at this location in various units and damage to internal linings and corrosion of structural steel beams supporting floors.

[157] Mr Smith agrees that there is evidence of damage from water entry in these locations. However, he considers that the damage is limited and not due to any inadequacy in the design or formation of this detail. He believes that the damage has been caused by the failure of the membrane.

[158] Mr Clarke agrees with Mr Woolgar that the design of these overflow junctions, which is generally in accordance with handwritten details prepared by Walker Architects in March 2003 and submitted to Council with the amended building consent application in November 2003, is defective. He considers that these details do not illustrate adequately how the junction should be constructed in a waterproof manner and the detailing would be likely to fail in any event. He says that water arrested by the membrane under the over-capping shown on this detail would discharge behind the cladding panel and enter the soffit below the junction. This is consistent with Mr Woolgar's observations.

[159] I accept that this defect exists. For the reasons given by Messrs Woolgar and Clarke, water has been able to enter the building at this junction. Mr Smith may well be right that membrane failure is a contributing cause of water entry in this location but I am satisfied on the evidence that this is not the sole cause.

Waterproof membrane under grout fill at the threshold

[160] A rebate was cast in the concrete threshold between the units and the decks to support the joinery. The waterproof membrane was applied over the rebate. Timber packers to support and align the joinery were placed over the top and backfilled with grout but not waterproofed. Mr Woolgar says that moisture has been able to rise by

capillary action through the porous grout beneath the joinery and cause damage to carpets. Mr O'Sullivan confirmed this and says that the reduced step-down contributed to the problem.

[161] Mr Woolgar acknowledges that the full extent of this defect cannot be determined by visual inspection and destructive investigation has been limited because of the impact this would have on existing owners and tenants in the building. However he expects that this defect will occur throughout the building wherever joinery is installed at the deck threshold. Mr O'Sullivan agrees.

[162] Mr Smith inspected 133 of the decks at the Nautilus and does not believe that this defect exists. While he accepts that damage has occurred as described by Mr Woolgar, he considers that it was caused by the failure of the membrane and that the water damage to wall and ceiling linings and floor coverings has resulted from water entry from the decks above, not as a result of any issue with the grouting.

[163] Mr Clarke agrees with Messrs Woolgar and O'Sullivan as to the existence of this defect. He says that the grout should have been waterproofed prior to installation of the window and door sills and that the height of the screed relative to the joinery has contributed to this problem. However, Mr Clarke believes that the resultant damage is not as significant or widespread as the plaintiffs claim.

[164] I accept that this defect is likely to occur to a greater or lesser extent on most of the decks where joinery is installed at the threshold. In combination with the inadequate step-down, the lack of waterproofing of the grout is likely to allow moisture to enter the units by capillary action. The decks most affected will obviously be those more exposed to the weather on the western side of the building, at the fishtail.

Who is liable for these defects?

Insufficient step-down

[165] Council was alert to the need for an adequate step-down between the unit floor level and the finished floor surface of the deck. On 22 January 2003, it wrote

to Walker Architects stipulating that this step-down was to be no less than 100 millimetres. Council relaxed this requirement to 60 millimetres when issuing the building consent but emphasised the importance of this requirement by making it a condition of the consent.

[166] This requirement was not met, as would have been obvious to anyone looking at the decks. Indeed, Mr Hubbuck made a note of this during the course of inspections he carried out on four decks on level 6 on 21 November 2003:

Level 6 B, C, P, Q water proofing to decks not adequate. Not enough step between FFL and deck level ...

[167] Mr Hubbuck noted the same issue during the course of his further inspections one week later:

Level 6 – Deck water proofing inspection with Rob ... step from FFL to deck was not as shown in the consent plans & specifications.

[168] There was no evidence that Council took any action in relation to this defect and it was not addressed. Council nevertheless issued the code compliance certificate. Council offered no real defence to this aspect of the claim and I am satisfied that it is proved. Council negligently failed to take adequate steps to ensure that this defect was rectified. It was also negligent in issuing the code compliance certificate without this being done.

[169] Brookfield Multiplex is liable for this defect. It breached the construction contract in failing to ensure that this important condition of the building consent was met. It also breached the duty of care it owed to existing and subsequent owners of units at the Nautilus by failing to ensure that there was an adequate step-down from the finished floor level of the units and the surface of the decks. This was known to be an important waterproofing detail.

[170] The developer expressed concern about this issue to Walker Architects in November 2002 and March 2004:

Nautilus – Deck Step Downs

Please find attached our fax of the 15 November 2002 wherein we expressed our concern over the minimal deck step down specified on the WA construction issue drawings; upon inspection of several finished decks it is apparent that there is less than 60mm in most places and in some instances there is no gap between the underside of the threshold and the tiles. It is clear that the 60mm step down did not allow sufficient tolerance to achieve falls to deck outlets.

Your engagement included contract observation, please confirm why this issue hasn't been brought to the attention of the contractor previously and remedied; we now find ourselves in a position where remedial action at this late stage would be highly disruptive to the occupiers and is therefore unlikely to occur.

...

[171] Walker Architects is also liable for this defect. It should have been aware from its inspections that the required step-down had not been achieved and it ought to have taken steps to ensure that it was rectified.

[172] Charles Norager was not responsible for the fact that the designed step-down to the concrete slab of the deck reduced from 100 millimetres to 60 millimetres. Although the screed was thicker than designed in places, this appears to have been done in an effort to achieve an adequate fall to the drainage outlets, particularly on the larger decks. I am not persuaded on the evidence that Charles Norager is liable for this particular defect.

Failure of membrane to cure

[173] Mr Hubbuck noted during the course of his inspections on level 5 on 24 June 2003 that *Dampfix 3*, a liquid applied membrane, was being used on the decks in place of the torch-down bituminous membrane, *Nuraply*, for which consent had been given. Council requested that an amended consent be sought for this change, as was appropriate. However, this never happened.

[174] Council initially asserted that the failure of the membrane was the result of product failure contending that *Dampfix 3* is incompatible with *Asophonic*. Council pursued a third party claim against Bostik based on this theory but abandoned it during the course of the trial. Ms Thodey invited me not to place any reliance on the

expert evidence called by Council to support this thesis. I was not persuaded by this evidence and I put it to one side. The evidence establishes that *Dampfix 3* is an appropriate waterproofing membrane for use on exterior decks and is designed for use with *Asophonic*. It has the advantage of being easier to apply on decks with challenging curves, angles and corners such as those at the Nautilus.

[175] The technical data sheet issued for *Dampfix 3* emphasised the need to allow sufficient time for new concrete and screed to dry before applying the membrane:

Allow new concrete to cure for 28 days and cement render to cure for 7 days prior to the application of *Dampfix 3*. Do not apply over concrete slabs containing high moisture content.

[176] The technical data sheet also specifies the recommended curing time and temperature for *Dampfix 3* before tiling:

Tile and Mortar Bed Covering

This may be carried out after *Dampfix 3* has been allowed to cure for a minimum of 24 hours at a temperature of 25°C (longer in lower temperatures).

[177] The construction programme prepared by Brookfield Multiplex allowed a period of three days for waterproofing the balconies. It appears that this included laying the screed because this item is not separately identified. This programme did not allow the recommended drying time.

[178] Mr Smith demonstrated with reference to Council inspection records that this programme was not always adhered to. However, it is clear that the construction programme was aggressively tight. Practical completion under the head contract was due at the end of November 2003. Liquidated damages of \$15,000 per day applied from 1 December 2003. From late 2003 Brookfield Multiplex was pressuring subcontractors, including Charles Norager, to complete the works as soon as possible. A facsimile sent by Brookfield Multiplex to all sub-contractors on 5 January 2004 shows the level of pressure being applied:

RE: CONTRACT DELAY & COMPLETION

Through the course of the Contract we have incurred delays to the Contract Programme. Although not accepting of these delays, we have been understanding of the causes of them.

With the passing of Christmas, this understanding has expired. Contract completion was 30 November 2003. Liquidated Damages apply as of 1 December 2003. I am sure there are no volunteers to meet these costs, so we must limit incurring them.

Multiplex requires total commitment from all subcontractors to complete this Contract by the end of January 2004. This will require commitment from all trades **now** with greater involvement by supervisors to see the daily production quotas are met, that adequate labour is available to achieve these quotas or extra hours worked to do so.

Companies that fail to respond and who cause us not to achieve this goal will bear the brunt of any delay costs imposed. With Liquidated Damages set at \$15,000 per day these costs could be considerable.

We can meet this challenge – but it will require 100% commitment by all.

[179] The decks were not fully protected from the weather and no heaters or blowers were used to assist the drying and curing processes. Although Council suggested that the membrane may have failed because the layer of *Asophonic* was too thick, I consider that the most likely explanation is that it failed to cure because it was laid over screed that was not sufficiently dry.

[180] Messrs Higgs and Hubbuck say that Council had no intention of inspecting the thickness of the membrane or overseeing the curing period. Mr Hubbuck says that in his experience this is never done. During the course of their many inspections of the decks, neither he nor Mr Higgs noticed that the membrane had not cured adequately prior to the tiles being laid. The only relevant entry was a note by Mr Hubbuck following his inspection of various decks on level 6 on 9 December 2003 that it was a “slow curing” day due to the very humid conditions. He recorded that he had advised the supervisor to ensure that curing took place before tiles were laid.

[181] Mr O’Sullivan did not suggest that Council should have identified that the membrane had not fully cured, nor did Messrs Mackie or Tidd. Mr Woolgar says that Council would not normally inspect the screed, so would not be expected to see that it was wet when the membrane was applied. He says that Council inspectors

would typically only inspect after the membrane had been installed. He further acknowledged that the failure of the membrane to cure fully would not be obvious because in all likelihood it would have formed a skin giving it the appearance of having cured.

[182] I conclude that Council is not liable for this defect.

[183] Brookfield Multiplex and Charles Norager must take responsibility for the failure to comply with the manufacturer's technical specifications. They are accordingly both liable for this defect.

[184] Walker Architects recorded its concern about the performance of the liquid applied membrane during the course of its site inspection on 11 December 2003 when it first noticed that this was being used in place of the membrane it had specified:

Waterproofing system appears to be an applied liquid system – actual brand unknown to writer. Also, where water ponding, colouration of water indicates possibility that waterproofing is water soluble and raises concern that if permanently or persistently and regularly wet, would this affect its lifespan and performance?

[185] Walker Associates should also have ascertained the drying and curing requirements for *Dampfix 3* and taken steps to ensure that they were complied with as part of its observation role. It failed to do this despite the fact that the waterproof membrane on the decks was a critical element that it needed to inspect and approve as part of its twice weekly site visits and monthly design check certificates. I conclude that it is also liable for this defect.

Membrane not dressed into outlets

[186] Mr Mackie says that there was no detail showing how the membrane was to be dressed into the overflow outlets. Mr Woolgar confirmed this. However, the manufacturer's specifications state that this is required and Mr Woolgar agrees that a competent tiler would be expected to know this. In these circumstances, I am not persuaded that Council was negligent in issuing the building consent without this detail.

[187] However, the defect would have been apparent at the time Council inspected the membrane, assuming it was present on one or more of the decks that it inspected. Mr Woolgar acknowledges that the defect was not present on all of the decks he inspected. He says it was present in the majority of them but he did not identify them or specify the number. There is no evidence to show that this defect existed on any of the decks where membrane inspections were carried out by Council inspectors. Mr Smith's evidence that he found signs of water entry from this location on only five of the 133 decks he inspected indicates that this defect was not widespread. The plaintiffs have not established that Council is liable for this defect.

[188] For the same reasons, I am not persuaded that the plaintiffs have proved that Walker Architects ought to have identified this failure.

[189] Charles Norager was responsible for dressing the membrane into the outlets and is liable for this defect as is Brookfield Multiplex.

Membrane not continuous at the nib

[190] The construction sequence was as follows. The nib was waterproofed using the liquid applied membrane to form a bandage which lapped over the nib and down onto the concrete slab forming the base of the deck. The balustrade fixing channel, shaped like an inverted "h", was then bolted to the nib through a fixing flange. The screed was then laid. This intersected with the flange of the balustrade fixing channel. The waterproof membrane was then applied over the screed. This meant that the membrane was discontinuous where it intersected with the flange of the balustrade channel. This problem, which affects all decks with full height glass balustrades, was caused by a change to the design after the building consent was issued and by incorrect construction sequencing resulting from the compressed construction timetable.

[191] Mr Hubbuck's inspection notes show that he told Brookfield Multiplex that it would have to apply for an amended consent for the liquid applied membrane and supply full design details. He also expressed concern about the discontinuity issue and the standard of the waterproofing workmanship generally. The relevant entries in Mr Hubbuck's inspection notes are:

- (a) 25 June 2003 – approval is required from RDC for the new detail and product to be used for deck waterproofing.
- (b) 24 July 2003 – still require approval of waterproofing to decks/external wall areas.
- (c) 26 November 2003 – Rob [Multiplex] will provide sectional details for approval by RDC for the measures proposed for the decks requiring attention.
- (d) 28 November 2003 – Standard of water proofing to decks on level 6 is not adequate. Meeting with David Heritage [Multiplex] to advise him that the 150 upstand to waterproofing and step from FFL to deck was not as shown in the consent plans & specifications.
- (e) 2 December 2003 – Level 7 and 6 – Deck waterproofing (recheck required for up stand to perimeter). Apartments D, E, F, N, O plus 6G.
- (f) 9 December 2003 – still waiting for details of how deck is to be waterproofed where side-fixings of deck barrier causes problems for waterproofing – Rob is aware.
- (g) 22 January 2004 – Level 7 – Upstands to deck water proofing checked – not satisfactory advised Rob and Peter verbally.
- (h) 23 January 2004 – Level 7 – Deck water proofing upstands still not acceptable – advised Rob and Sel Panckhurst [RDC inspections team leader].
- (i) 28 January 2004 – Level 9 – Water proofing to deck upstands still require remedial work generally. Level 8 – Remedial work to deck upstand water proofing achieving an acceptable standard.

- (j) 30 January 2004 – Level 9 – Deck water proofing to upstands Ok but improvement required on barrier kerb water proofing.
- (k) 11 February 2004 – Level 10 – Water proofing upstands to deck areas inspected – all need further attention except for K, O, P.
- (l) 17 February 2004 – Level 10 – Waterproofing upstands to deck areas not accepted.
- (m) 19 February 2004 – Level 10 – Water proofing to deck A, B, C, D, E, F, N, M upstands now acceptable.
- (n) 23 February 2004 – Level 11 – Water proofing to deck upstands all apartments OK.
- (o) 1 March 2004 – Level 12, Apartment A – Waterproofing to deck upstands has been partially covered by cladding areas still visible appear to be well covered with Dampfix 3.

[192] Mr Hubbuck acknowledged that Council did not receive the amended details it required. However, he considered that placing the waterproof membrane over the screed, rather than under it as shown in the original drawings, was an improvement. He says that the principal purpose of inspecting the decks was to ensure that the screed was prepared properly, the junctions between the membranes at the thresholds were free from dust and debris and that the membrane covered the surface of the decks.

[193] Mr Hubbuck says that when the waterproof membrane was laid across the top of the screed it was turned up the vertical face at the threshold and the nib and that is how continuity was achieved. He says that “there is no way that I would have passed an “h” mould that was cutting through the screed”. The problem with this evidence is that the experts all agree that there is no such continuity at the nib because the screed intersects with the balustrade fixing flange and that this is apparent from a visual inspection. Mr Woolgar says that in order to create a

sufficient fall, by the time the screed reached the balustrade channel it was “always above the bottom of the channel”. He elaborated:

The problem is the size of the balustrade channel. It can only fit on one part of the nib. It has to sit so the top surface is just above so they can get the diagonal screed fixing into the nib so the height is governed basically by that – that fixing. That meant that the bottom of the h shaped channel was a long way down the nib. The screed needed to be installed with a fall. When that was installed it encapsulated the bottom [of the channel] and then the membrane was applied on top of that.

[194] Mr Woolgar was not challenged on this evidence. Mr Smith inspected almost all of the decks and agrees that this defect exists. Walker Architects also noted this problem at the time.

[195] I conclude that although Mr Hubbuck clearly took some care to ensure that the workmanship was carried out to an adequate standard, he failed to identify this lack of continuity despite numerous inspections that afforded him the opportunity to see it. This may be partly because he focused primarily on the threshold and coverage issues, rather than the continuity of the membrane at the nib. It may also be partly explained by the fact that he did not insist on receiving detailed drawings demonstrating how continuity would be achieved. As a result, he had nothing to inspect against to ensure that the work needed to waterproof this junction was carried out properly. Whatever the explanation, neither of the inspectors identified this fundamental defect that all experts agree is present and would have been visible. The need for effective waterproofing at this junction was well understood by councils at the time and greater attention should have been given to this detail.

[196] Council made it a condition of the original building consent that a PS4 from Walker Architects would be required in relation to the waterproofing of the decks. Council issued the code compliance certificate without receiving this. Instead, it relied on a PS3 from Charles Norager certifying that all works had been completed in accordance with the building consent and the building code. This certificate was plainly incorrect. The works were not carried out in accordance with the building consent. Council knew this. It should not have relied on this manifestly incorrect statement in concluding that the requirements of the building code had been met, particularly when it did not have detailed design information demonstrating how

compliance would be achieved. Further, Council inspectors had witnessed many instances of poor workmanship with the waterproofing works undertaken by Charles Norager on the decks. In these circumstances, Council should not have simply accepted Charles Norager's assurance that the waterproofing works met code requirements.

[197] In summary, Council fell below the required standard in relation to this defect and is liable for it. Council should have followed through on its requirement for an amended consent application supported by detailed drawings showing how code requirements would be met. It should also have detected the fact that the membrane was discontinuous at the nib during the course of its many inspections of the decks. Its failure to detect this can only be explained by Council inspectors paying insufficient attention to this critical detail. Finally, for the reasons given, it should not have relied on a PS3 from Charles Norager in issuing the code compliance certificate.

[198] Brookfield Multiplex and Charles Norager are also liable for this basic and fundamental defect.

[199] Walker Architects noted this defect during the course of its inspection on 11 December 2003 and the design advice notice it issued to Brookfield Multiplex that day also brought this issue to its attention:

Other issues arising from deck upstand/glass balustrade installation/falls, are those shown on sheet 1 attached. Having not seen installation work sequence, there appear possible issues with continuity of waterproofing and fixing at the high point of floor topping where clearance to upstand of glass extrusion bracket is smallest.

[200] Walker Architects attached drawings to this design advice raising fundamental questions about how the waterproofing system would work: "applied liquid w/p membrane?/system"; "is there waterproofing here"; "how does w/p work, is it continuous?"; "was bolt fitted before conc?"; and "is bolt sealed in place where membrane penetrated?".

[201] However, it failed to follow up on this issue and ensure that it was addressed properly. In these circumstances, I consider that Walker Architects is also liable for this defect.

Corner overflows not adequately formed

[202] The design submitted with the original consent application showed the concrete nib continuing to the face of the building on the fishtail decks. The corner overflows were introduced with the application for an amended consent. This showed the membrane transitioning from the deck to the aluminium composite cladding panels but no detail was given to show how the membrane would be able to span this gap without a substrate. Mr Woolgar says that no amount of sealant would work, except in the short term, because of the differential movement between the cladding panel and the concrete surface. He says that the membrane would inevitably tear because it is not designed to “span fresh air”.

[203] Mr O’Sullivan described this detail as a “distinctly flawed design”. He says that this detail could never work and this method of installation was known to be defective at the time. He says that Council ought to have identified this issue when it considered the amended design and during the course of their onsite inspections.

[204] Mr Tidd says that council inspectors were generally aware from the late 1990s of the need to scrutinise deck drainage and overflow details at consent stage and during the course of inspections. Mr Woolgar says that this detail was obviously wrong and would have been readily visible to a council inspector inspecting the membrane. Mr Clarke agrees that the design details were defective and deficient.

[205] I conclude that Council should not have approved the amended design and should have identified this defect during the course of its inspections. It is therefore liable for this defect.

[206] Walker Architects failed to design an effective solution for these overflows. I conclude that it is also liable for this defect. Brookfield Multiplex is also liable, having overall responsibility for the works.

[207] Charles Norager is also liable for this defect. Although Charles Norager carried out the works generally in conformity with the design, there was evidence that their workmanship was poor in connection with this detail. Charles Norager should also have realised that this detail was contrary to good tiling and waterproofing practice and would inevitably fail.

Waterproof membrane under grout fill at threshold

[208] The inspection records show that Messrs Hubbuck and Higgs paid particular attention to the waterproofing at the threshold. However, neither of them noted this issue. Mr O'Sullivan says that this defect was evident during his initial visit to the site and should have been apparent to council inspectors when they inspected the decks. I accept Mr O'Sullivan's evidence about this.

[209] I consider that Walker Architects should also have identified this defect during the course of its inspections and taken steps to ensure that it was rectified. Brookfield Multiplex is also liable for this defect.

What is required to repair these defects?

[210] There is no dispute that to remediate the defects, the tiles will need to be lifted, the screed removed and with it, the membrane. The balustrade fixing channels will also have to be removed, as will the joinery. The works will all have to be redone.

Balustrades

What are the defects?

[211] Initially, the plaintiffs claimed that the fixings for the full height balustrades are not structurally adequate and create a risk to safety from falling. However, at an experts' conference convened shortly prior to the commencement of the trial, agreement was reached that all balustrades are structurally adequate other than for inward wind loads on the fishtail decks. Further fixings will be required on these balustrades.

[212] The second alleged defect is that water is able to gain entry into the building substrate through screw fixings. As noted, the glass balustrades are fixed at the base using an aluminium channel which is shaped like an inverted "h". These channels are fixed at the top with screws placed diagonally through the channels. The plaintiffs claim that these provide a path for water entry.

[213] The balustrade glass is set in the channels with concrete grout and sealed using rubber gaskets or sealant. Mr Woolgar says that water has been able to accumulate in the channels because they are not drained and are poorly sealed at the top. The water can only discharge through the screw fixings or at junctions between the glass panels and at poorly sealed corners.⁹

[214] To investigate this issue, scaffolding was erected on the outside of the building so that cladding panels at the edge of various decks could be removed. It became evident that water had penetrated the timber packer on top of the concrete nib to which the screws were fixed on the full height balustrades. Sealant was removed from a section of the balustrade channels enabling them to be dye tested. This showed that water could penetrate through the screw fixings.

[215] Mr Woolgar says that all of the balustrades, including the half height balustrades, have been installed the same way. He considers that it is highly likely that all balustrades will leak in the future, if they do not already do so. Mr O'Sullivan agrees.

[216] Mr Smith found that in all cases a rubber gasket has been fitted to the inner face of the balustrade. However, only 13 of the 133 decks he inspected had a rubber gasket on the outer face. The others had all been sealed using sealant. He agrees that the balustrades with rubber gaskets on the outside leak. He says that this is because these gaskets do not create an adequate seal.

[217] Mr Smith says that those balustrades where the gaskets have been replaced with sealant are now watertight. He considers that the dye testing undertaken by

⁹ Most balustrades have a single glass panel but many have more than one such as those on level 12, the triangular decks at the fishtail and at the "gills" (a design detail towards the eastern end of the building).

Mr Woolgar showing leaks where sealant has been used is flawed because the sealant was removed prior to testing. Mr Smith carried out similar dye tests at two units leaving the sealant in place. One of these was a full height balustrade and the other was half height. Mr Smith says that he could find no sign of water leakage during such testing.

[218] Mr Lalas also says that the rubber gaskets do not provide an adequate means of sealing the fixing screws. He says that the screws should have been sealed using sealant at the time they were installed. Mr Clarke agrees.

[219] It appears that the rubber gaskets on the outer face of the glass balustrades were replaced with sealant in about November 2004 when this defect was first discovered. There is no dispute that this defect continues to exist on the 13 decks where the rubber gaskets have not yet been replaced with sealant.

[220] Mr Woolgar acknowledged that it is difficult to determine the source of water entry in all cases. While it is clear that in some places water is coming through the screw fixings damaging the substrate, water is also entering through joins in the channels, through defective seals in cladding joints in the same location and as a result of the discontinuous membrane at the base of the "h" channel.

[221] I accept the plaintiffs' claim that this detail is defective because the screw fixings were not properly sealed at the time of installation. Insufficient attention was given to the likelihood of water accumulating in the undrained balustrade fixing channels and penetrating the substrate through the screw fixings. I accept Mr Woolgar's evidence that if the sealant that was subsequently applied is preventing water entry through the screw fixings, this is more by accident than design. I consider that the remedial steps taken in late 2004 cannot be relied on as providing an effective and enduring solution for such an important weatherproofing detail.

Who is responsible for these defects?

[222] Council is not liable for the structural defect on the fishtail decks. There is no suggestion that it was negligent in approving the design at consent stage.

Mr O'Sullivan also accepts that Council was entitled to rely on the PS3 in confirming compliance with the structural requirements of the code.

[223] As to the second defect, the initial design of the balustrades, prepared by Walker Architects in September 2002 and submitted to Council with the original application for building consent, showed the balustrade channel fixed to the side of a steel beam at the bottom of the inverted "h" with a cap flashing over the top. There was no diagonal screw through the balustrade channel itself.

[224] A revised design dated 28 April 2003 was approved by Council as part of the amended consent. The steel beam was replaced with a concrete beam and the design of the aluminium fixing channel was modified. It was side fixed at the bottom and through a flange at the top. Again, there was no fixing through the channel and a cap flashing was shown.

[225] Neither of these designs was followed. It appears that the final design was prepared by Façade Technologies in late July 2003 and sent to Brookfield Multiplex. This design showed the diagonal screw fixing through the channel at the top and the side fixing at the bottom. The junction between the cladding and balustrade was formed with sealant and the cap flashing was removed.

[226] Council did not raise any issue with the balustrades even though the detailing differed substantially from what it had approved. However, Council inspectors would not have been able to see the screw in the channel because of the gasket placed above. Further, as Mr O'Sullivan acknowledged, Council was unlikely to be aware of the ramifications of the design and would have relied on the suppliers and installers of the balustrades. Council received a PS3 signed by the managing director of Glass Relate Ltd, the company that supplied and installed the balustrades, confirming that the works complied with the building code. Messrs O'Sullivan and Tidd accepted that Council was entitled to rely on this statement in assessing compliance of this aspect of the works with the building code for the purposes of the code compliance certificate.

[227] Brookfield Multiplex is liable for this defect. It had overall responsibility to ensure that the works met the requirements of the code.

[228] Mr Clarke says that Glass Relate is responsible for this defect because it prepared the as-built design, not Walker Architects. However, I consider that Walker Architects is also liable because it did not ensure that the design it prepared for building consent purposes was followed or alternatively that the amended design would be compliant and weathertight. In any event, it appears that Walker Architects approved the as-built design in October 2003 after Glass Relate sent it the shop drawings.¹⁰ Walker Architects should also have raised concerns about the weathertightness of the actual design during the course of its regular onsite inspections.

What is required to repair these defects?

[229] The balustrades will have to be removed to remediate these and other defects on the decks. The adjacent cladding will also have to be removed so that damaged building elements including timber packers and framing can be replaced where necessary. The plaintiffs propose, based on Prendos' advice, to replace the balustrade channels with a free draining fixing system. They also propose separate cap flashings as shown on the original drawings prepared by Walker Architects and submitted with the building consent application and the amended application.

[230] Mr Smith considers that a more modest solution would be sufficient. He agrees that where the rubber gaskets have been installed, the cladding panels should be removed to allow inspection and replacement where necessary of the underlying timber framing. He does not expect that the damage will be extensive because the timber is H3 treated. He says that the rubber gaskets should be replaced with sealant over a backing rod and the cladding panels reinstalled.

[231] Mr Lalas agrees that the cladding will need to be removed to allow the timber framing to be inspected for damage. He believes that any damaged timber can be

¹⁰ Although only the shop drawings relating to the balustrade installation at the podium have been located, Mr Woolgar says that the detail shown in these drawings was followed on the more vulnerable tower decks.

replaced without removing the balustrade. He says that the diagonal screw fixing can be plugged with sealant and this will be effective as long as the balustrade base channel is drained. In any event, Mr Lalas also believes that it would be possible to remove the full height balustrade panels, which are up to six metres long, in one piece by cutting off the stainless steel screw at the top of the channel and removing the bolts at the bottom. This would require removing the screed and the membrane. Mr Lalas says that with “clever handling”, the balustrades could be re-used.

[232] This evidence emerged during supplementary evidence in chief. Mr Lalas did not raise it at the experts’ conference convened shortly prior to the commencement of the trial or in his brief of evidence. Mr Woolgar says that he has considered trying to re-use the balustrades but believes that this is not practically or economically feasible. I accept Mr Woolgar’s evidence. I do not consider that the plaintiffs should have to bear the risk that Mr Lalas’ suggested remediation will not work.

Podium

What are the defects?

[233] The plaintiffs claim that there are two defects on the podiums. The first is at the bottom of the steps connecting the upper and lower podiums. The waterproof membranes are dissimilar and incompatible at this junction. The plaintiffs claim that this has created a path for water to enter the building. The second defect is that there is no capping on top of the block walls on the upper and lower podium areas at the perimeter of the podium areas. As a result, water has been able to enter and cause widespread cracking to the faces of the upper block walls and to the tops of the lower block walls.

[234] The experts agree that both of these defects exist.

Who is responsible for these defects?

[235] Mr Cavan explained that this problem arose as a result of construction sequencing. Brookfield Multiplex commenced construction of the upper podium

shortly after building the lower podium and installed the precast connecting stairs before the waterproof membrane was installed on the lower podium. This meant Walker Architects' design, which showed the *Neuchatel* membrane passing under the stairs, was not followed.

[236] Mr O'Sullivan says that Brookfield Multiplex was directly involved in the design and construction of the junction at the bottom of these steps by permitting its subcontractors to depart from the design and attempt to form a junction between incompatible membranes, *Dampfix 3* on the stairs and *Neuchatel* at the base of them. He says that such junctions are bound to fail. Mr Clarke agrees that Brookfield Multiplex is liable for this defect which he says was caused by incorrect construction sequencing. I accept this evidence.

[237] The plaintiffs have not established that Council is liable for this defect. There would have been no such problem had the works been carried out in accordance with the plans provided to Council for building consent purposes. Mr Hubbuck says that he did not inspect this particular detail and was not aware of this issue. Mr O'Sullivan acknowledged that it would have been difficult for council inspectors to identify this defect unless they happened to be on site at the time these junctions were clearly visible. He was unable to prove that they were and Mr Hubbuck says he was not. Mr Clarke confirms that council inspectors would have been unlikely to observe this problem. Mr Tidd does not suggest that Council is responsible for this defect.

[238] Mr O'Sullivan says that the design initially prepared by Walker Architects was likely to succeed but was not followed. However, he considers that it is liable for failing to identify the issue during site inspections. Mr Clarke agrees that Walker Architects failed to take appropriate steps to ensure that this problem was addressed appropriately. I accept that Walker Architects should have identified this problem and is therefore also liable for this defect.

[239] There was no challenge to Mr O'Sullivan's evidence that Charles Norager is also responsible for this defect because they should have seen that the junction between the dissimilar membranes was defective.

[240] As to the second defect, the plans prepared by Walker Architects and submitted to Council showed cap flashings on the top of the block walls at the perimeter of the building. However, these cap flashings were not installed. Mr Hubbuck noticed this during the course of his inspections but was not concerned because the walls were modified so that the tops of the blocks were plastered and had a curved shape. He considered that this would ensure that any surface water would be shed and, so long as an appropriate paint finish was maintained, the structure would be weathertight and would comply with the building code.

[241] Mr O'Sullivan says that the capping specified by Walker Architects was required to prevent water entry because cementitious products like these block walls are always highly likely to crack. Mr Clarke says that no paint system will be effective in waterproofing masonry walls that have cracked, as these have. Mr Cavan believes that damage to the face of the block work caused by water entering through the top surface was likely to have been evident by the time of Council's final inspection before issuing the code compliance certificate. He was not challenged on this statement. Mr Powell acknowledges that cracked masonry walls with near flat surfaces will allow some water entry and he agrees that it is not good practice for them not to be capped. Mr Tidd says that the need for cap flashings was well known at the time. He considers that Council should have queried why they were omitted, contrary to the consented plans.

[242] Council was aware that the masonry capping shown on the consented plans was not installed. The capping was obviously an important weatherproofing detail. I consider that Council should not have issued the code compliance certificate without receiving confirmation from Walker Architects or some other reliable source that the capping was not required.

[243] Brookfield Multiplex wrote to Walker Architects on 15 October 2003 asking why the cap flashings had been reintroduced when Brookfield Multiplex wanted them removed to save costs. Walker Architects responded on 22 October 2003:

The deletion of the capping to the Podium precast wall panels poses serious water proofing problems. This capping must be reintroduced to avoid water ingress down through the concrete. Two problems will occur if it is omitted. 1: Water will seep down through the concrete into the car parks.

This will cause efflorescence to grow from the walls. 2: Water will get under the paint finish, the paint will bubble and come away.

[244] This evidence shows that Walker Architects did not approve the removal of the cap flashings it had consistently shown in the drawings but Brookfield Multiplex directed that they be removed in order to save costs. Walker Architects did its best to persuade Brookfield Multiplex to include the capping by explaining in clear terms why this was necessary and what would happen if the capping was omitted. Their advice has proved to be accurate. In these circumstances, I do not consider that Walker Architects can be held responsible for this defect. Brookfield Multiplex is liable, having directed the change.

What is required to repair these defects?

[245] The experts agree that the remedial solution proposed by Prendos in relation to the first defect, which involves overlapping the membranes, is appropriate. They also agree that cap flashings should be added to overcome the second defect.

What will it cost to repair the defects?

[246] Prendos has prepared remedial design plans which in broad terms include constructing a new roof over the plant room; removing the exterior cladding (including the roof edge) and aluminium joinery and replacing it with a pressurised rain screen system with separate cap flashings and modified aluminium joinery; removing and replacing all deck balustrades, tiles, screed and membranes; and carrying out repairs to affected areas on the upper podium.

[247] Tenders for these works closed on 27 June 2014. The plaintiffs' claim is based on the tender price recommended by Prendos. An amount has been deducted for betterment. A contingency sum allowance, being 10 per cent of the expected construction cost, has been added to the claim. Building consent costs, contract insurance and design and project administration fees have also been added bringing the total remedial construction cost claimed to \$23,039,098.71.

[248] Shane Albrecht, an experienced quantity surveyor engaged by the plaintiffs, allocated these costs to the various defects in consultation with Messrs Woolgar and

O'Sullivan. As Mr Albrecht acknowledges, this is not an exact science and requires a considerable degree of judgment in some instances. Council and the Underwriters accept that the apportionment proposed by the plaintiffs is appropriate but say that the costs associated with the balustrades should be treated as collateral damage. Mr Rainey confirms that costs associated with the balustrades are collateral damage in the sense that they will have to be replaced in order to remediate other defects on the decks in any event.

[249] Council takes issue with some aspects of the claimed repair costs and I now deal with these.

Storage allowance

[250] Mr Albrecht has included an amount of \$20,000 in the claim to allow for the cost of storing materials offsite while repairs are undertaken. This was proposed by Legacy Construction Ltd, the preferred tenderer. James White, also an experienced quantity surveyor, was engaged by Council to review the quantum of the claim. He excluded this allowance from his estimate of the remedial costs. However, Mr White accepted that this cost might be incurred and did not challenge the quantum. Ms Thodey did not refer to this issue in her closing submissions and it may not now be in dispute. In any event, I accept that the plaintiffs' claim for this sum is reasonable and should be allowed.

Allowance for wall straightening and reinstatement

[251] The plaintiffs' experts have allowed a provisional sum of \$354,000 for wall straightening and reinstatement. Council considers that this allowance should be reduced by \$147,000 to \$207,000. The difference in view concerns the extent of the misalignment of the timber framing which will need to be corrected in order to create an even surface for attaching the rigid air barrier for the cladding system. Mr White made this reduction based on Mr Powell's advice that he has not seen evidence of widespread misalignment.

[252] It is not possible to establish the extent of the misalignment without removing all of the cladding. Mr Woolgar removed sections of the cladding from levels 4 to

12. Panels spanning two levels were removed at a time enabling him to assess the extent of the misalignment from one floor to the next. He says that in most instances he found a degree of misalignment that would need to be addressed.

[253] Mr Woolgar has investigated this issue more thoroughly than anyone else and I accept his assessment of the likely extent of the misalignment. I make no deduction from the claim in relation to this.

Allowance to remediate corrosion to structural steel

[254] The plaintiffs' experts have allowed a provisional sum of \$111,000 to address the corrosion of structural steel. Council accepts that there is likely to be some corroded steel that will have to be remediated but considers that this will be limited to the more exposed decks on level 12 and at the fishtail. It suggests that the provisional sum ought to be reduced by \$66,000 to \$45,000 for this work because no more than 40 per cent of the decks should be regarded as exposed.

[255] Once again, it will not be possible to assess accurately the extent of work required until the cladding is removed. Having regard to the extremely poor state of the cladding, I am not confident that corroded steelwork will be confined to the more exposed decks. I accept Mr Woolgar's assessment in relation to this.

Wall cladding

[256] The plaintiffs' claim in relation to the cladding is not based on the lowest tender. Council says that the claim ought to be reduced for this reason from \$3,421,020 to \$3,082,860, a difference of \$338,160. The plaintiffs' experts recommend the slightly more expensive cladding solution because it has a proven track record in New Zealand. By contrast, the other product has only been available in New Zealand for a short period and has not been used on a building comparable in size to the Nautilus.

[257] In view of the history of this building and the critical importance of the cladding system, I consider that the plaintiffs' decision to proceed with the more

proven system in accordance with their experts' advice is reasonable, particularly given that the price differential is comparatively modest.

Timber soffit framing

[258] The plaintiffs' experts have directed tenderers to allow for the removal and replacement of all timber framing in the soffits. The tender cost for this is \$263,942. Mr Smith does not consider that the timber needs to be removed and accordingly he makes no allowance for this. He suggests that any timber framing that does require replacement in this area is already allowed for in the general allowance for timber replacement. He also considers that the framing does not need to be removed to facilitate access and that contractors are accustomed to working in areas where timber framing remains in place.

[259] Mr Woolgar explained that the reason for removing the timber framing is not because widespread decay of the timber is expected but because this will provide unimpeded access to this area to enable remedial works to be carried out more efficiently. The plaintiffs' experts consider that this is the most cost effective solution overall. Mr Woolgar also says that the general allowance for timber replacement takes no account of the timber framing in the soffits. Mr Albrecht confirmed this.

[260] Mr Smith is correct that the framing does not have to be removed to allow access. However, if it remains in place, additional costs will be incurred because of the difficulty of having to work around it to remediate other building elements. Mr Smith has not calculated this additional cost and allows nothing for it. He also makes no allowance for the replacement of decayed timber framing. The plaintiffs' experts have considered the issue and believe that the most cost effective solution is to remove this framing. I am not persuaded that their assessment is wrong. For these reasons, I do not consider that any deduction should be made for this item.

Overcladding of planter walls

[261] The masonry walls between the upper and lower podiums have cracked. The plaintiffs claim that this is because of water ingress caused by the omission of the

cap flashings. Now that the walls have cracked, the plaintiffs' experts say that no paint system will provide an effective seal. They therefore propose to clad the walls with fibre cement sheeting and plaster them over at a cost of \$105,183.

[262] Mr Powell does not accept that the walls have cracked because of water ingress. He makes no allowance for cladding the walls as he considers that it would be sufficient to repair and paint them periodically as part of an ongoing maintenance regime.

[263] I am satisfied that these walls need to be waterproofed to prevent further damage to the building. I accept that painting the walls will not achieve this because of the cracking. I therefore consider that the plaintiffs' proposal is reasonable and that no deduction should be made for this item.

Contingency sum

[264] The plaintiffs' claim includes a contingency sum calculated as 10 per cent of the total construction costs. Mr White suggests that a contingency sum of five per cent would be more appropriate given that the defects in the building have been extensively investigated by numerous experts over a five or six year period. He also suggests that appropriate provisional sums have been allowed in those instances where the extent of the damage is unknown.

[265] I consider that there is merit in what Mr White says. However, the contingency allowance he proposes is at the bottom end of the generally accepted range. I fix the appropriate contingency allowance at 7.5 per cent of the total construction costs.

Design and contract administration fees

[266] Mr O'Sullivan explained how the design and contract administration fees have been assessed. He was not cross examined on this issue. Mr Albrecht considered that the actual and estimated fees are reasonable for this project. Mr Albrecht was not cross examined about this either. Mr White accepted that the

fees charged to date are reasonable. Save for the minor proportional deductions referred to below, I accept that the estimated fees are reasonable.

Proportional deductions

[267] Ms Thodey correctly observes that proportional deductions will need to be made to those sums which are calculated on the total contract cost being building consent and insurance, the contingency sum, professional fees and GST. However, the only deductions are for betterment in relation to carpet replacement and internal decorating, discussed below.

Has an appropriate allowance been made for betterment?

[268] Although some defendants specifically pleaded this issue by way of defence, there was no challenge to the evidence given by the plaintiffs' experts regarding the amount that should be deducted for betterment save in two minor respects.

Internal redecoration

[269] The claim includes the cost of repainting the internal walls and ceilings of rooms affected by joinery removal and reinstatement. The plaintiffs say that all walls and ceilings should be painted whereas Council maintains that only walls and ceilings immediately adjacent to the affected areas need to be painted. Council says that \$166,000 should be deducted from the claim because only 50 per cent of these areas will need to be painted.

[270] It will only be necessary to repaint all of the walls and the ceilings if the paint on these surfaces is aged. I consider that the cost of painting the additional surfaces will reflect betterment. I therefore consider that this deduction is reasonable.

Allowance for carpet depreciation

[271] Mr Rainey responsibly accepted in closing submissions that the claim for carpet replacement includes an element of betterment and that the deduction proposed by Council of \$111,000 for this is reasonable. I agree.

Are plaintiffs with assigned claims entitled to recover?

[272] Some of the plaintiffs purchased their units with knowledge of the defects and took assignments from the vendor of the right to pursue the present claims. Council pleads that the claims by these assignees are only as good as the claims that could have been made by the assignors. This is obviously correct.

[273] Council also pleads that the assignments are void because they offend the rules against maintenance and champerty. The classic definition of maintenance in this context is:¹¹

an officious intermeddling in a suit which no way belongs to one, by maintaining or assisting either party with money or otherwise, to prosecute or defend it.

[274] In *First City Corporation Ltd v Downsvieview Nominees Ltd*, Gault J described what is meant by these long standing general rules which are based on the general prohibition against the enforceability of contracts which are contrary to public policy:¹²

The essence of champerty is maintenance coupled with an agreement that the maintainer shall have a share of the amount recovered in the action maintained. Champerty has been viewed as a particularly obnoxious form of maintenance.

[275] It has long been recognised that where the assignment of a cause of action is incidental to the assignment of a property right, no issue of maintenance or champerty arises. In *Ellis v Torrington*, Scrutton LJ observed:¹³

But early in the development of the law the Courts of equity and perhaps the Courts of common law also took the view that where the right of action was not a bare right, but was incident or subsidiary to a right in property, an assignment of the right of action was permissible, and did not savour of champerty or maintenance.

[276] Where an assignee has a genuine commercial interest in the enforcement of the claim of another and to that extent takes an assignment of that claim, this will not

¹¹ William Blackstone *Commentaries on the Laws of England: A Facsimile of the First Edition of 1765-1769 with an Introduction by Thomas A Green* (a reprint of the first edition (1769), University of Chicago Press, Chicago, 1979) vol 4 at 134.

¹² *First City Corporation Ltd v Downsvieview Nominees Ltd* [1989] 3 NZLR 710 (HC) at 754.

¹³ *Ellis v Torrington* [1920] 1 KB 399 (CA) at 411.

offend the rule unless there is something objectionable about the terms of the assignment. Lord Roskill confirmed this in *Trendtex Trading Corp v Credit Suisse*:¹⁴

The court should look at the totality of the transaction. If the assignment is of a property right or interest and the cause of action is ancillary to that right or interest, or if the assignee had a genuine commercial interest in taking the assignment and in enforcing it for his own benefit, I see no reason why the assignment should be struck down as an assignment of a bare cause of action or as savouring of maintenance.

[277] Claims in both contract and tort can be assigned where there is a genuine commercial interest but purely personal claims cannot, for example for personal injury, defamation or false imprisonment. In *First City v Downsvlew*, Gault J stated:¹⁵

The original justification for the blanket rule preventing assignment of rights to sue in tort was that the law does not give effect to arrangements savouring of champerty. The same considerations apply to the assignments of causes of action in contract. Therefore it seems logical that the test should be the same whether in contract or tort; ie does the assignee have a legitimate commercial interest in taking the assignment of the cause of action?

...

Such a test still excludes the assignment of personal torts such as defamation and false imprisonment, but it would permit assignment of torts relating to property, as in this case.

[278] For this reason, the assignee plaintiffs in the present case accept that they are unable to obtain general damages for distress and inconvenience.

[279] Ms Thodey placed particular reliance on the Federal Court's decision in *National Mutual Property Services (Australia) Pty Ltd v Citibank Savings Ltd & Ors*.¹⁶ In that case, investors pursued claims against National Mutual, Citibank and individual agents in respect of their entry into "negative gearing packages". These claims were brought in negligence, under the Trade Practices Act 1974, and under the Securities Industry Code (Vic). National Mutual paid the investors' claims in full and took an assignment of their causes of action against Citibank and the agents.

¹⁴ *Trendtex Trading Corp v Credit Suisse* [1982] AC 679 (HL) at 703.

¹⁵ At 757.

¹⁶ *National Mutual Property Services (Australia) Pty Ltd v Citibank Savings Ltd & Or* (1995) 132 ALR 514 (FCA).

[280] Lindgren J struck out parts of the claim on the basis that the investors had been paid in full and there was therefore nothing left for National Mutual to recover pursuant to the purported assignments of the plaintiffs' claims against the other defendants. Further, the Court held that the causes of action under the Trade Practices Act and the Securities Industry Code were not assignable because only the investors came within the statutory descriptions of persons entitled to claim. In any event, Lindgren J held that the causes of action were not assignable in terms of *Trendtex*:¹⁷

By reference to three matters, however, I do not think that the "genuine commercial interest" limb of the *Trendtex* is satisfied. First, the genuine commercial interest referred to in *Trendtex* is not a nebulous notion of the general commercial advantage of the assignee but something more specific and limited. In particular, it does not embrace an interest arising from an arrangement voluntarily entered into by the assignee of which the impugned assignment is an essential part, like the arrangement in the present case. Rather, the expression refers to a commercial arrangement which exists already or by reason of other matters, and which receives ancillary support from the assignment.

Secondly, it is clear that the assignments have been taken because the National Mutual companies believe that they offer them an advantage not available under s 5(1)C of the [Law Reform (Miscellaneous Provisions) Act 1946 (NSW)] or its Victorian equivalent...

...

Thirdly, it may well be that without the making of the payments by the National Mutual companies to the claimants, they or most of them would not have sued because of the relative modesty of the individual amounts at stake. In light of this, in paying out all claims in full and taking assignments, the National Mutual companies might be seen to have behaved commendably. But the fact remains that their conduct is, on the above hypothesis, directed to the encouragement of litigation the proceeds of which will go to themselves, where otherwise there may have been no litigation at all. Thus, there are present the twin evils of maintenance and champerty at which the rule against the assignment of bare causes of action is directed.

[281] This decision was recently followed by Fogarty J in *Body Corporate 160361 (Fleetwood Apartments) v BC 2004 Ltd & Anor*.¹⁸ In that case, the council settled the plaintiffs' claims relating to weathertightness defects in a multi-unit development and took an assignment of the plaintiffs' claims against other defendants. In terms of the assignment, the plaintiffs were to receive the first \$200,000 of any recovery.

¹⁷ At 540.

¹⁸ *Body Corporate 160361 (Fleetwood Apartments) v BC 2004 Ltd & Anor* [2014] NZHC 1514.

Council would receive the next \$1.5 million to reimburse the amount it paid in settlement plus its entire legal costs for pursuing the assigned claims. The plaintiffs would receive any excess.

[282] Fogarty J applied *Trendtex* and *National Mutual v Citibank* in finding that the assignment was void as being contrary to public policy. This was particularly because the assignment would frustrate the Court's ability to do justice between the parties by apportioning contribution between defendants as required under s 17 of the Law Reform Act 1936. The Judge pointed out that if the assignment was permitted to stand, there would be nothing to stop any defendant in any proceeding involving more than one defendant from purchasing a plaintiff's causes of action against other defendants as part of a settlement, creating a market for trading in these claims.

[283] These decisions are distinguishable from the present case in which the plaintiffs were primarily acquiring property rights. The assigned causes of action were incidental to those rights. By purchasing their units, which were known to have defects, the plaintiffs were accepting an obligation to contribute their proportionate share of unquantified repair costs. In taking an assignment of the vendor's rights against those parties thought to be responsible for those defects, they were obtaining a measure of protection against these costs. They were not buying their units to acquire a cause of action. Rather, they were buying the units and the vendor's rights of action in relation to the defects in those units.

[284] The alternative for these plaintiffs would have been to acquire the units at a greater discount leaving the vendors to sue for losses on sale. Either way, the claims would be pursued. I cannot see how it would be contrary to public policy to allow the assignments to stand, thereby ensuring that the amount potentially recoverable is more accurately aligned to the actual repair costs.

[285] Council endeavoured to establish with valuation evidence that the anticipated repair costs were fully recognised in the purchase price such that these plaintiffs will receive double recovery. The valuations relied on by Council to establish the

“affected value” of the units do not reflect the relevant market transactions in most instances:

Unit	Assessed Affected Value	Actual Sale Price
710	\$280,000	\$100,000
1206	\$670,000	\$540,000
513	\$190,000	\$200,000
1010	\$260,000	\$200,000
410	\$280,000	\$140,000
811	\$280,000	\$110,000
1102	\$460,000	\$450,000
1112	\$320,000	\$217,000
917	\$330,000	\$360,000
901	\$630,000	\$675,000
111	\$310,000	\$340,000
1213	\$530,000	\$515,000
1007	\$490,000	\$365,000

[286] This table demonstrates the difficulty of assessing accurately the value of units in a building suffering from fundamental defects that will cost many millions of

dollars to remediate and where the prospects of recovery are uncertain. I am not persuaded that these plaintiffs paid more or less than market value for the rights acquired. Some may do well, others may not. None of this affects the validity of the assignments in my view.

Are the plaintiffs entitled to the cost of temporary repairs?

[287] The plaintiffs claimed interim repair costs of \$179,316. Of this, the sum of \$149,615 related to the costs of additional bracing to the balustrades because of their concern that the balustrades were structurally inadequate and created a risk from falling. The plaintiffs now accept that there was no such risk and that they are not entitled to recover these costs. There was no challenge to the balance of \$29,701.

Are the plaintiffs entitled to consequential losses?

[288] The plaintiffs claim consequential losses arising as a result of their units not being able to be used while the repairs are carried out. The total claim under this heading is \$1,284,673.80 and comprises the estimated costs of obtaining alternative accommodation for those plaintiffs who occupy their own units, lost income for those plaintiffs who lease their units to third parties, storage and removal costs and some other minor sundry costs.

[289] Consequential losses of this type are clearly recoverable and there is no dispute concerning the amount claimed.

Are the plaintiffs entitled to general damages?

[290] The plaintiffs also claim general damages for stress, anxiety and inconvenience arising from the defects. Those plaintiffs who occupy their units claim \$25,000 as general damages. Owners who do not occupy their units claim \$15,000. There is no dispute that such damages are generally appropriate in a case like the present. Nor is there any dispute concerning the quantum claimed. However, Ms Thodey submits that second plaintiffs who own more than one unit should receive only one award of general damages. This is clearly correct, as

Mr Rainey readily acknowledged.¹⁹ Ms Thodey also submits that eight of the units have been incorrectly categorised as owner/occupiers whereas the evidence shows that this is not the case.²⁰ Mr Rainey also acknowledged this error and an adjustment for this is also required. Subject to these adjustments, the amounts claimed by the plaintiffs under this head of damages are appropriate.

Did any of the plaintiffs fail to mitigate their loss?

[291] Walker Architects pleaded that the plaintiffs failed to mitigate their loss by not carrying out remedial works earlier. Walker Architects has taken no part in the proceedings after it was placed in liquidation shortly prior to the commencement of the trial. No evidence was led to support this defence and it was not pursued by any other party. The plaintiffs did not become aware of the extent of the defects until Prendos issued their second report in June 2009. Having regard to the scale and cost of the remedial works required, I do not consider that there is any basis for a contention that the plaintiffs have failed to mitigate their loss by not carrying out these works earlier.

Did any of the plaintiffs contribute to their own losses?

[292] Council, Brookfield Multiplex and Walker Architects each raise an affirmative defence of contributory negligence. The allegations made in support of these defences are similar and it is therefore convenient to deal with them together.

[293] Section 3(1) of the Contributory Negligence Act 1947 provides:

Where any person suffers damage as the result partly of his own fault and partly of the fault of any other person or persons, a claim in respect of that damage shall not be defeated by reason of the fault of the person suffering the damage, but the damages recoverable in respect thereof shall be reduced to such extent as the Court thinks just and equitable having regard to the claimants' share in the responsibility for the damage.

¹⁹ The required adjustment is in respect of the claims by Mr Hill who owns units 607 and 715, the P and R Family Trust which owns units 414 and 514 and Mr Brown who owns units 702 and 714.

²⁰ The general damages payable to the plaintiff owners of units 212, 507, 509, 601, 612, 704, 802 and 1009 should be reduced in each case from \$25,000 to \$15,000.

[294] The question is whether the plaintiff acted reasonably in all of the circumstances in safeguarding his or her own interests. This is an objective standard. The damage that may be apportioned must be the foreseeable consequence of a lack of care on the part of the plaintiff and caused by such lack of care. In determining the appropriate apportionment, the Court will take into account comparative culpability or blameworthiness and the extent to which the respective failings contributed to or caused the loss. Ultimately, the question is what apportionment would be just and equitable in all of the circumstances.

[295] The defence operates to reduce the damages recoverable by a plaintiff. This must therefore be determined before any consideration of contribution between joint or concurrent tortfeasors in terms of s 17 of the Law Reform Act.²¹

[296] Council argues that before entering into purchase agreements, the plaintiffs should have sought a building report, information from the body corporate including minutes of meetings, and made enquiries of people living in the development. Alternatively, they should have made their purchase agreement subject to the satisfactory completion of such due diligence enquiries.

[297] Since 1999, the standard form agreement for sale and purchase prepared by the Auckland District Law Society in conjunction with the Real Estate Institute of New Zealand contains a warning that a purchaser should seek legal advice before signing the agreement. In this case, of the 17 unit purchasers in respect of which contributory negligence was pleaded, eight took legal advice before signing the agreement.

[298] I had the benefit of expert evidence from two leading conveyancing practitioners, Timothy Jones and Robert Eades. Both have considerable experience in this area and frequently assist the Court with expert evidence on matters relating to conveyancing practice. They agree that a reasonably competent conveyancing solicitor, at the time the relevant agreements were entered into between June 2007 and May 2009, would have recommended that a land information memorandum

²¹ *Fitzgerald v Lane* [1989] AC 328 (HL) at 339; *Dairy Containers Ltd v NZI Bank Ltd* [1995] 2 NZLR 30 (HC) at 86.

(LIM) be sought from council. I accept that evidence but it has no relevance here because a LIM would not have disclosed any information that would alert a purchaser to the prospect of the defects.

[299] Mr Jones says that a prospective purchaser ought to be advised to obtain a building report before signing the agreement or to insert a condition in the agreement making the purchase conditional on a satisfactory building report being obtained. I do not have to determine whether such advice should have been given by a reasonably competent solicitor at the relevant time or whether a purchaser would have been negligent in failing to obtain such a report before unconditionally agreeing to purchase a unit at the Nautilus. This is because many of the purchasers did obtain pre-purchase inspection reports but none of these disclosed the defects. Such inspections are necessarily limited in scope and generally confined to the interior of the units and the decks.

[300] It was not until October 2008, after extensive investigations had been carried out over a three day period by Prendos, including some destructive testing, that serious concerns were raised that the building could be suffering from "global issues". These investigations, which were commissioned by the body corporate, were well beyond the scope of what could realistically be expected from a pre-purchase inspection report commissioned by a prospective purchase of an individual unit. Prendos had to undertake considerable further investigation before it was able to report in June 2009 on the nature and scale of the defects.

[301] Mr Jones says that where the purchase involves a unit in a multi-unit development, it was common practice at the time to recommend that a purchaser obtain copies of relevant documents from the body corporate, including minutes and any other relevant documents for at least the preceding 12 months. Mr Eades agrees that this would be prudent.

[302] In respect of 11 of the units, the plaintiffs signed their agreements for sale and purchase after the minutes of the annual general meeting of the body corporate on 21 April 2008 would have been available on request by any prospective purchaser. These minutes include the following entries:

2.3 Remedials

Steve noted that in a recent letter to owners, 6 owners had written back to Centurion advising on their outstanding remedial. 4 of these were leaks. Steve noted that an owner who was affected had asked to contact other owners in similar situations but unless Centurion was given approval from owners to exchange contact details they would not supply them another owner as a matter of privacy. Steve suggested that if an owner was happy to have their details shared, that they see him after the meeting and he would take down their details. It was also noted that this matter was also listed down for discussion under general business.

7.2 Remedial issues

This matter was further discussed and it was noted that there was also a problem in the third level carpark with a leak. There was a brief discussion of the work that Multiplex had done to date and the fact that they were still attending although they did not respond to emails-letters etc ... and did not advise when they would attend, or even what they would attend for. All remedial issues had been sent to Multiplex/Cornerstone previously and it was confirmed that apart from the few left to complete they had addressed the rest.

There was a brief discussion on what could be done to progress the remedial issues. Steve noted that the body corporate/individuals had various choices including waiting for Multiplex, or employing a consultant/contractor to investigate/resolve any remedial issues, or take some form of legal action collectively or individually.

Moved B. Millar/T Tan: That the body corporate arrange an investigation of any or outstanding remedial issues in relation to water ingress and seek independent advice and provide quotes on any recommended remedial repairs.

14 for /39 against/31 abstain

Failed.

[303] I do not consider that these minutes would place a reasonable purchaser on alert that the Nautilus might be suffering from significant weathertightness defects. The minutes disclose that of the 150 residential units at the Nautilus, the owners of only six had responded to the body corporate secretary's enquiry concerning outstanding remedial items.²² Only four of these related to leaks. The minutes give no indication that these apparently isolated leaking issues were serious. The minutes record that Brookfield Multiplex is continuing to attend to remedial issues although there was dissatisfaction with the level of reporting. It also appears from the minutes that Brookfield Multiplex had addressed all but a few of the outstanding remedial

²² The plans show 153 residential units but the plaintiffs plead that there are only 150.

issues. Overall, the impression conveyed is that the outstanding remedial issues were isolated, not serious and were being addressed by Brookfield Multiplex.

[304] I am not persuaded that prospective purchasers should have knocked on doors or otherwise tried to make contact with building occupants and owners to see whether there were any problems with the building. Taking into account the number of units in the building, this suggestion is impractical. Further, given that as late as March or April 2009 only four owners reported outstanding remedial issues concerning leaks, such enquiries are unlikely to have revealed any concerns.

[305] With the exception of the owners of unit 1015, Donald and Tira Campbell, I reject the allegation that the plaintiffs were contributorily negligent.

[306] The Campbells signed their purchase agreement on 18 May 2009, after they had been given a copy of the initial Prendos report dated 9 October 2008 and with knowledge that a further report was due out shortly which would give a clearer picture of the condition of the building. The agreement for sale and purchase contained an acknowledgement that they had received a copy of this report and that they were aware that there may be ongoing issues with the building.

[307] This report summarised the defects found to exist throughout the building. These were illustrated in the attached photographs, 64 in all. The problems identified included the sealant joints on the cladding, the waterproofing of the decks and balustrades, water damage in the car parking areas and defects on the podium and roof. The summary to this report includes the following comments:

There is no doubt that the building has global issues. The variety of locations in apartments, podium and carpark that I inspected were only a sample. Nevertheless my inspection uncovered a broad spectrum of the issues that were beginning to present themselves with this building.

The areas of issue are:

1. The balustrade construction and its ability to drain water, as well as the issue of corrosion to balustrades where they are too close to tiles.
2. The corrosion that is occurring to the base of aluminium windows where they are in close contact with the tiles.
3. The corrosion occurring to the RHS columns on Level 12.

4. The corrosion occurring to the concrete floor sections of the podium and at the junctions of the deck cold joints.
5. The breakdown of sealant joint, both in material form and the bonding, splitting holes left through it.
6. The failure of the ASA Dampfix 3 membrane, particularly where it was found not to [have] coalesced let alone cured.
7. The failure of the torch-on membrane where it is breaking down in its own fabric, as well as having water behind it and swelling, creating bubbles.
8. The formation of the outlets to the decks and again to the podium levels appear to be incorrect.

The above issues are not themselves definitive but highlight that the building is exhibiting deterioration that will continue and will get worse, unless these issues are attended to.

...

The formation of the podium and its waterproofing systems need to be given close attention and the decks need to be reviewed for corrosion issues and failure of the membrane.

The most difficult issue is the failure of the sealant joint of the cladding... We are already involved with several other buildings where these joints are failing to the extent that the panel systems now need to be replaced.

[308] Although this was a preliminary report, it flagged virtually all of the issues that have since been confirmed. Numerous photos were included showing examples of such failure. I consider that a reasonable purchaser would have waited for the further Prendos' report that was known to be imminent or made the agreement conditional on that report not disclosing any serious defects in the building. Alternatively, a prudent purchaser could have sought clearance to speak to Prendos' personnel directly. The Campbells failed to take reasonable steps to safeguard their own interests and must accordingly bear a significant share of responsibility for the loss they have suffered.

[309] Mr Rainey acknowledges that a finding of contributory negligence is inevitable for the Campbells. The issue for determination is the extent of the reduction that should be ordered. Mr Rainey submits that an appropriate reduction would be in a range from 25 to 40 per cent. Mr Thodey submits that it should be 80 per cent.

[310] In determining the appropriate reduction, I take into account relative blameworthiness and the causal potency of the conduct. The Campbells had their own reasons for proceeding with the purchase of their unit without taking basic steps to protect their position. In particular, the vendor was an old family friend who they trusted. While he gave them the Prendos report, he apparently did not appreciate the significance of the issues raised in it. However, the issue of contributory negligence must be judged by the objective standard of what a reasonable purchaser would have done in the circumstances. The Campbells fell well short of that standard. They ignored the clear warnings regarding the global defects identified in the report. Their relative level of fault is high and it contributed directly to the losses they suffered by entering into the agreement in May 2009. In all of the circumstances, I consider that the appropriate reduction for their contributory negligence is 75 per cent.

What damages are the plaintiffs entitled to against each defendant?

[311] Two of the plaintiffs seek losses on sale of their units. These are the former owners of units 511 and 615. They claim losses on resale of \$110,000 and \$63,000 respectively. I understand that there is no challenge to these claims.

[312] The other plaintiffs all seek damages calculated as their proportionate share of the overall repair cost based on their respective unit entitlements. There is no dispute about the allocation of these costs to the various defects proposed by Mr Albrecht following consultation with other experts. The actual amounts shown on the relevant schedules will need to be adjusted in accordance with the minor reductions referred to in this judgment.

Council

[313] Council is liable for the remedial costs associated with the defects in the plant room on the roof but not for the skylights. Council is also responsible for all of the costs associated with the cladding defects, including at the roof edge. It is responsible for the damages claimed in relation to the podium walls, but not in relation to the incompatible membranes at the base of the stairs. Its breach of duty in relation to these building elements was a proximate cause of these losses.

[314] It is accepted that the repair costs associated with the balustrades amount to collateral damage arising out of the deck defects. Council is not liable for all of these defects so the question arises whether it is liable for all of the associated losses. I have concluded that it is because all of the remedial works will be required to address the defects for which Council is responsible. So, although Council is not liable for the failure of the membrane or for the fact that the membrane has not been dressed into the outlets correctly on some of the decks, it is liable for the discontinuous membrane and the inadequate step-down at the threshold. To remediate these defects, the balustrades, tiles, membrane and screed will have to be removed and redone.

[315] Ms Thodey submits that if Council's only breach of duty in relation to a particular defect arose out of the issue of the code compliance certificate, any owners who purchased after this date would be unable to claim. I have found that Council's liability in relation to all defects is not confined to the code compliance certificate and that it also breached its duty with reference to these elements at the consent or inspection stages, or both. Accordingly, this issue requires no further consideration.

Brookfield Multiplex

[316] Brookfield Multiplex is liable for all of the defects.

Walker Architects

[317] Walker Architects is liable for the damages associated with all of the defects other than the skylights on the roof and the absence of cap flashings on the podium walls.

Charles Norager

[318] Charles Norager is liable for the damages associated with the decks and the discontinuous membrane at the base of the podium stairs.

What contribution is each defendant entitled to from other defendants?

[319] Section 17 of the Law Reform Act relevantly provides:

17 Proceedings against, and contribution between, joint and several tortfeasors

(1) Where damage is suffered by a person as a result of a tort (whether a crime or not) –

...

(c) Any tortfeasor liable in respect of that damage may recover contribution from any other tortfeasor who is, or would if sued [in time] have been, liable in respect of the same damage, whether as a joint tortfeasor or otherwise, so, however, that no person shall be entitled to recover contribution under this section from any person entitled to be indemnified by him in respect of the liability in respect of which contribution is sought.

(2) In any proceedings for contribution under this section the amount of the contribution recoverable from any person shall be such as may be found by the Court to be just and equitable having regard to the extent of that person's responsibility for the damage; and the Court shall have power to exempt any person from liability to make contribution, or to direct that the contribution to be recovered from any person shall amount to a complete indemnity.

[320] As with contributory negligence, the Court must have regard to the comparative causative potency of the respective negligence and the comparative culpability or blameworthiness of the defendants. As noted, the amount of damages to be apportioned takes into account any reduction for contributory negligence by the plaintiff.

[321] Where one or more of the joint or concurrent tortfeasors is insolvent, the Court will take this into account when considering the appropriate apportionment. An example is the Court of Appeal's decision in *Fisher v C.H.T. Ltd.*²³ In that case, the trial judge found the defendants liable for the plaintiff's losses in proportions of 60, 20 and 20 per cent. Lord Denning said:²⁴

No one has any doubt about the responsibility of Tolainis by their electrician Boothroyd. He was guilty of a gross piece of negligence in switching on all these switches, when there were obviously wires exposed in the ceiling,

²³ *Fisher v C.H.T. Ltd (No 2)* [1966] 2 Q.B. 475 (CA).

²⁴ At 480 and 483.

without warning anybody. Tolainis were rightly held 60 per cent liable. But they have got no money. So they pass out of the picture. The other two, Crockfords and the plasterers, have got to bear the whole damages between them. The question is how they should bear them as between themselves ...

...

I think that as between Crockfords and the plasterers, Crockfords' responsibility should only be reckoned as one-quarter and the plasterers three-quarters. So, instead of 20 per cent and 20 per cent, I would put 10 per cent to Crockfords and 30 per cent to the plasterers; and they should bear the whole of the damages which they have to pay in those proportions. So in respect of the whole damages of £4,000, one-quarter should be paid by Crockfords and three-quarters by the plasterers.

[322] This decision was followed by the House of Lords' decision in *Dubai Aluminium Co Ltd v Salaam*.²⁵ Lord Nicholls explained the position in this way:²⁶

The object of contribution proceedings under the Contribution Act is to ensure that each party responsible for the damage makes an appropriate contribution to the cost of compensating the plaintiff, regardless of where that cost has fallen in the first instance. The burden of liability is being redistributed. But, of necessity, the extent to which it is just and equitable to redistribute this financial burden cannot be decided without seeing where the burden already lies. The court needs to have regard to the known or likely financial consequences of orders already made and to the likely financial consequences of any contribution order the court may make. For example, if one of three defendants equally responsible is insolvent, the court will have regard to this fact when directing contribution between the two solvent defendants. The court will do so, even though insolvency has nothing to do with responsibility.

[323] Council and Charles Norager are the only solvent defendants. However, if Brookfield Multiplex is entitled to indemnity for its liability under its professional indemnity policy and if the insurance proceeds in the hands of the liquidators are fixed with a charge under s 9 of the Law Reform Act, it should also be treated as a solvent defendant for the purposes of assessing the respective contributions as between it and Council.

[324] For the reasons given in the next section of this judgment, I have concluded that Brookfield Multiplex is not entitled to indemnity for any part of its liability under its professional indemnity policy. This means that the only solvent defendants to be considered are Council and Charles Norager. They are both liable in respect of

²⁵ *Dubai Aluminium Co Ltd v Salaam* [2002] UKHL 48; [2003] 2 AC 366. See also *Body Corporate 160361 (Fleetwood Apartments) v BC 2004 Ltd & Anor* [2014] NZHC 1514.

²⁶ At [52].

the damage arising out of the decks and for the junction between the incompatible membranes at the base of the podium stairs. I consider that this damage should be apportioned 80 per cent to Charles Norager and 20 per cent to Council. This is consistent with the apportionments directed in a number of comparable cases.²⁷

Is Brookfield Multiplex entitled to indemnity for part or all of its liability under the professional indemnity insurance policy?

[325] Brookfield Multiplex, as a subsidiary of Brookfield Australia Investments Ltd, is an insured under a professional indemnity insurance policy which provides cover for claims made against it and notified to Underwriters during the period from 31 March 2008 to 31 March 2009. The plaintiffs' claim against Brookfield Multiplex was made and notified to the Underwriters during this period.

[326] The insuring clause relevantly provides:

We the Insurers hereby agree to indemnify the Insured up to but not exceeding the amount stated in the Schedule as the Limit of Indemnity

- (a) For any sum which the Insured is or may become legally liable to pay in respect of any Claim or Claims first made against the Insured and notified to Insurers during the Period of Insurance and

where such liability arises out of:

- (1) Any breach or alleged breach of contract or agreement or guarantee or warranty:
- i entered into by the Insured;
 - ii for the provision of or carrying out of Professional Activities and Duties defined herein anywhere within the Territorial Limits stated in the Schedule,
- where such breach results from an act of neglect or error or omission or negligence; and/or
- (b) Any other act of neglect or error or omission or negligence or breach of warranty of authority by:
- i the Insured or of any party presently or previously employed or engaged by the Insured
 - ii any sub-contractors or sub-suppliers or sub-consultant in any tier not directly engaged or employed by the Insured

²⁷ *Body Corporate 160361 & Ors v Auckland City Council & Ors* HC Auckland CIV-2003-404-6306, 25 June 2007; *Body Corporate 189855 & Ors v North Shore City Council & Ors* [2008] BCL 800 (HC); *Body Corporate 185960 & Ors v North Shore City Council & Ors* HC Auckland CIV-2006-404-3535, 22 December 2008.

iii any specialists, consultants or subcontractors of the Insured prior to the novation to the Insured of the agreements under which such work was undertaken, arising from the carrying out of Professional Activities and Duties defined herein anywhere within the Territorial Limits stated in the Schedule.

[327] "Claim" is defined in the policy to include any form of legal process served on the insured. "Claim" therefore includes the plaintiffs' statement of claim against Brookfield Multiplex and the cross claims against Brookfield Multiplex by Council and Walker Architects.

[328] "Professional Activities and Duties" are relevantly defined as follows:

... those activities and duties undertaken by or under the supervision of:-

- (a) persons or personnel who are professionally qualified or
- (b) persons or personnel having not less than 5 years relevant experience in carrying out professional activities that would normally be undertaken by a professionally qualified person.

For the avoidance of doubt Professional Activities and Duties includes the duty to warn of defects in the professional activities and duties of others, but does not include

- (i) the day to day supervision of manual operatives, labour and construction work usually undertaken by building, engineering or business support service providers ...

[329] The statement of claim relevantly asserts deficiencies in design work. To bring the claim within the insuring clause, Brookfield Multiplex must establish that the allegedly defective design work was undertaken by or under the supervision of someone who was professionally qualified or someone who had at least five years' relevant experience in carrying out professional activities that would normally be undertaken by a professionally qualified person.

[330] Memorandum 5 provides:

MEMORANDUM 5 Additional Design Liability Extension

The Insurers shall indemnify the Insured in terms of this Policy, where the Insured has entered into a contract for which professional services have been provided independently of the Insured by another party or parties under a separate contract or contracts with a client/employer who by the said contract imposes liability for such professional services on the Insured.

It is further noted and agreed that notwithstanding anything contained herein to the contrary Insurers shall indemnify the Insured in the terms of this Policy for their liability for design arising out of contracts entered into by the Insured where design or design services did not form part of the original contract.

[331] This memorandum is relevant to the plaintiffs' first cause of action against Brookfield Multiplex for breach of contract relying on the assignment to the Body Corporate of Tamariki's rights against Brookfield Multiplex under the head contract. However, it is important to note the terms of the deed of novation when considering Brookfield Multiplex's liability to Tamariki and therefore the rights assigned by Tamariki to the Body Corporate. The deed relevantly provides:

2. NOVATION

2.1 Termination of the Consultant Agreement

Subject to payment in terms of clause 3 of this Deed, the Principal and the Consultant agree to release each other from all obligations and liabilities under the Consultant Agreement.

2.2 Novation

The Consultant and the Contractor agree that they enter into a new contract on the same terms and conditions as the Consultant Agreement, except that:

- (a) the Contractor shall be the Employer (or Client, as the case may be as defined and referred to in the Consultant Agreement) in the place of the Principal; and
- (b) the rights, obligations and liabilities of the contractor and the Consultant will be as if the Contractor had executed the Consultant Agreement instead of the Principal; and
- (c) provided however that the Consultant acknowledges and agrees that the Contractor has not and will not assume liability for the design of the Project, such design risk being the responsibility of the Principal in all respects. The Contractor has however assumed responsibility for (a) and (b) of this clause, for minor errors and omissions in the design development which an experienced contractor would be reasonably expected to foresee and for the design changes introduced for the benefit of the Contractor.

[332] Brookfield Multiplex therefore did not assume liability under this deed for the design of the Nautilus. That risk remained with Tamariki. Brookfield Multiplex assumed responsibility only for minor errors and omissions in the design development which an experienced contractor would be reasonably expected to foresee and any design changes introduced for its benefit. The insurance available as

a result of the extension in memorandum 5 is subject to the other terms and conditions of the policy including the "Professional Activities and Duties" definition and any relevant exclusions.

[333] Memorandum 11 is also relevant. It extends cover to include Brookfield Multiplex's liability for work undertaken by specialist designers and other professionals appointed by it or Tamariki:

MEMORANDUM 11 Principal Appointed Sub-Consultants Extension

It is understood and agreed that coverage hereunder is extended to include the Insured's liability arising out of work undertaken by specialist designers, consultants, sub-consultants or other professionals appointed by the Insured or the Principal and the Insured's liability arising out of their modifications to design work undertaken by others ...

[334] A key indemnity issue arises out of exclusion 9 which provides:

EXCLUSIONS

The Insurer shall not be liable under the Policy to indemnify the Insured in respect of any Claim

...

9. arising out of defective workmanship by or on behalf of the Insured, defective materials, manual labour operations, or any defective materials, workmanship or production techniques used in the actual manufacture of any product.

This Exclusion shall not apply where such liability is otherwise indemnifiable hereunder and arises from:

- a. an act of neglect or error or omission with respect to the design or specification of materials
- b. an act of neglect or error or omission with respect to advice given in connection with the selection of materials

undertaken by professionally qualified persons or personnel as per item a) of Definition of Professional Activities and Duties

[335] Brookfield Multiplex did not call evidence or make submissions in support of its claim for indemnity although Mr Broadmore was present at various times during the trial. The plaintiffs and Council, as potential beneficiaries under the policy, sought to advance Brookfield Multiplex's entitlement to indemnity. I note that

Ms Meechan and Ms Thodey accept that the proviso in exclusion 9 does not assist Brookfield Multiplex's claim for indemnity. I agree.

[336] The policy is governed by, and is to be construed in accordance with, the law of Australia. The Underwriters have pleaded the relevant law. The parties agree that there is no material difference between New Zealand and Australian law for the purposes of the present dispute.

[337] Brookfield Multiplex has the onus of proving that the claim in respect of each defect for which indemnity is sought comes within the insuring clause, including the "Professional Activities and Duties" definition and the amount for which indemnity is available under the policy. The Underwriters rely on exclusion 9 as excluding cover for each of the defects. They bear the onus of proving that the exclusion applies.

[338] No difficulty arises where a claim has only one cause. If the cause is within the insuring clause and not excluded by an exclusion clause, the claim is covered.

[339] However, where the claim has two or more causes, the claim will be covered only if at least one of these causes is within the insuring clause and none of the causes is excluded by an exclusion clause.²⁸

[340] For the purposes of both the insuring clause and the exclusion clause in this policy, cause includes any indirect cause as is clear from the use of the words "arising out of".²⁹ The relevant cause does not need to be the proximate cause, merely a material contributing factor.

[341] It follows that if the plaintiffs' claim against Brookfield Multiplex in relation to the cladding, for example, has two material contributing causes, defective design coming within the "Professional Activities and Duties" definition of the insuring

²⁸ *Wayne Tank and Pump Co Ltd v The Employers' Liability Assurance Corporation Ltd* [1973] 3 All ER 825 (CA) at 830, 831, and 837; *Lake v Commercial Union Assurance Co. of Canada* (1990) 73 O.R. (2d) 580 (H.C.J.) at 586; *McCarthy v St Paul International Insurance Co Ltd* (2007) 14 ANZ Insurance Cases 61-725 at 75,929.

²⁹ The insuring clause also uses the words "arising from" but this is synonymous with "arising out of".

clause and defective workmanship excluded by exclusion 9, the claim is not indemnified even if the defective workmanship is only an indirect cause of the claimed loss.

[342] The Underwriters contend that defective workmanship is at least a material contributing cause of the plaintiffs' claim relating to all defects and Brookfield Multiplex is therefore not entitled to be indemnified for any part of its liability to the plaintiffs.

[343] In considering whether the claim is indemnified under the policy, one must first examine the plaintiffs' statement of claim because this sets the parameters of the claim in respect of which indemnity is sought. Brookfield Multiplex's liability can only be determined in accordance with this claim. As noted, the plaintiffs plead two causes of action against Brookfield Multiplex, one for breach of its obligations to Tamariki under the head contract which have been assigned to the Body Corporate and the second in negligence.

[344] The contractual claim is that Brookfield Multiplex breached the head contract by failing, during the defects liability period provided for in the contract, to "repair all defects in the workmanship and materials used in the construction of the Nautilus" in a proper and workmanlike manner, being all of the defects discussed in this judgment. This cause of action is solely directed at the failure to repair defective workmanship and materials. This is excluded from cover by exclusion 9. In any event, there is no allegation that Brookfield Multiplex breached the contract through defective design. The insuring clause is not even engaged.

[345] The second cause of action in negligence alleges that Brookfield Multiplex breached its duty of care "in relation to the design and construction of the Nautilus". These breaches of duty, relating to both design and construction issues, are particularised as follows:

- a) Modifying the design of the cladding system "when it ought to have known that the Amended Design would not achieve compliance with the performance requirements of the Building Code in that there was no basis

for it to be satisfied that the Wes-Tec cladding system as detailed in the Amended Design would comply with the performance requirements of clauses B1, B2 and/or E2 of the Building Code”,³⁰

- b) Constructing the Nautilus with the defects; and
- c) Failing to rectify the defects during the defect liability period.

[346] These breaches of duty are all said to have caused all of the plaintiffs’ losses. Defective workmanship is therefore alleged to be a material contributing cause of all such losses. Indeed, this follows logically. If, notwithstanding any deficiency in the design, the Nautilus had been constructed without defects or any defects had been rectified during the defects liability period, the plaintiffs would not have suffered any loss and there would be no claim.

[347] This conclusion is further reinforced by the schedules to the claim which provide further particulars of the defects giving rise to the claimed losses. This schedule specifies, for each defect, the nature of the defect, the cause of the defect, the resulting damage, the provisions of the building code that were breached, the location of the defect, the expected repair cost and the costs of interim repairs. Significantly, for present purposes, there is also a column headed “Workmanship” in which further particulars are provided of Brookfield Multiplex’s alleged failures. I now examine the particulars of defective workmanship detailed in this schedule for each of the defects.

Decks

[348] Poor workmanship is pleaded as a material contributing factor in the case of each of the three pleaded deck defects: “poorly installed membrane without adequate

³⁰ This modification relates to the design changes to the cladding system that formed part of the amended application for building consent.

curing times”;³¹ “poor workmanship by cladding installer and tiler”;³² and “poor installation of membrane”.³³ These pleaded allegations have been proved.

[349] Each of these defects contributed to the losses claimed by the plaintiffs in relation to the decks. The defective workmanship is a material factor contributing to the loss resulting from the need to remove the balustrades, lift the tiles, membrane and screed, and then reinstate after all associated damage has been repaired.

[350] The plaintiffs’ claim against Charles Norager seeks the same losses in relation to the decks as are claimed against Brookfield Multiplex. The claim against Charles Norager is that it “failed to exercise reasonable skill and care in respect of the supply and installation of floor tiles, waterproofing and acoustic underlay to the deck” areas. In particular, it is alleged that the decks were built with the “Tiling Defects” which are the same defects that feature in the claim against Brookfield Multiplex. The plaintiffs plead that the “Tiling Defects are all defects which ought to have been apparent to a reasonably skilled tiler and waterproofer contracted to carry out the works that Charles Norager was contracted to perform in relation to the Nautilus”. The plaintiffs’ claim is therefore that all losses relating to the decks were caused by poor workmanship. In this context, “caused” means proximate cause, not merely an indirect cause. I have already found this claim proved.

[351] It follows that the plaintiffs’ claim against Brookfield Multiplex in relation to the decks is excluded from cover under the policy. Poor workmanship was at least a material cause of the loss claimed.

Cladding

[352] The next most significant defect in terms of repair cost is the cladding. It is indisputable that poor workmanship is a material contributing factor.

³¹ This relates to defect (d) in the statement of claim. There were four separate aspects to this defect as noted in [139].

³² Defect (e).

³³ Defect (f).

[353] The schedule of defects attributable to Brookfield Multiplex in the statement of claim pleads, among other causes, that this defect was caused by “poor sealant practice including excessively wide joints, lack of adequate backing to joints and reliance upon adherence to insufficient surfaces”. These all relate to poor workmanship, an allegation I have found proved.

[354] In the “Workmanship” column, the plaintiffs’ pleading includes an allegation of “poor application of cladding and sealant”. The evidence left me in no doubt that this was the case. Mr Woolgar described the poor workmanship in relation to the cladding as “endemic and widespread around the building”. He said that in terms of a face-sealed system, it was “the worst” he had ever seen in his career. The other experts were similarly critical of the standard of workmanship in installing the cladding.

[355] This claim is quite clearly excluded from cover.

Roof

[356] The “Workmanship” column in the schedule of defects attached to the claim includes the allegation that “construction sequencing meant that penetrations were formed late and not controlled by membrane applicator”. These are construction defects, not design defects, and are excluded from cover.

[357] While the plaintiffs criticised the plant room design as an open air structure, this allegation was not established. The design lacked detail but was not followed in any event. There is no evidence as to who made the decision to install the plant in the way it has been. Brookfield Multiplex has therefore not discharged the onus on it of proving that the design of the plant room was undertaken by, or under the supervision of, a person falling within the definition of Professional Activities and Duties in the policy. In any event, the claim is excluded from cover because defective workmanship was clearly a material contributing factor.

[358] The defects in the skylights were caused by poor installation. It was not contended that cover is available for this defect.

Roof edge

[359] This falls into the same category as the cladding. There is no doubt that the defects in the cladding at the roof edge are at least partly caused by defective workmanship. The claim in relation to this defect is excluded for the same reasons as for the cladding.

Balustrades

[360] The schedule in the statement of claim alleges inadequate design and installation giving rise to the risk to safety from falling. However, as noted, this allegation was not pursued. In any event, the claim was that defective installation, being defective workmanship, materially contributed to the loss claimed. This claim is therefore excluded.

[361] The second claim in relation to the balustrades concerns the manner in which they have been fixed to the timber packer over the concrete nib on the full height balustrades or to the timber framing in relation to the half height balustrades. In the schedule, the plaintiffs attribute this defect to poor design. However, there is no evidence as to who was responsible for the design. It was clear from the evidence that Walker Architects was not responsible. In the absence of such evidence, Brookfield Multiplex has not proved that the "Professional Activities and Duties" requirement in the insuring clause is met. In any event, the losses relating to the balustrades were accepted to be collateral damage in the sense that they were caused by the deck defects. For that reason as well, the claim in relation to this defect is not covered because defective workmanship was a material contributing factor to the loss claimed.

Podium

[362] The plaintiffs' schedule attached to the statement of claim contains the allegation that the water entry at the junction of dissimilar membranes at the bottom of the steps linking the upper and lower podiums was the result of "inadequately designed and constructed junction with poor application of membranes".

[363] The most recent design for this junction was prepared by Walker Architects on 6 March 2004. This showed the *Neuchatel* membrane being laid underneath and on top of the steps. There would have been no problem had the works been carried out in accordance with this design.

[364] There is no evidence as to who made the decision to depart from this design and form the waterproofing junction as it is. There is therefore no evidence to satisfy the Professional Activities and Duties requirement of the insuring clause.

[365] The change was made partly as a result of a construction sequencing decision to install the precast stairs before the waterproof membrane was laid on the lower podium. This is a construction issue, not a design issue. Poor workmanship was a material contributing factor in relation to this defect.

[366] It follows that Brookfield Multiplex's liability for this defect is not covered by its professional indemnity policy.

[367] The second defect relating to the podiums relates to the departure from the original design of the perimeter block walls by removing the capping that was designed to shed water. Walker Architects opposed the removal of the capping and warned Brookfield Multiplex that this would be likely to cause "serious waterproofing problems." There is no evidence that anyone coming within the requirements of the Professional Activities and Duties definition was responsible for this design change. Brookfield Multiplex has not proved that the claim comes within the insuring clause.

[368] The schedule of Brookfield Multiplex defects in the statement of claim refers to poor membrane installation on adjacent services as contributing to the damage arising out of this defect. This allegation was supported by Mr Cavan's evidence. Exclusion 9 would have excluded the claim relating to this defect from cover even if it had come within the insuring clause, which it does not.

Result

[369] The plaintiffs are entitled to judgment against each of the defendants for the amounts calculated in accordance with the judgment. I reserve leave to apply should any issue arise as to the calculation of the judgment sums required to give effect to the judgment.

[370] Council and Charles Norager are liable for the same damage in relation to the decks. Liability for this damage is apportioned 80 per cent to Charles Norager and 20 per cent to Council.

[371] Brookfield Multiplex's claim for a declaration that it is entitled to be indemnified in respect of the judgment entered against it in this proceeding in terms of (a) of the prayer for relief in its statement of claim dated 19 June 2013 is dismissed. I make no determination in respect of the relief sought at (b) of the statement of claim in accordance with the joint memorandum of counsel dated 10 September 2014.

[372] Memoranda should be filed if costs cannot be agreed.

M A Gilbert J