VICTORIAN CIVIL AND ADMINISTRATIVE TRIBUNAL

CIVIL DIVISION

DOMESTIC BUILDING LIST VCAT REFERENCE NO D73/2010.

CATCHWORDS

Poor building technique, result not necessarily defective, measure of damages, *Bellgrove v Eldridge*, *Willshee v Westcourt*, contumelious disregard, onus of proof, builder's margin or cumulative factor, expert reports, concrete defects – cracks, steel placement, vibration of beams, edge beam foundations, honeycombing, installation of vapour proof barrier, moisture in slab, relative humidity, strength testing. Other defects – drainage, site cut, bracing, brickwork, damp proof course, rustic bricks, brick ties, articulation joints, opportunities for experts to inspect, flatness of plaster walls, termite protection, roof defects, painting a roof voiding warranties, preliminaries, repudiation, contract termination, delay, agreed damages, general damages.

APPLICANT	Old Fairhaven Homes
RESPONDENTS	Robert Fidone, Faye Fidone
WHERE HELD	Melbourne
BEFORE	Senior Member M. Lothian
HEARING TYPE	Hearing
DATES OF HEARING	23-31 May, 1, 3, 6, 8, 15 and 20 June 2011
DATE OF ORDER	15 September 2011
CITATION	Old Fairhaven Homes v Fidone (Domestic Building) [2011] VCAT 1774

ORDERS

1 The Applicant must pay the Respondents $13,839 forthwith.

2 Costs and interest are reserved with liberty to apply until 31 October 2011. Any application is to be heard by Senior Member Lothian with an estimated hearing time of half a day.

SENIOR MEMBER M. LOTHIAN

APPEARANCES:

For Applicant	Mr K. Oliver of Counsel
For Respondents	Mr A. Beck-Godoy of Counsel

REASONS

1 A single instance of poor judgement, or bad luck, can be enough to lead to a building dispute that that has the capacity to overwhelm the parties to it. In this dispute the poor judgement or bad luck was that the concrete slab was poured on a very hot day when, as everyone agrees, no particular steps were taken to protect it.

2 The Respondent-Owners are Mr Robert and Mrs Fay Fidone. Before his retirement, Mr Fidone was an electrician. Their son, Mr David Fidone, is a roof plumber. It is therefore not surprising that they were alarmed by such apparently poor building technique so early in the construction of the house. Their concern can only have been exacerbated by the Applicant-Builder's delay in providing core sample results, which is discussed further under "Slab history" below.

3 However, my task is not to determine whether there has been poor building technique – there clearly has been – but whether the result is defective. Having said that, evidence of the building technique is relevant to help determine whether elements of the house that have not yet failed are likely to fail within the expected life of the house.

4 The slab started cracking almost as soon as it was laid. There are now numerous cracks, particularly at the north end of the house. The Owners say that the slab, and therefore the house, must be demolished. The Builder says that regardless of the technique adopted the slab is not defective and nothing needs to be done to it. The Owners also say that irrespective of the state of the slab, the brickwork is so poor that it must be demolished and rebuilt and the Colorbond roofing sheets must also be replaced. They also complain of a number of other alleged defects that are relevant if the house does not need to be demolished.

5 The Owners' concern about the state of their new house seems to have contributed to disputes between the parties about whether the Builder was entitled to the fix stage and final payments when claimed. These payments have not been made.

6 The Builder's claim is $87,990.10. The Owners' counterclaim is $365,341.50 if it is found that the house must be demolished, or $185,003.79 if it is found that the slab and other elements of the house can be repaired. Both parties also claim interest and costs.

HISTORY

7 The parties signed a contract dated 25 November 2008 for the Builder to construct the Owners' house in Pakenham. I accept the evidence of Mr Robert Fidone that the Builder supplied the design of the house. It is one of the Builder's standard designs, called Arlington 244, amended to provide a larger garage to accommodate two cars and a caravan. The parties agree that the contract price, as adjusted, was $254,666 on the basis that Mr

Robert Fidone would undertake the electrical work. The parties also agree that if there was no dispute about the quality of the work and it was finished on time[1], $87,990.10 would have been payable by the Owners to the Builder.

8 The Builder's claim for $87,990.10 is calculated as follows:

Contract price	$254,666.00
Plus variations	$531.00
Less agreed damages	$1,143.00
Adjusted contract price	$254,054.00
Less payments made by the Owners	$166,063.90
Balance outstanding	$87,990.10

9 Mr Oliver of Counsel for the Builder said at paragraph 5 of the Builder's written submissions that the Builder conceded a further reduction of $20,315.87, being $3,357 agreed damages, $9,600 incomplete work (whitegoods and carpet) and defects of $7,358.87.

10 The Builder claimed $63,666.50 for fixing stage on 5 August 2009. On 3 and 18 August, 22 September and 13 and 14 December 2009, David Fidone sent e-mails to the Builder on behalf of his parents about alleged defects in the slab and frame. On 7 December 2009, the Owners sent the Builder a notice to rectify under clause 43 of the contract. The Builder pleads that Mr Robert Fidone arranged a final inspection with Mr Duncan Brand of the Builder for 14 December 2009, but that no-one attended for the Owners. The Owners sent the Builder a notice of termination on 21 December 2009 and took possession of the house shortly after that. Both parties claim that the other has repudiated the contract. The Builder also claims that the Owners have failed to mitigate their loss.

11 Because of various health problems suffered by the Owners and their need to minimise stress, they gave Mr David Fidone a power of attorney to deal with the Builder in June 2009.

DAMAGES FOR DEFECTS

Measure of damages

12 The measure of damages for breach of contract are as described by Park B in *Robinson v Harmon*[2]:

> The rule of the common law is, that where a party sustains a loss by reason of a breach of contract, he is, so far as money can do it, to be placed in the same situation, with respect to damages, as if the contract had been performed.

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1 "On time" in this context takes into account $1,143 agreed damages for delay allowed by the Builder.

2 (1848) 154 ER 363 at 365

13 On the question of appropriate compensation for the alleged breaches of contract, the Owners rely on the decision of the High Court in *Tabcorp Holdings Ltd v Bowen Investments*[3] as applied by the Court of Appeal of the Supreme Court of Western Australia (and from which the High Court declined leave to appeal) in *Willshee v Westcourt*[4].

14 In *Bellgrove v Eldridge*[5] the High Court ordered damages assessed having regard to the cost to demolish and rebuild, rather than for diminution of value - the difference between the value of the building as constructed, and the value as contracted for. The one qualification to demolition and rebuilding (where necessary) was[6]:

> not only must the work undertaken be necessary to produce conformity, but that also, it must be a reasonable course to adopt. [Emphasis added]

15 Both *Tabcorp* and *Willshee* concern breaches relating to aesthetics. In *Tabcorp* the appellant-tenant removed a high quality floor and other fittings in the foyer of the rented premises and replaced them with items which were markedly inferior. This was done, not only without permission of the respondent-landlord, but against its express instructions given a few days before the work was done. The respondent recovered the cost of removal of the inferior materials, replacement with those originally specified and rent forgone for the period of rectification work.

16 In *Willshee* a home owner contracted for high quality limestone cladding. Inferior quality limestone was supplied, and although it did not affect the structural integrity of the home, Martin CJ (with whom the other two judges concurred) said[7]:

> It was a breach of that term [for high quality limestone] which resulted in accelerated deterioration of the limestone surfaces which Mr Willshee did not regard as aesthetically pleasing. As the High Court points out in *Tabcorp*, the question of whether or not Mr Willshee's views in this respect are idiosyncratic, or would be shared by others, is not the point. Mr Willshee entered into a contact which he considered served his interests, and he is entitled to the performance of that contract quite irrespective of the views which other people might form in relation to the advancement of those interests, such as views relating to the aesthetic appearance of the house.

17 I do not accept the submission of Mr Beck-Godoy of Counsel for the Owners that the poor judgement of the Builder and/or its concreting sub-contractor amounts to "contumelious disregard" for the Owners, which was

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3 2009 CLR
4 [2009] WASCA 87
5 (1954) 90 CLR 613
6 at page 618
7 at paragraph 68

comparable to the attitude of Tabcorp for its landlord. Neither am I persuaded by his submission[8] that:

> Applying the principles in [Bellgrove] v Eldridge and as clarified in Tabcorp the Builder bears the onus of proof that it would be unreasonable to award full cost of demolition and rebuild and in my submission it has failed to discharge that onus.

18 I find that the Owners still bear the onus of proving each element of the alleged loss and of proving the appropriate measure of damages. Further, as I have concluded that it is not necessary to demolish the house, I am not satisfied that *Tabcorp* is relevant to the outcome of this proceeding except as discussed with respect to the appearance of the brickwork and the roofing iron.

19 Where sums have been allowed, they have been rounded up or down to the nearest whole dollar.

Demolition and rebuilding

20 The Owners claim compensation for defects in accordance with the report of their building expert, Mr George Cross, of 3 May 2010. Mr Cross assessed the cost of demolition and rebuilding at $326,598. The Builder did not give evidence regarding the cost of demolition and rebuilding; only of rectification. Mr Cross is qualified as a building surveyor, structural engineer and architectural draftsperson. He has also worked as a builder.

Rectification

21 Mr Stuart McLennan, one of the Builder's experts, is, among other things, a carpenter and joiner and a building surveyor. The Builder's other building expert is Mr Bruce Cossins. Mr Cossins is a registered civil engineer, building surveyor and draughtsperson.

22 Mr McLennan assessed the cost of rectification of the items he considers must be rectified at $4,776.13. Mr Cross provided a rectification alternative to demolition and rebuilding at $157,334.79. Other claims including for delay and storage costs are added to bring the total claim to $185,703.79.

23 Mr Cross also suggested a third solution, being to overlay the existing slab with a 100mm infill slab. Mr McLennan rejected this solution as not cost effective, and adversely affecting the amenity of the house by reducing the floor to ceiling height.

24 Mr McLennan costed Mr Cross's "repair slab" solution at $83,330.99 but not all items in Mr Cross's solution were costed and some of the methods adopted by Mr McLennan were different to those adopted by Mr Cross.

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[8] Paragraph 115 of the Owners' closing submissions

Margin on rectification costs

25 For rectification work, Mr Cross applies a "cumulative factor" of 1.513. For example, an item with an individual cost of $1,000 would be fully costed at $1,513. Mr McLennan allows a 20% margin and GST, which in Mr Cross's parlance amounts to a cumulative factor of 1.32. Neither Mr Cross nor Mr McLennan included preliminaries in their cumulative factor or margin. Preliminaries are considered further below.

26 In accordance with Senior Member Riegler's decision in *Peterson Homes Pty Ltd v Paleep*[9] and my own decision in *Williams v Sidaoui*[10], I prefer Mr McLennan's evidence and allow a cumulative factor of 1.32.

ALLEGED DEFECTS

27 The Owners filed the Cross report of 3 May 2010 ("BBS1"), a further report dated 29 November 2010 ("BBS2") and alternative estimated cost calculations filed 21 February 2011. The Builder filed McLennan reports of 7 August 2010, 15 February 2011, 13 May 2011 and 19 May 2011. The Builder also filed the Cossins reports of 13 July 2010 and 14 and 23 February 2011.

28 I remark with concern on the length, and therefore the likely expense to the parties, of these reports and of responding to them. Mr Cross's approach to report writing is to describe alleged defects at length, and as he said during cross-examination, he does not include photographs in general, but uses them to help him recall the defects he describes. Mr McLennan's reports are similar in length to Mr Cross's, although they do include some photographs and they lacked the lengthy annexures Mr Cross exhibited to his reports.

29 Concise reporting is to be applauded, although it is not easy. As Pascal[11] said:

> I would have written a shorter letter, but I did not have the time.

Sometimes a photograph or two per item is useful to avoid prolixity. The discipline adopted by the Building Commission in its standard reports is commendable.

30 On the second day of the hearing, 24 May 2011, I conducted a site inspection in the presence of the parties, their lawyers and their experts. On the third day expert evidence commenced with the experts giving evidence concurrently. The process was not as successful as has been the experience in some other hearings, in part because of the apparent reluctance of the experts to agree with each other about most items. After concurrent evidence, the parties were permitted to adduce further evidence from their own expert(s) and cross examine the opposing expert(s).

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9 [2010] VCAT 1599

10 Delivered at VCAT 15 April 2011

11 Blaise Pascal, Provincial letters: Letter XVI of 4 December 1656

31 The defects alleged in the Owners' Amended Points of Counterclaim of 9 March 2011 ("APCC") are as follows:

Slab

32 The slab as designed[12] is 100mm deep, with internal beams 400mm deep and edge beams in accordance with the soil report. The recommended founding depth in the soil report[13] is 100mm into the natural grey sandy silt. The slab design shows reinforcement close to the top of the slab and includes the notation "SL82 SLAB FABRIC (25mm COVER)".

Slab history

33 According to the Owners the slab was poured on a 40^{o} day. Mr Radings, director of the Applicant-Builder, agrees that it was 38^{o} in nearby Cranbourne. As Mr Radings said during cross-examination, it is not ideal to pour concrete when the temperature is over 32 or 33^{o} celsius, and it should not be done when the temperature exceeds 35 to 40^{o}. He said that the decision to pour was made by concreting sub-contractor. Mr Radings was unaware of it until the next day. When asked why steps were not taken to slow the curing of the concrete despite the weather, Mr Radings said: "I've had the same conversation with the concreter."

34 Mr Robert Fidone said in his witness statement that he was concerned about the quality of the slab from very soon after it was poured. I accept his evidence that he telephoned Mr Radings soon after the slab was poured and that Mr Radings said he had been shocked to hear from the concreter that the slab had been poured on such a hot day.

35 The parties agree that the Builder arranged for core samples to be taken. Mr Radings said that he inspected the slab on 22 January 2009 and observed some cracks in the slab. He said he telephoned Robert Van Huesden of VHC, the design engineers, on 23 January 2009 and asked him to inspect the slab. He stated that Dave Heath of VHC told him to get core samples to determine the slab strength before inspecting, that he received test results dated 25 February 2009 on 16 March 2009 and that he supplied them to VHC on the same day. He said he received a report from VHC dated 28 June 2009 and provided a copy to the Owners.

36 I accept Robert Fidone's evidence that he was not present when the slab was poured, but that he saw it soon after and noticed a "turtle back" pattern of cracks, which appeared to follow the location of the reinforcement mesh. I accept his evidence that the Respondents met with Mr Radings on 9 February 2009 and requested an immediate engineer's report on the slab cracks and that Robert Fidone renewed this request on 26 February, 2 March, 21 April, 2 and 15 May 2009.

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12 VHC (Aust) Pty Ltd (engineers) Proposed footing details – BTB page 76

13 GeoCore Pty Ltd of 26 September 2008, BTB page 95

37 I accept Mr Robert Fidone's evidence that Mr Radings telephoned him on 15 May 2009 to say that they were "99% sure everything was alright with the slab". I accept Mr David Fidone's evidence that he received the VHC report of 28 June 2009 in July 2009.

The VHC report of 28 June 2009

38 The report lists two attendances at site, the first on 23 April 2009 and the second on 26 April 2009. The conclusion from the second attendance at site was:

> It is recommended to obtain a series of tests directly evaluating the concrete in the slab.

The report continues:

> Concrete Testing undertaken in June 2009:
>
> A series of concrete core samples (6 no. Min) were taken by Independent Concrete Testing Pty Ltd.
>
> The samples were tested for compressive strength and were found to be (without exception) in excess of 20 MPa.
>
> The cores were also closely examined visually and considered to be normal and satisfactory in appearance.
>
> Core testing also indicated the concrete slab panel thickness exceeded the required 100mm minimum.
>
> Actual slab measurements, visual observations (of the footing and the near finished building on the footing) and physical independent testing of the concrete all confirm that the concrete slab footing is serviceable and structurally sound.

39 The report is at pages 344 and 345 of the Builder's tribunal book ("BTB") and is preceded at page 343 by compressive strength results of 25 June 2009 of six samples, ranging between 20.5 and 23 MPa. It is also followed at pages 347 and 348 by a copy of the Independent Concrete Testing report dated 25 February 2009. This report concerned five samples. The fifth sample has an average compressive strength of only15.5 MPa. Nevertheless, the average compressive strength of the five samples is 20.9 MPa.

Engagement of Mr Cross

40 Mr David Fidone said Mr Cross's firm was engaged to report in July 2009. The Owners received Mr Cross's first report on 4 August 2009 and sent a copy to the Builder on 5 August 2009. I accept David Fidone's evidence that Mr Radings e-mailed him on 10 August, saying that he had received the report and asking for further time to consider it.

41 Mr Cross said at page 10 of his July 2009 report that he had been told that the concrete slab was poured on a day when the ambient temperature reached 40^{o}C, and that the slab had not been protected from the harsh environmental conditions. Mr Cross reported that full depth cracks exist in

all the core samples taken on 12 March 2010. The core samples are exhibit R4 and are consistent with Mr Cross's report.

42 Mr Cross, at least in part from the history of the slab, opines that it is defective. He said that the three possible means of rectification are to remove and reconstruct the slab, to remove everything above the slab and pour an overlaid slab or to retain the slab and repair all defects, including the cracked slab panels. He said that because of the uncertainty of performance of the existing slab, even if repaired or overlaid, his preference is removal and reconstruction.

43 In his report of 5 August 2010 Mr Cossins agrees that there are cracks through the depth of the slab but states that:

> Cracks extending through the slab depth indicate they are shrinkage cracks and not due to structural action.

44 Obviously, if I preferred Mr Cross's evidence concerning removal and reconstruction of the slab, and hence the house, it would not be necessary to consider the cost of rectification of the individual defects he also reported. I therefore considered the alleged slab defects first and as described below, concluded that it was not necessary to demolish the slab.

Alleged slab defects

45 Mr Cross gave evidence that there are a number of ways in which the slab fails:

Extensive longitudinal cracks

46 The Owners plead at paragraph 6(a)(A)(i) of the APCC that:

> The slab was constructed with poor workmanship practices which have resulted in extensive longitudinal cracks parallel with the steel mesh (Paragraph 13.1 BBS1 & pages 9-12 BBS2)

47 There are, as Mr Cross observed, extensive longitudinal cracks. Some of the cracks are in the region of 2m long, and they often join other cracks at right angles. Mr Cross stated that the cracks appear to follow the pattern of some of the steel reinforcement, and this is supported by the cores he arranged to have taken, most of which are at the intersections of cracks. These cores are Exhibit R4. These cores contain cracks that are for the full depth of the slab and all pass through the location of the steel reinforcement. Although most of the cracks observed on site in the bore holes are the full depth of the slab, the parties agree that there is no vertical displacement; neither stepping nor off-set, at the cracks or elsewhere. Further, Mr Cross pointed to areas on site where he had applied plaster to a number of cracks; if they had continued to move, fresh cracks would show up in the plaster. No such fresh cracks appeared, although Mr Cross did point out a number of cracks on site that he said he had not seen before and which were not logged on exhibit 12 to BBS2.

48 To avoid confusion with tendered exhibits, I refer to exhibits to the Cross reports as "Cross exhibit …". Mr Cross continued the numbering of his exhibits in subsequent reports, rather than recommencing with each new report. BBS1 has Cross exhibits 1 to 7 annexed to it. Cross exhibits 8 to 48 are annexed to BBS2 and Cross exhibits 49 to 51 are annexed to his cost calculations filed on 21 February 2011.

49 A copy of an updated crack plan was provided to the Tribunal and parties during the hearing and is Cross exhibit 12A. Cross exhibit 12A was the third crack plan prepared by Mr Cross, and some of the cracks are consistent in all three. Of the new cracks in Cross exhibit 12A, Mr Cross said that some of the cracks are completely new but others are hairline cracks that he had logged at Cross exhibit 2 of 3 May 2010, which he believed had closed up to a point where they were no longer detectable when he prepared Cross exhibit 12.

50 I prefer Mr Cossins' evidence regarding behaviour of cracks. I am not satisfied that cracks in concrete close up to a point where they are no longer detectable, so I conclude that I cannot be satisfied that the crack plans prepared by Mr Cross before Cross Exhibit 12 A were comprehensive. I therefore cannot be satisfied that these crack plans provide compelling evidence that the slab was continuing to move, between the second crack plan (Cross exhibit 12) and the date of the hearing. Nevertheless, I do accept Mr Cross's evidence on page 11 of BBS1 as follows:

> On 23 July 2009 the cracks were primarily fine and hairline cracks. These cracks increased in both extent and width by the time of my second inspection of 2 February 2010. Many of the hairline cracks observed on 23 July 2009 had become fine and noticeable cracks.

Characterisation of cracks

51 The experts disagree about how the cracks should be characterised. They accept the uncontested evidence that some cracks were visible the day after the slab was poured. They agree that cracks at the surface of the slab range between hairline and 1.5mm and that many cracks continue for the full depth of the slab. They also agree that no cracks continue through the edge beams. At the site inspection on 24 May 2011 it was noted that some cracks cross the supposed locations of the internal beams, but that there are fewer cracks in these areas than in other areas.

52 During concurrent evidence Mr Cross said he had never seen this pattern of cracking before, whereas Mr Cossins said he had seen it in numerous slabs. I have no reason to doubt the accuracy of either. Mr Cossins' experience, among other things, was as a lecturer, senior lecturer and head of civil engineering at the University of Ballarat. In the last role he was responsible for NATA[14]-registered concrete and soil laboratories. Mr Cross agreed that in this respect, Mr Cossins' experience is more extensive than his own. I

[14] NATA is the National Association of Testing Laboratories – the testing laboratory must be NATA registered and the particular test must comply with the NATA regime.

accept Mr Cossins' evidence that cracks of this nature are not unique to this slab.

53 Mr Cossins said that the cracks at the surface could be plastic shrinkage cracks, with dry shrinkage cracks beneath them. At paragraph 8 of BBS2 Mr Cross said:

> Cracking in concrete can arise from numerous sources during or after the concrete pouring operation. ... Cracks can emanate from physical, chemical, thermal or structural sources after hardening of the concrete has occurred. Alternatively, cracks can occur before hardening, when the concrete is still in a plastic state.

54 The experts agree that the cracks are not due to movement. In his report of 5 August 2010 Mr Cossins concluded, regarding the cracked slab:

- Concrete slabs have shrinkage cracks as a result of the material properties. The degree of cracking is controlled by the Australian Standard AS2870-1996. The shrinkage cracks in the slab are generally damage category 1 with occasional crack damage category 2 in width but in all cases less than damage category 0 for offset.
- The cracks extending through the slab depth indicates they are shrinkage cracks and are not due to structural action.

55 As Mr Gibcus said at item 1(6) of the report he prepared for the Building Commission dated 5 November 2009:

> The Guide [to Standards and Tolerances] states that category 1 and 2 cracks (between 1 and 2 mm) are to be monitored for a period of 12 months. At the end of the monitoring period, cracks rated at greater than category 2 are defects.

56 Mr Cross said at paragraph 5 of his report of 5 August 2010:

> Shrinkage cracks form typical short and random patterns, or alternatively, a series of parallel lines at approximately 45^{o} angle to the edge of the slab. ... The crack patterns [in the slab] do not conform with either of the expected shrinkage crack patterns. This is because the cracks are not typical shrinkage cracks but rather cracks formed by poor workmanship and ineffective supervision of the builder ...

57 I remark that no-one drew my attention to the table at page 19 of Cross exhibit 8[15] which describe three types of plastic shrinkage cracks, the third of which is "over reinforcement" which appears to me to be consistent with the type of cracking reported by Mr Cross. Further, I note that the "Primary cause" is given in Cross exhibit 8 as "Rapid early drying, steel near surface". The steel was not near the surface, but it is reasonable to assume that the early drying was rapid, because of the weather conditions when the concrete was poured.

58 Page 19 of Cross exhibit 8 includes the seemingly contradictory comments:

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[15] HB84, Chapter 3, Formation and types of cracks

> Plastic shrinkage cracks are typically shallow and do not extend to the edge of the slab.

and

> Typical plastic shrinkage cracks are of the order of 1-2mm wide at the surface. The cracks normally pass through the full depth of the slab, tapering sharply with depth. [Emphasis added]

59 Further, a passage on page 2 of Cross exhibit 9A[16] is:

> **IMPACT OF PLASTIC SHRINKAGE CRACKING**
>
> Plastic shrinkage cracking rarely impairs the strength of a concrete element. However, it will have a dramatic impact on the appearance of the concrete: where it penetrates full depth it may lead to water penetration problems.

60 At paragraph 15 of BBS2, Mr Cross concluded that the cracks were "plastic settlement cracks" and referred to Cross exhibit 9B. Section AA on page 2 of Cross exhibit 9B shows cracks of significant width above every bar of the reinforcement, which appears inconsistent with this slab, and gives the possible means of avoiding such cracking as:

- Use mixes with lower [water] bleeding characteristics eg lower slump and more cohesive mixes
- Increase the ratio of cover to reinforcing bar diameter ie by increasing the cover or decreasing the size of the bars.

61 The second point was not a relevant factor, as Mr Cross has indicated that the reinforcement was too low. Further, they do not match the description:

> They can be quite wide at the surface, tend to extend only to the reinforcement or other restraining element and taper in width to that location.

62 I am not satisfied that the only possible characterisation of the cracks in the slab was plastic settlement cracks. Regardless of the characterisation of the cracks, repair techniques are provided in Cross exhibit 9B for both plastic and hardened concrete and there is nothing in the exhibit to suggest that these cracks are symptomatic of a slab that must be demolished.

63 I conclude from these passages that the existence of fine, full-depth cracking is insufficient, without other symptoms of distress or damage, to justify a diagnosis of slab failure.

64 Mr Cross reported that the cracks are consistently 1 mm wide for their full depth but this is not consistent with what I observed in the core holes at the site inspection or with what can be observed in the concrete cores which are exhibit R 4. Despite the somewhat rough treatment of being subject to transportation to and from hearing rooms in the Tribunal's trolley, only one of the five cores provided by Mr Cross shows cracks at the bottom of the core of greater than hairline.

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16 *Plastic shrinkage cracking* June 2005, Cement, Concrete & Aggregates Australia

65 During concurrent evidence Mr Cossins said that if the cracks were at points where the slab was vertically off-set (if there were steps from one side of the cracks to the other) it would be symptomatic of weakening of the slab structure. As mentioned above, all experts agree that there was no off-setting.

AS2870

66 Mr Cross disagrees with Mr Cossins about whether Appendix C to AS2870 *Residential Slabs and Footings Construction,* is relevant to the cracks in this slab. If it does apply, the cracks in the slab are, as Mr Cossins observes, category 2 cracks at most.

67 Mr Cross pointed out that Appendix C is headed "Classification of damage due to foundation movements" and as stated above, he and Mr Cossins agree that these cracks have not occurred due to foundation movement. However, under cross-examination Mr McLennan referred to clause B4 of AS2870 which commences:

> Shrinkage cracking can be expected in concrete floors. Concrete floors can also be damaged by swelling of reactive clays or settlement of fill. The categories of damage are given in Table C 2, Appendix C.

68 The paragraph on which Mr McLennan relied is equivocal. It is only the first sentence that refers to shrinkage cracking, and a reference to the table C2 categories could relate to the second sentence alone. I am not satisfied that table C2 necessarily relates to the shrinkage cracking, but find that regard can be had to it to determine the seriousness of the observed cracks. For example, if there were a crack caused by shrinkage that would otherwise be a category 4 crack, I would regard it as evidence of a seriously defective concrete slab. Further, there is no evidence before me that a crack caused by shrinkage as distinct from a crack caused by movement differs physically or chemically from its equivalent.

69 I note the evidence of Mr Cossins in his report of 14 February 2011 where he said at page 5:

> Irrespective of the type of cracks the slab has cracked as most slabs do with no detrimental effect on the structural adequacy of the slab. Between inspections on 30 July 2010 and 31 January 2011 the crack pattern and crack widths are basically unchanged.

Possible vulnerability of reinforcement

70 In the course of the hearing Mr Cross said that cracks at the same point as the reinforcement could make it vulnerable to rusting, and could cause the slab to fail after, say, 25 years, rather than allowing it to maintain its strength for its life expectancy of at least 50 years[17]. This is inconsistent

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[17] I accept Mr Cross's evidence that 50 years is a reasonable life expectancy for a house slab, based on clause 1.4.2 of AS2870-1996: "Foundation movement shall be assessed as the level which has less than 5% chance of being exceeded in the life of the structure, which may be taken as 50 years" [Emphasis added]

with Mr Cross's statement at page 11 of BBS1 "it is not possible to quantify the future performance of the slab with any certainty." I am therefore not satisfied that Mr Cross can reliably predict the life of this slab, but I do take into account his concern about long cracks parallel with and extending to the steel reinforcement.

71 Although the possible vulnerability of reinforcement was not specifically addressed in the APCC nor the Cross reports, Mr Cross said at page 2 of BBS2:

> The excessive amount, width and depth of the cracks in the concrete slab will allow moisture to adversely affect the slab's durability, reducing its longevity to perform for the life of the building.

72 At page 18 of Cross exhibit 8 is:

> **IMPACT OF CRACKS ON STEEL REINFORCEMENT CORROSION**
>
> Cracks allow the ingress of deleterious substances such as chlorides and moisture into concrete which enhance steel corrosion, and can therefore significantly reduce the life of structures. Corrosion is accelerated if a crack forms parallel to the reinforcement. This type of crack is often referred to as a 'longitudinal crack'.
>
> ... Minor splitting cracks, initially of no structural significance, with time may also develop to aid corrosion and further cracking.

73 I prefer Mr Cossins' evidence that the alkaline environment provided by the concrete makes it unlikely that the reinforcement will corrode to more than a minor degree unless exposed to free water or chlorine. I also prefer Mr Cossins' evidence that such exposure is unlikely. I am therefore not satisfied that the cracks, as they are currently, demonstrate that the slab has failed or doom it to failure in future.

Steel placement

74 The Owners plead at paragraph 6(a)(A)(ii) of the APCC that:

> The slab Reinforcement Steel is not located within the top 25mm of the slab (BBS1 at page 12).

75 The parties agree that the engineering design called for the steel reinforcement to be at least 25mm below the surface of the concrete. The cores taken by Mr Cross, and the core holes, show that the reinforcement is approximately in the middle of the slab, or near the middle but in the top half of the slab.

76 In concurrent evidence Mr Cross said the steel should be in the top third of the slab. Mr Cossins said that "towards the top" is sufficient. It must be at least 25mm from the top, 40mm from the bottom if there is no vapour proof barrier and 30mm from the bottom if there is a vapour proof barrier.

77 I prefer Mr Cossins' evidence concerning this aspect of the slab. I am not satisfied that the placement of the reinforcement in this slab is itself

defective, has caused another defect or is likely to contribute to a defect in future.

Unvibrated concrete beams

78 The parties agree that the contract required the Builder to vibrate the beams to compact them while they were being poured.

79 The Owners plead at paragraph 6(a)(A)(iii) of the APCC that:

> Concrete slab beams were not vibrated (BBS1 and BBS2 at page 15)

80 At paragraph13.2 of BBS1 Mr Cross said:

> The exposure of eleven (11) excavation pits in random locations around the perimeter of the building reveal that none of the concrete in the edge beams was vibrated. I conclude that it is most likely that none of the internal concrete beams were vibrated based on my findings associated with the edge beams.

81 In his report of 5 August 2010, Mr Cossins said at page 6:

> Observations:
>
> Exposed concrete slab in dwelling and garage
>
> - The exposed slab surface and exposed core holes show a uniform dense concrete.
>
> Exposed edge beam
>
> - The exposed edge beam had a smooth surface from the moisture barrier and no indications of voids associated with lack of vibration.
>
> General
>
> - The building has no discernable distress indicating satisfactory performance of the slab.
> - It is not possible to determine the degree of compaction by a visual inspection. The concrete strength is the criteria for acceptance of the concrete. The strength of the concrete has not been questioned.[18]

82 I prefer Mr Cross's evidence that not all the exposed edge beams, particularly below ground level, where they have been formed against soil rather than formwork, show a "smooth surface". This is demonstrated by the Cross exhibit 20 photographs.

83 Mr Radings said under cross-examination that the edge beams had been vibrated with a needle vibrator, and that failure to do it properly can result in honeycombing.

84 In his report of 5 August 2010, Mr Cossins said that there is no discernable distress, there is no indication of voids associated with lack of compaction and it is not otherwise possible to determine the degree of compaction

[18] At the date of this report, the concrete strength had not been questioned.

visually. I accept his evidence, given during concurrent evidence, that the cores show a uniform distribution of stones and very few voids. Those voids that do exist are about the size of a grain of rice. I also accept his evidence, given under cross-examination, that some irregularity of finish of the concrete that has bulged beyond the edge beams does not prove that the edge beams themselves have not been vibrated.

85 I am not satisfied that the Builder failed to vibrate the beams.

Footings founded in silty soil

86 The Owners plead at paragraph 6(a)(A)(iv) of the APCC that:

> Footings [were] founded in silty soil (BBS1 at paragraph 13.3 page 13)

87 Mr Cross said that the architectural plans showed a cut to the north of the site and fill to the south west corner. He said that the surface of the floor in the master bedroom in the south west corner was designed to be approximately 500mm above natural ground (BTB81) and elevation 1 (on BTB83) shows fill of approximately 300mm at the south west corner. He deduced that:

> As the slab edge beam is 400mm in depth, this places the edge beam approximately 100mm above the natural ground line and founded in fill (refer to the soil report by GeoCore Pty Ltd.).

88 Mr Cross also reported that a pit dug at this location revealed root material approximately 100mm below the bottom of the edge beam and that there is a soft layer of material below the edge beam.

89 In his report of 5 August 2010 Mr Cossins said that the edge beam is founded through the fill into brown-grey silty clay with a bearing capacity in excess of 180kpa – the requirement was for at least 80kpa. The roots are hair roots only.

90 During concurrent evidence Mr Cross said that there is spongy material along the front of the house and down the west side for 4 to 5 meters. He recommended underpinning in that area. He said that, although there is no obvious distress to the slab in this area, it could fail immediately or it could fail in ten years time. The Owners seek a sum to allow for an underpinning design, but have not yet obtained one. I note Mr Cossins' evidence that underpinning sections of the slab potentially endangers it.

91 I prefer Mr Cossins' evidence and make no allowance for this item.

Honeycombed concrete

92 The Owners plead at paragraph 6(a)(A)(v) of the APCC that:

> The slab exhibits honeycombed concrete in the alfresco and garage beams (BBS1 at paragraph 13.4 and BBS2 at page 17)

93 Mr Cross reported that there is honeycombing in two of the nine pits he inspected around the slab. Under cross-examination, Mr Radings also conceded that honeycombing was present in these locations.

94 In his report of 5 August 2010 Mr Cossins said that the rough surface below ground level is not detrimental to the building, and queried whether it was honeycombing.

95 At the site inspection the two locations of honeycombing were pointed out and I prefer Mr Cross's evidence to Mr Cossins'. Mr Cross estimated the cost of rendering the honeycombing at $1,600. Mr Cossins said this item has not been considered nor the extent identified. Accordingly Mr Cossins concluded that rectification of the honeycombing could not be accurately costed.

96 In the absence of other evidence, I accept Mr Cross's costing and allow $1,600 by the cumulative factor of 1.32; a total of $2,112.

Dry crumbly concrete

97 The Owners plead at paragraph 6(a)(A)(vi) of the APCC that:

> Slab has dry and crumbly texture (BBS1 at paragraph 13.5 page 14)

98 At the site inspection Mr Cross only pointed out one very small area of concrete which might have been crumbly, on a blown-out ledge on the south side of the house where it meets the garage. I am not satisfied that this is a defect requiring rectification.

Undermined and ledged footings

99 The Owners plead at paragraph 6(a)(A)(vii) of the APCC that:

> The concrete slab has Ledged and Undermined footings (BBS1 at paragraph 13.6 and BBS2 at pages 18 to 19)

100 Mr Cross reported that at four of the 11 pits the edge beams do not continue for a depth of 400 mm and that he also observed ledging where concrete has spilt under the formboards during the pour. Mr Cross recommended that the edge beams could be repaired with concrete splices and ledges could be removed by jack-hammering the concrete into a vertical plane along the edges of the slab.

101 In his report of 5 August 2010 Mr Cossins agreed that there is ledging but disagreed that any of the edge beams are less than 400 mm in depth. His conclusions were:

> The edge beam depth complies with the design's depth and the Standard.
>
> The bulges to the edge beam are not detrimental to the slab performance.

102 Mr Cross's reply to Mr Cossins in BBS2 commences:

> Vertical edges on footings in direct contact with the ground are required to prevent concrete bonding with the surrounding ground. This prevents footings being lifted (or dragged downwards) with seasonal soil movements.

103 At the site inspection it was obvious that some of the ledges are extensive, but it is also noted that the slab was poured in dry conditions and is now surrounded by water. There is no evidence that the slab has moved at all because of the concrete bonding with surrounding ground, or for any other reason. It was not demonstrated to me that any part of the edge beam was less than 400mm deep.

104 In the Building Commission Report at Item 2, Mr Gibcus found a number of areas where the edge-beams below the rebate protrudes beyond the face of the brick wall but concluded that there was no defect and no work was required. He said at item 2:

> 7. It is not uncommon to pour the part of the edge beam below the rebate and finished ground level against the finished excavated ground surface instead of installing formwork.
>
> 8. The extra unreinforced concrete at the part of the edge beams below the rebate and finished ground will not be detrimental to the structural integrity of the slab.
>
> 9. Because the additional unreinforced concrete is not exposed and will not be detrimental to the structural integrity of the slab, this is not a defect.

105 I prefer the evidence of Mr McLennan, supported by Mr Gibcus's report, to that of Mr Cross on this point and find that the over-pours on this slab are not defective to the point where they are likely to be detrimental to the structure of the building, although I note that paragraph 4.4 of AS3660.1-2000 (discussed further below) commences:

> Where slab edge exposure is used as part of a termite barrier system, the exposed face of the perimeter of the slab shall be off-the-form and shall not exhibit areas of rough surface, honeycombing or ripples.

106 Nevertheless, the Owners are entitled to a slab that does not protrude, in some cases substantially, into areas that will be landscaped. I accept Mr McLennan's evidence that a reasonable estimate of the concrete to be removed is 15 lineal meters and that sawing is preferable to jack-hammering. I allow the amounts Mr McLennan included in his cost estimate of 11 May 2011 of $840, by the cumulative factor of 1.32, a total of $1,109.

Edge beam repair

107 In addition to the ledged concrete, it was pointed out at the site inspection to me, and apparently for the first time to the Builder and its representatives, that there is an area outside the fourth bedroom where what appears to be reinforcement protrudes from the edge beam, parallel to the beam. Mr

Cossins suggested removing the steel, investigating to see if it is part of the reinforcement, and doweling the area to enable a concrete splint to be applied. Mr Cross had a similar solution – clean up the steel, coat it with epoxy and dowel in the concrete splint. Neither costed the solution. In the absence of evidence I allow the Owners $500 for this item, inclusive of the cumulative factor.

Vapour proof barrier

108 The Owners plead at paragraph 6(a)(A)(viii) of the APCC that:

> Vapour barrier has not been installed correctly in accordance with BCA, in that the installed vapour barrier does not finish at ground level and is not folded into the slab rebate (BBS1 at paragraph 13.7 at page 16 and BBS2 at 19).

109 Mr Radings agreed under cross-examination that the vapour proof barrier had not been folded into the slab rebate.

110 I observed at the site inspection that the black plastic vapour proof barrier, where visible in the inspection pits, was damaged in places and did not reach ground level in any of the pits. I accept Mr Cross's evidence that the design calls for a minimum of 230mm freeboard and that in some places it is much less.

111 The experts had conflicting views about how the vapour proof barrier should be placed. They agreed that to minimise the chance of water ingress through the edge-beam and into the slab, it should terminate at least at ground level, but Mr Cossins and Mr McLennan also raised the possibility that it could enable termites to avoid the reticulated termidicide, particularly if it were tucked in beneath the bottom brick on the slab rebate. I note Mr Cossins' evidence, based particularly on paragraph 4.4 *Slab Edge Exposure* of AS3660.1- 2000 *Termite Management*, that the vapour proof barrier is shown in figures 4.3(A) and (B) as terminating at the sub-soil junction of the horizontal and vertical faces of the edge beam. I do not accept that this could be a reasonable solution for a site that is, at times, so wet.

112 I am satisfied that, in accordance with diagram (a) at figure 3.2.2.3 of the 2008 BCA, the vapour proof barrier must finish at ground level, and need not be tucked into the rebate where, as designed, there is slab freeboard. I find that regardless of the ultimate responsibility for landscaping, the Builder had to ensure that the vapour proof barrier did terminate at ground level and that this necessitated grading the soil away from the house.

113 Mr Cross and Mr McLennan agree that the allowance to grade the site should be $1,260, which I allow. They also agree that the cost to rectify the vapour proof barrier is $1,980 which I also allow. Applying the cumulative factor to the sum of these items, the total for this item is $4,277.

Slab out of level

114 The Owners plead at paragraph 6(a)(A)(viii) of the APCC that:

> Slab is out of level (BBS1 at 13.9)

115 At the site inspection Mr Cross took levels with a laser level. His readings for the areas of greatest discrepancy – next to the door from the northern hallway to the kitchen/family room (highest) and the north-east corner of bedroom 3 (lowest), the difference was shown to be 16mm. This is within the tolerance allowed in *The Guide to Standards and Tolerances* 2007 edition which provides:

> Except where documented otherwise, new floors are defective if within the first 24 months they differ in level by more than 10 mm in any room or area, or more than 4 mm in any 2 m length. The overall deviation of floor level to entire building footprint shall not exceed 20 mm.

116 According to Mr Cross the slab is now less out of level than when he first took readings. There is no evidence to support a conclusion that the slab has "hogged", or become markedly more out of level since it was poured.

117 With the exception of the refrigerator alcove which the experts agree is out of level, I am not satisfied that the difference in levels is, or is indicative of, a building defect. I allow $250, inclusive of cumulative factor, for levelling compound and its application for that area. I make no allowance for grinding the slab.

Moisture in slab

118 The Owners plead at paragraph 6(a)(A)(x) of the APCC that:

> Slab exhibits a high degree of moisture, under the slab (BBS 1 at paragraph 13.8.1 and BBS 2 at page 22)

119 At 13.8.1 of BBS1 Mr Cross refers to moisture under the slab. In BBS2 he refers to "high relative humidity in the concrete slab". Mr Cross took hygrometer readings in 12 locations and included them as appendix 2 to BBS2. He concluded from these readings that the concrete slab is "quite permeable and will continue to allow moisture penetration for the life of the building". Mr Cross relied upon the publication *Moisture in Concrete* of April 2007 to say that "concrete is deemed dry enough when the relative humidity is less than or equal to 70%". He added a footnote to say that "dry enough refers to the dryness considered satisfactory to install textile surfaces".

120 The readings recorded by Mr Cross ranged between 73.1 and 96.4%. In the course of evidence Mr Cross said that the readings indicated high humidity in cracks. However the cracks are at humidity holes 2, 4, 6 and 11 and there is little difference between them and adjacent humidity holes which were not placed on cracks.

121 Somewhat surprisingly, Mr Cross said during concurrent evidence that relative humidity bears no relationship to ambient temperature, therefore there was no need to record ambient temperature at the times when the humidity readings were taken. I prefer Mr Cossins' evidence that I can have

no confidence in Mr Cross's readings in the absence of temperature records for the room and the slab.

122 There is undoubtedly excess moisture in the slab near the slab edges to the north, south and east of the house. Efflorescence is visible in areas of up to 30 mm from the skirting boards along the length of these external walls but none of the MDF skirting boards have "blown" or been caused to swell by the presence of water.

123 It is noted that no efflorescence is visible along the concrete cracks in the house. However Mr Robert Fidone reported that water had appeared in a crack in the garage. Mrs Fidone said during the site inspection that when the house has been shut for some time and she returned to it, there was a smell of, or similar to, mould.

124 Although I find above that the Builder should have graded the site away from the house, I find that the continuing lack of freeboard contributes to water entering the slab, and note that the Owners failed to rectify the soil grading since they took possession of the site in late December 2009. I cannot be satisfied that the efflorescence and damp around the edge of the house has been caused by anything other than failure to adequately grade the site combined with failure to ensure that the vapour proof barrier extends to ground level.

125 I mention that in the course of cross examination Mr Cross said that he did not suggest the Owners grade soil away from the house because:

> They've already said they don't want the building and they weren't going to do any more work

126 Mr Robert Fidone said under cross-examination that no-one advised him to rectify the pooling water. He added:

> I was told to make myself comfortable and not touch anything.

He confirmed that this meant he was to touch nothing outside the house. Mr David Fidone gave similar evidence.

127 I am not satisfied that the slab is abnormally moist, with the exception of areas around the edge.

Concrete strength

128 I note that the VHC engineering design for the slab and footings called for concrete strength of 20MPa. Although significant time was expended during the hearing regarding the various core tests, the Owners have not specifically pleaded that the concrete is below 20MPa in strength. It is not referred to in the APCC, nor is it mentioned in the two Cross reports upon which the APCC relies concerning building defects. Nevertheless, I have considered that parties' evidence and submissions regarding concrete strength.

129 Exhibit R1 is a document prepared by Mr Cross and tendered during the course of the hearing. It is a table of results of various core tests undertaken by Civiltest and Independent Concrete Testing. Two cores were tested by Civiltest and gave results of 10.3MPa and 10MPa. Further, two of the Independent Concrete Testing cores of 25 February 2009 were less than 20MPa. Mr Cross said that the cores were taken on beams and drew my attention, in particular, to the edge of the alfresco and the door between the alfresco and the garage.

130 Mr Buffington of Civiltest appeared in answer to a witness summons issued by the Owners. He said that the purpose of the cores he took was to determine the position of the steel, relative to the top and bottom of the cores, but then his firm was asked by VHC to undertake compression tests on the cores as well "as an afterthought". He said that he did not personally take the cores, transport them or test them.

131 Under cross-examination Mr Buffington agreed that he is familiar with AS1012.14 *Methods of testing concrete. Method 14: Method for securing testing cores from hardened concrete for compressive strength.* He also agreed that it was not followed. He was not able to demonstrate, conclusively, that the cores tested were from the site. He said that there would be records of the provenance of the cores, but he did not have the records with him at the hearing. Further, of the ten matters that must be reported in accordance with paragraph 10 of AS1012.14, only two were reported – the size and position of the reinforcement and the calculated core strength. I am satisfied that for a core test to be of probative value it must be NATA-complaint, and that the Civiltest results were not. For both these reasons I am not satisfied that I can rely on the results of strength testing carried out by Civiltest.

132 The Owners also sought obtained a witness summons to have a representative of Independent Concrete Testing attend the hearing. They were unsuccessful in finding and serving the proposed witness.

133 A matter that was raised in passing more than once during the hearing was that there were 17 core holes, but only 13 results. It was not made clear whether the 17 core holes included the 5 cores provided by Mr Cross (Exhibit R4) which were not tested for strength. My recollection and notes agree with one of Mr Oliver's final submissions: Mr Radings was not cross-examined concerning these alleged additional cores. In the absence of further evidence, I disregard the suggestion that there might have been cores that were not accounted for.

134 Mr Cossins criticised some of the cores on the basis that they contained reinforcement steel. He said that AS1012.14 paragraph 6.2.2(a) suggests avoiding steel, because he said cutting the core can cause fractures beside the steel. Mr Cross said the presence of reinforcement steel only produces misleading results if the steel is at an acute angle to the core. I note that AS1012.14 states that the presence of reinforcement is not a criterion for

rejection of a core, but in paragraph 6.4, "preparation of test cores" the presence, nature and position of reinforcement must be recorded. I am not satisfied that the presence of normal reinforcement steel gives an inaccurate result, particularly as it is not a matter to be corrected for in reporting results.

135 Having disregarded the Civiltest results, the Independent Concrete Testing results average over 20MPa, even before a factor of 1.15 is applied to the average in accordance with paragraph B6.4.2 of AS3600-2001, *Concrete structures*. I am therefore not satisfied that the core tests establish that the concrete is under strength. It is noted that when the multiplier of 1.15 is applied, the average strength is 25.25MPa.

Slab failure conclusion

136 I rely on Mr Cossins' evidence in the course of concurrent evidence to find that the slab has not failed and I am not satisfied that the cracks need to be rectified. He said that if the slab had failed he would expect to see movement in brittle surfaces such as the brick walls and plaster – cornices in particular. Further, I am not satisfied that the slab is likely to fail during its expected life. Should one or more of the slab, the footings or the foundations actually fail before the expiration of the limitation period, the Owners' right to claim is not necessarily extinguished by this proceeding.

Non-slab-related defects

137 Mr Cross listed defects that would need to be rectified if the Tribunal were to decide that the slab, and therefore the house, did not require demolition. They are:

Drainage around the building

138 The Owners plead at paragraph 6(a)(B) of the APCC that:

> The constructed dwelling does not have adequate drainage, in that the BCA and contract engineering specifications require installation of AG drains for excavation over 300 mm in depth (BBS1 at 13.8 and BBS2 at page 26). The [Builder] did not provide these.

139 I note that the second of the excluded items at schedule 5 of the contract between the parties which is found at page 33 of the BTB is:

> Owner to supply and install all aggie drains and silt pits as required.

140 However a note on the site plan which forms part of the contract documents (BTB81) is:

> Note: Provide ag drains to base of cut where it exceeds 300mm deep & riser pipes to corners as required. Provide a silt pit for each connection between ag drain and stormwater drainage.

141 It was not drawn to my attention that there might be inconsistent terms in the contract and the contract does not contain a clause to indicate which of

the contract documents have priority over others. I therefore construe the contract contra proferentum; against the interests of the Builder.

142 Even if I were wrong about the interpretation of the contract, I note that Mr Radings admitted under cross-examination that the Builder never notified the Owners that it was necessary for them to install agricultural drains and silt pits where the site cut was greater than 300mm. As the Builder designed the house, I find that to give the contract commercial efficacy, the design of the drainage scheme was part of the Builder's obligations. At very least it was obliged to notify the Owners of the necessity to install drainage at a time when this could be achieved without endangering the integrity of the finished house, or necessitating some demolition.

143 I find that the Builder was obliged to install agricultural drains at the base of cuts of greater than 300mm. I accept Mr Cross's evidence that grading the site correctly will result in a cut to the north east of about 600mm and that a drain is necessary there, running down the east and west of the house to discharge at the street.

144 The only design and costings of the drain in evidence before me is that provided by Mr Cross. At paragraph 4.5 of his "repair slab" calculations of 20 February 2011 he allowed $13,014 for the slab. During concurrent evidence he allowed a further $1,500 to make good the cut to the garage floor, a total of $14,514. When the cumulative factor of 1.32 is applied the total sum, which I allow, is $19,158.

Site cut exceeds required height

145 The Owners plead at paragraph 6(a)(D) of the APCC that:

> The [Builder's] excavation of the site cut exceeded the required height by 300 mm (BBS1 at paragraph 13.8 and BBS2 at paragraph 85).

146 At paragraph 85 of BBS2 Mr Cross did not say that the site cut exceeded the required height by 300 mm, just that the site cut exceeds 300mm, necessitating the installation of an agricultural drain. Mr Cross's measurements at Cross Exhibit 15 shows that the finished floor level was 100.719. The site plan which forms part of the contract documents (BTB81) shows a required finished floor level of 100.730 – a difference of 11mm.

147 The Owners have attributed the wet site, in part, to the site cut allegedly being too deep. Under cross-examination Mr Radings said that although the cut was too wide and too long, it was not too deep. He said that the site was to be cut to 100.5 and that the site plan was inaccurate. Evidence was given that more soil was removed than was originally contemplated by the parties. However as neither party has claimed relating to the additional soil, I do not take it into account.

148 I find the finished floor level, and therefore the depth of the site cut, substantially complies with the contract and make no allowance for it.

Bracing

149 The Owners plead at paragraph 6(a)(E) of the APCC that:

> Walls have not been braced adequately and there is no effective permanent bracing plan (BBS1 at paragraph 14 and 14 A and BBS2 at page 23).

150 At paragraph 6(a)(G) of the APCC they plead that:

> Roof trusses connections have not been installed in accordance with AS 4440-2004 (BBS 1 at paragraph 16 and BBS 2).

151 In his first report Mr Cross said that there was insufficient bracing in the garage (considered further below), the hardboard sheets to the front wall of the building were insufficient and bracing is necessary in the ceiling plane of the alfresco and also to the kitchen and walk-in robe.

152 Mr Cross based his conclusions concerning inadequate bracing on the fact that the site plan (BTB81) calls up Australian Standard AS1684 for residential timber framed constructions, but that the front wall and alfresco in particular have too little braceable wall when compared to the sizes of the windows.

153 Mr Cross also referred to construction photographs, but these were taken before the frame was finished and do not necessarily show all bracing, although it does show metal cross-bracing to the rear of the house. In both his report and in concurrent evidence he expressed concern that no engineering or architectural design was provided in relation to the amount, location and type of permanent wall bracing.

154 Mr Gibcus's report for the Building Commission stated at items 15.1, 15.2 and 15.3 that the top chords of the hip trusses needed to be rectified. He said it was necessary to install triple grip anchors at the bottom chord connection of the saddle trusses to the trusses over the garage and that the roof bracing at the ridge needed to be rectified to comply with the appropriate Australian standard.

155 Mr Radings said in cross-examination that he believed all this work was subsequently rectified, however the Owners claim that the front wall, walk-in robe, hall and alfresco bracing remain defective.

156 Mr Cossins reported on 5 August 2010 that the bracing of the building cannot be determined from a visual inspection of the completed building, that the construction photographs are not conclusive – particularly that there is no indication of whether they were taken before or after frame inspection – and that Mr Cross's criticisms were otherwise a misinterpretation of AS1684, with the exception of his concerns about the garage roof.

157 I prefer the evidence of Mr Cossins with respect to bracing (excluding the garage). I am not satisfied that this bracing is defective.

Garage roof

158 The parties agree that the garage roof needs further bracing. Mr Cross's solution, costed at 5.1 of his costing of 20 February 2011, is installation of a metal portal frame at the cost of $6,250 before application of the cumulative factor. Mr McLennan costed Mr Cossins' solution of diagonal wooden diaphragm bracing within the roof structure at $993.34 before the application of the cumulative factor.

159 Mr Cross disagreed that the diagonal bracing would be adequate, because of the difficulty of fitting it into the already crowded garage ceiling space. Mr Cross pointed this out to me on site, and it is clear that there is no easy solution. Mr Cossins said that the timber bracing members can be installed in pieces to enable them to be fitted into the space available.

160 In concurrent evidence Mr Cross revised his estimate to $1,950 for the portal frame, plus an uncosted amount for rectification of the plaster. On day 6 of the hearing – 28 May 2011 – Mr Oliver made an open offer on behalf of the Builder of $2,400 for the cross-bracing. The offer was not responded to during the hearing.

161 In the absence of better evidence I allow $2,400 being for the portal frame suggested by Mr Cross, plus plaster and paint to make good. I multiply this by the cumulative factor of 1.32, being a total of $3,168.

Brickwork

- Mortar breached cavities

162 The Owners plead at paragraph 6(a)(F)(i) of the APCC that:

> Mortar has breached the cavity between the brickwork and frame (BBS1 at paragraph 15.1.1).

163 Mr Cross said that he observed the mortar in the wall cavities when he looked down where sheets of roofing iron had been removed. He saw the lack of wall ties in the same locations. Unfortunately he was unable to identify where the roofing sheets had been removed during the site inspection on the second hearing day – my record of his comment was that he could not recall where the roof sheets had been removed. On the 5th day of hearing – 27 May 2011 – he said that each area where he had seen mortar in the wall cavities was above a window. He identified them as the kitchen window, the most easterly front window and the window on the west side of bedroom 4. I am concerned that the Owners' failure to ensure that the Builder was in no doubt about the areas inspected caused delay during the hearing and necessitated a further visit to the site by Mr McLennan.

164 Mr Cross said he saw mortar on some of the brick ties and that there was less than a 25mm gap to the sarking in places. After his visit to site on 2 June 2011, between days 8 and 9 of the hearing, Mr McLennan reported that there is minimal mortar intrusion into the wall cavity, and that the sarking will prevent the transmission of damp into the house. He also said

that in the areas he inspected there were two layers of sarking – the green Enviroseal tight against the frame, and looser blue sarking that seemed to have been installed over the window flashings. He said he saw a number of places where mortar extended to the blue sarking, but that this was inconclusive because it was not tightly fixed to the frame.

165 Mr McLennan said the sarking contributes to keeping the house dry. Mr Cross said its purpose is to enable interior building to continue after the frame has been built but before the brick walls have been completed. It seems likely to me that sarking fulfils both purposes.

166 On the 6th day of the hearing the Owners tendered five photographs taken by Mr Cross (Exhibit R7) looking down the wall cavity from the roof. In each there was protrusion of mortar into the cavity, but none showed mortar touching the sarking. Further, I accept Mr McLennan's evidence that he used a mirror to look up the wall cavity in a few locations and there was no evidence of excessive mortar. I also accept Mr Cossins' evidence that he used a camera with a semi-rigid cable to the lens and light, that allowed him to see about a meter into a cavity, and that there was no excessive mortar visible in the wall cavity that he inspected.

167 I am not satisfied that any work is necessary to rectify this alleged defect and I make no allowance for it.

- Damp proof course

168 The Owners plead at paragraph 6(a)(F)(ii) of the APCC that:

> The DPC is not located in accordance with the BCA requirements, in that it is set back, does not extend through the entire masonry leaf, and is not located at the correct height from finished ground level (BBS 1 at pages 22 to 23. BBS 2 at page 28).

169 Mr Cross said the damp proof course is set back in the mortar between 15mm and 30mm throughout and does not provide an effective barrier to the rising damp. He added that the damp proof course is not continuous at door openings, at the garage and at solid masonry piers connected to the timber framework or at the garage retaining wall. Thirdly, he said that the finished ground level should be at least 150 mm below the damp proof course level, but is not.

- *Lateral extent of DPC*

170 Mr Gibcus said in the Building Commission report that the damp proof course is not defective. He said he observed that the damp proof course flashing extends to within 12 to 15 mm from the face of the brickwork and that the brick mortar is raked to a depth of up to 10 mm. He added that the BCA states that the damp proof course must be of sufficient width to extend through the entire width of the masonry leaves. He concluded that "because the damp proof course extends sufficiently to the extent of the width of the masonry mortar, this is not a defect." I note that based on Mr Gibcus's

observations the damp proof course is between 2 and 5mm short of the edge of the mortar.

171 Mr McLennan said in concurrent evidence that the damp proof course might be redundant, although it is necessary to fulfil the BCA "deemed to satisfy" provisions. He pointed out that the BCA does not require the use of sarking, which in this house contributes to preventing any moisture in the wall cavity reaching the frame, plaster and interior of the house. The experts agreed that the purpose of the damp proof course is to prevent water travelling up the masonry by capillary action, thus preventing both extra dampness in the wall cavity, and minimising the possibility of salt attack at the base of the brickwork. He said that the bricks used are robust and resilient to salt attack. There was no evidence of salt efflorescence on the bricks.

172 I prefer the evidence of Mr McLennan, which is supported by Mr Gibcus's report. I make no allowance for the damp proof course, except as provided below.

- *Alleged discontinuity of DPC*

173 I accept Mr Cross's uncontradicted evidence that the damp proof course does not continue beneath the windows and doors at slab level. He did not make a separate allowance for this item, but included it in his overall cost of removing and replacing, in alternate 1 meter sections, the bottom brick courses to enable the damp proof course to be reconstructed, the vapour proof barrier to be tucked into the rebate below the bottom brick, and the wall cavity below the damp proof course to be concrete grouted.

174 Mr Cross also said that he believes the damp proof course has not been installed in the garage and solid masonry piers. Mr McLennan said that he was unaware of the areas referred to by Mr Cross, and their location was not made clear to me.

175 Mr McLennan said that the aluminium doors and windows have provision for drainage in their extruded sections, obviating the need for separate flashing. The only windows/doors at slab height are the front door, which is protected by the verandah; the alfresco door, which is protected from direct weather by the substantial alfresco; the pedestrian door to the garage between the alfresco slab and the garage slab, and the unprotected laundry door to the west. In the absence of better evidence, I allow $500 inclusive of the cumulative factor, for rectification of the damp proof course at the laundry door.

- *DPC freeboard*

176 During cross-examination Mr Radings agreed that the damp proof course is not consistently 150 mm above the ground. However he added that if the ground is adequately graded away from the house, the damp proof course should be effective. I accept his evidence. As I have allowed for site grading above, I make no further allowance.

- Window sills

177 I accept Mr Cross's evidence that some of the window sills are insufficiently sloped. I allow $538 to re-slope the window sills in accordance with Mr Cross's evidence. Applying the cumulative factor of 1.32 the allowance for this item is $710.

Unfilled mortar joints

178 The Owners plead at paragraph 6(a)(F)(iii) of the APCC that:

> Unfilled mortar joints are evident in the east garage wall (BBS1 at paragraph 15.1.4).

179 Mr Cross said at 15.1.4 of BBS1:

> Such unfilled joints will allow an excessive amount of water into the garage wall cavity.

180 Mr McLennan reported that there were voids around service penetrations to the west wall and the south wall of bedroom 4. Of the east wall of the garage he said:

> The majority of the wall is concealed by the timber fence. The visible parts of the wall above the fence contained no mortar voids.

181 On the day of the site inspection, the fence had been temporarily removed. It appears that the wall to the top of the fence height had been laid "over-hand", that is, it had been laid by brick-layers working from inside the garage, whereas once the wall was higher than the fence, it was laid in the conventional manner from outside. The resulting wall is significantly rougher below fence height than above it. I make no allowance for rectification of the appearance of the wall below fence height, but in accordance with Mr McLennan's concurrent evidence, I allow for all mortar patching, $1,391 by the cumulative factor of 1.32; a total of $1,836.

Joint widths and deformed bricks

182 The Owners plead at paragraph 6(a)(F)(iv) of the APCC that:

> The brickwork exhibits excessive variation in joint widths and the joint widths exceed tolerances (BBS1 at paragraph 15.2; BBS2 at page 35).

183 The bricks used are "Sandstock" and are designed to have a rustic appearance. Some of the bricks are quite irregular in shape and size. If the Owners had bargained for uniform, wire-cut bricks, their appearance and that of the mortar would certainly be defective, however this is a different type of brickwork.

184 The overall appearance of the brickwork is irregular but does not have the appearance of defective work. Nevertheless, to reprise Martin CJ in *Willshee*, the Owners are entitled to performance of the contract they entered "irrespective of the view which other people might form in relation to ... the aesthetic appearance of the house".

185 A difference between *Willshee* and this proceeding, is that in *Willshee* there was no question that the limestone was defective. In this proceeding there is a question about whether the Owners got what they bargained for. When compared with the previous display home in Michigan Grove, Pakenham, I find that the appearance of the house is consistent with the standard that the Owners were entitled to expect. If small areas of brickwork are considered, both houses have some odd-shaped bricks, which leads to strange shaped bed joints and perpends. These unusual bricks, when considered as a whole in both houses, give an appearance of warmth, charm and antiquity. They do not appear poorly built and I find that the appearance of the brickwork in the house is not defective.

Patched mortar

186 The Owners plead at paragraph 6(a)(F)(v) of the APCC that:

> Patch mortar is evident at various locations (BBS one at paragraph 15.2.1).

187 This has been allowed for above under "unfilled mortar joints".

Absence of brick ties

188 The Owners plead at paragraph 6(a)(F)(vi) of the APCC that:

> Brick ties have not been installed in accordance with BCA 3.3.3.1 (BBS 1 at page 24 and BBS 2 at page 26).

189 The masonry ties referred to are in the top three courses of bricks. According to Mr Cross, whose evidence I accept, the masonry ties may be at 600mm centres for most of the wall but in the second course from the top they should be at 300mm centres to fulfil the BCA deemed to satisfy provisions.

190 The absence of brick ties was not able to be seen at the site inspection. Mr Cross said that he observed this when parts of the roof were taken off and he was able to look down the exterior wall cavities in a number of places. At the site inspection Mr Cross said that he could not recall which areas of the roof had been removed to enable him to inspect, which was unfortunate, because I did not have the opportunity to inspect the same areas. Further, neither Mr McLennan nor Mr Cossins had inspected those areas, although after his inspection on 2 June 2011 Mr McLennan reported the absence of additional brick ties at the top of the walls in the course of examination in chief.

191 Correspondence between solicitors for the parties shows that the Builder was seeking information about the areas inspected. The Owners' response to requests for access was somewhat unhelpful. In a letter from the Builder's solicitors ("Naidoo") to the Owners' solicitors ("Franzese") of 28 May 2010 they said:

> We expect the same access as was provided to your client's expert Mr Cross to ensure that our client's experts are able to provide

> appropriate informed expert reports complying with VCAT Practice Note 2 and to ensure a fair and reasonable outcome for all parties concerned.
>
> We anticipate that such access may include but not necessarily be limited to:
>
> ...
>
> (b) Such access to masonry cavities as may be necessary to confirm Mr. Cross's report.

192 In a letter from the Franzese to Naidoo of 11 June 2010 the locations of the areas inspected were correctly identified without saying that roof sheets were removed to gain access. Further, in an e-mail from Franzese to Naidoo of 31 May 2010, the Owners denied the Builder's expert the right to carry out destructive testing without approval (Exhibit 5 to Mr Naidoo's affidavit of 11 June 2010). During cross-examination Mr Cross said that removal of roof sheets is not "destructive" but this Clintonesque distinction is neither helpful nor convincing, particularly as a roof batten had to be removed as well.

193 On my suggestion, Mr McLennan visited the site again on 2 June 2011 to inspect these areas. I specifically reserved costs concerning this issue, which occupied much more hearing time than was justified. I remark that fighting hard for one's client is counter-productive when what appears to be pedantic point scoring costs them extra to run the case. I note that under cross-examination Mr David Fidone agreed that although he was on site when Mr McLennan inspected before the hearing, he did not remove the roof sheets or volunteer the information that they had been removed for Mr Cross.

194 After inspection Mr McLennan agreed that there appeared to be insufficient wall ties at the top course. He had said in his report that the presence of the metal fascia at the top of the walls provided additional lateral support. Mr Cross disagreed and I prefer Mr Cross's evidence in this regard.

195 Mr Cross allowed $1,600 for ties to the top courses. Mr McLennan allowed $1,033 for the provision and installation of remedial Helifix wall ties. Although Mr McLennan's solution might be adequate, I cannot be satisfied that it is, as under cross-examination he agreed that he was not making an expert judgement, for the purposes of the BCA, that the solution would be adequate, and that he did not have documentary evidence of the suitability of the product for this purpose.

196 I allow Mr Cross's figure. The total allowed for this item is $1,600 by the cumulative factor of 1.32, being $2,112.

Blocked articulation joints

197 The Owners plead at paragraph 6(a)(F)(vii) of the APCC that:

> All installed articulation joints contained mortar contrary to BCA 3.3.1.9 (BBS 1 at paragraph 15.3.2).

198 There were no visible blockages to the articulation joints, viewed from outside the house, at the site inspection. The articulation joints appeared to be properly caulked. As with the masonry ties, Mr Cross said that he observed blockages in the back of the articulation joints when part of the roof was taken off and he was able to look down the exterior wall cavities in a number of places.

199 Photographs tendered by the Owners on the sixth day of the hearing (Exhibit R6) showed some mortar in the back of the articulation joints. Photographs tendered by the Builder after Mr McLennan had visited the site again on 2 June 2011 (Exhibits A15, 16 and 17) did not show much mortar in the top of the articulation joints. It had been suggested by the Builder's solicitors in letters to the Owners' solicitors that the caulking be removed to allow inspection. This suggestion was not acceded to.

200 Nevertheless, Mr McLennan said in answer to my question that the articulation joints need to be stripped out and reinstated as he had seen sufficient mortar to justify this. In accordance with the costing of Mr Cross with whom Mr McLennan agrees, I allow $640 by the cumulative factor of 1.32; a total of $845.

Plasterboard

201 The Owners plead at paragraph 6(a)(H) of the APCC that:

> Plasterboard is not flat and does not meet the tolerances in AS/NZ 2589/2007 (BBS 1 at paragraph 17).

202 Mr Cross and Mr McLennan agree that the maximum tolerance for wall linings is 4mm over 1800mm, but they disagree about the method of measurement. Mr McLennan said that measurement of the deflection of a bow should be taken across it and parallel to the correct line of the wall, therefore there would usually be a deflection on each side of the bow. He said he believed Mr Cross was measuring the bow by applying the spirit level to one side of the bow, so that the whole of the deviation would appear to be on the other side, potentially doubling the apparent deviation.

203 Mr Cross said at paragraph 17 of his first report that the rooms where the walls exceeded tolerances for flatness were the master bedroom, the lounge/theatre, the en suite, the entry, the family room, study, bedrooms 3 and 4, with deviations ranging between 7 and 10mm. He also said:

> The large patch of plasterboard located under the east window in bedroom three is to be replaced with plasterboard linings without visually detectable joints.

204 Mr Gibcus reported for the Building Commission that there were a number of rooms where there were bows in the walls. He reported them in the master bedroom, lounge/theatre, bedroom 3 and bedroom 4; the greatest

bow being 7mm. Under cross-examination, Mr Radings said that the cause of the bows was that the Owners installed double thickness insulation and that the bows reported by Mr Gibcus have now been rectified. It was not made clear whether the straightening work alleged to have been done by the Builder was undertaken before or after BBS1. The issue is not discussed in BBS2. However, if the walls had been rectified between the first report and the second, I would expect an expert aware of the obligations imposed by VCAT Practice Note 2: Expert Evidence, to raise this is a later report or at latest at the hearing.

205 In his report of 7 August 2010 McLennan said all the areas reported were within tolerances and not defective.

206 I find that the method of measurement adopted by Mr McLennan is in accordance with the method recommended in the *Guide to Standards and Tolerances* 2007, page 11. I find this is the appropriate method.

207 At the site inspection Mr Cross demonstrated that according to Mr McLennan's method, three walls exceeded tolerances: the rumpus room west wall, the family room east wall below the window and the lounge/theatre north wall. Mr Cross and Mr McLennan agreed that if all eight areas nominated by Mr Cross were repaired, the cost would be $2,320. As I am allowing three areas instead of eight, in the absence of better evidence I allow $1,000 by the cumulative factor of 1.32, a total of $1,320.

Termite protection

208 The Owners plead at paragraph 6(a)(I) of the APCC that:

> The installed termite system is incomplete and has not been installed in accordance with the applicable standard (BBS1 at paragraph 18 and BBS2 at pages 37-38).

209 At paragraph 18.1 of BBS1 Mr Cross said that insufficient information had been provided to determine the adequacy of the system, but added that the system is incomplete on the east wall of the garage. He added at paragraph 18.2 that a clear inspection gap of 25mm is necessary at downpipes.

210 Mr McLennan said in his report of 7 August 2010 that the Builder must provide a durable notice prepared by the termite barrier installer, affixed to the inside of the meter box. He also said that the Owners need to be given a notice about the limited effectiveness of the barrier along the eastern boundary-wall of the garage, to enable the Owners to establish an "appropriate inspection regime". Given that inspection of this area is usually impossible because the boundary fence is in the way, I accept Mr Cross's evidence that the system needs to be rectified.

211 I accept Mr McLennan's evidence that it is not necessary to allow a 25mm inspection gap where a barrier system is used.

212 I allow the cost of the installation of Graniteguard at the east wall of the garage at $400, being the cost agreed by Mr Cross and Mr McLennan,

multiplied by the cumulative factor of 1.32; a total of $528. I also allow $500 to enable the Owners to obtain a suitable notice/information from the termite barrier installer, or to source it elsewhere. The total allowance for this item is $1,028.

Retaining wall

213 The Owners plead at paragraph 6(a)(J) of the APCC that:

> The construction and design of the installed retaining wall required to be installed as shown on plan AP2A is defective in that-
>
> (a) The scoria and aggie pipe is located in the termite pipe zone.
>
> (b) DPC is less than 150 mm from the finished ground level contrary to BCA or is not evident.
>
> (c) The waterproofing agent has not been verified.
>
> (d) Brickwork has not been recessed as required on section AA.
>
> (e) The waterproofing solution has covered the articulation joint.

The retaining wall described is the bottom of the east wall of the garage.

214 Mr McLennan pointed out that the neighbours to the east of the wall have installed their own retaining wall to support their garden and therefore the garage wall no longer needs to function as a retaining wall. I am not satisfied that the Owners are entitled to rely on their neighbour's retaining wall for the expected life of the house. In accordance with Mr Cross's calculations of 20 February 2011, with which Mr McLennan concurs, the cost to rectify the retaining wall is $647. When multiplied by the cumulative factor of 1.32 the total is $854.

215 However, as Mr Cross explained in concurrent evidence, his estimate is on the assumption that the brickwork has been taken down and restored to enable the damp-proof course to be rectified. I allow Mr Cross's solution for the east wall only, at $200 per meter in accordance with his calculations. The length of the east wall is 7.246m as shown on the floor plan which is part of the contract drawings (BTB82). I therefore allow $1,449 by the cumulative factor of 1.32; being $1,913. The total for this item is $2,767.

216 I remark that there appear to be two retaining walls to which Mr Cross referred during the hearing – the garage retaining wall dealt with above, and the sleeper retaining wall to which Mr Cross attributed $5,800 due to excess excavation. Loss attributable to the sleeper retaining wall was not pleaded and is not allowed. Even if it had been pleaded, it is unlikely that it would have been allowed, because I am not satisfied that there was excess excavation in the area of the retaining wall, which is on the east side of the property commencing at the north wall of the garage.

Roof

217 The Owners plead at paragraph 6(a)(K) of the APCC that:

> The roof has not been constructed in accordance with the BCA (refer to paragraphs 20.1 to 20.4 of BBS 1).

218 Mr Cross did not attribute sums to each item, but allowed for the complete replacement of the Colorbond roof cladding, on the basis that it had been painted by or for the Builder. I consider the issue of roof scratches first.

Scratched roof sheets

219 The Owners plead at paragraph 6(a)(L) of the APCC that:

> Colorbond steel roofing sheets installed on the dwelling and garage by the [Builder] are damaged and defective, in that they have been scratched and are paint spotted. Numerous faded paint spots are evident on the front and back of the roof on the dwelling and the garage. Details and locations of the damage has been provided to the [Builder]. The conditions of the Colorbond roofing is contrary to the manufacturer's specification (BBS1 at paragraph 20.5). The damage was observed during July 2009, at a time when the [Builder] was in possession of the land. The [Builder] is responsible for the damage and it is likely that representatives of the [Builder] were responsible for spray painting the roof at the time of its installation[19]. The [Owners] seek replacement of the Colorbond steel roof to the dwelling and the garage, to the full face of the roof.

220 During the site inspection my attention was drawn to patches on the roof with a different gloss to the remainder of the roof. They were not particularly prominent, but according to the Owners the conditions for viewing them were not very good. The sky was overcast and the light poor on that day. Both parties agreed that the roof had apparently had patches of paint applied to it, but there was disagreement about who was responsible for the paint. One issue is whether the paint was applied before or after the Owners took control of the site and the house on 21 December 2009

221 In BBS1, after the Owners had taken possession of the house, Mr Cross said:

> Some of the roof sheeting has its Colorbond coating scratched off the surface. The roof sheeting should be of first quality undamaged material.

222 Mr McLennan responded on 7 August 2010 that there was a dent to a roof sheet on the southern elevation, to the west of the entry porch roof. He also reported five areas where there were scratches, but said:

> The Bluescope steel bulletin provides advice on the repair of scratched roof sheeting. It states that scratches less than 2mm in width and unnoticeable from the street should be left alone.

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[19] I remark that the proper limit of an expert's opinion is consideration of the work or documents he or she observes, compared with matters such as the builder's obligations as imposed by any contract, relevant regulations and competent building practice. Experts may state facts that a party puts to them and say that they rely on those facts being accurate (eg "I am instructed that...").

> In this instance, the observed scratches are less than 2mm in width and not visible from the street. Accordingly the scratched sheets should not be treated.

223 Mr McLennan allowed $424 (inclusive of cumulative factor) to replace the one dented roof sheet.

224 The roofing sub-contractor was Stoddart (Victoria) Pty Ltd. Mr Mitchie, state manager, was called by the Builder to give evidence, as was Mr Wayne Cartwright, Stoddart's supervisor. Mr Mitchie tendered a copy of Stoddart's file (Exhibit A23). Apart from the cover sheet, the document in the file with the latest date is ME21702-6 of 25 July 2009. One of the entries in "other information" was "Touch up scratches on roof". Mr Mitchie said that he is aware of a paint-pen that can be used to touch up scratches, but he did not say that this had been used. Mr Mitchie said Mr Cartwright told him that the only item not completed was the scratch touch-ups.

225 Mr Cartwright said under cross-examination that he did not apply paint to the roof and will not do so because it "doesn't have a good outcome". He also added that "every roof in Australia has scratches".

226 Mr Radings was recalled and gave evidence that he did not apply the paint or authorise it to be done. Under cross-examination Mr Radings agreed that Ian Vinen was the Builder's supervisor, with day-to-day control of the site. Mr Vinen was not called by the Builder to give evidence regarding this or any other aspect of the works.

227 Both Mr Robert and Mr David Fidone gave evidence that they did not apply paint to the roof. Further, at the Owners' Tribunal Book ("OTB") 41 there is a chain of e-mails concerning painting the roof, the first dated 4 November 2009 from Sharon Paech of Bluescope Steel to Shane McClaren of Bluescope Steel, copied to Mr David Fidone. The first paragraph is:

> I have had a call from a customer who is saying that a roof that was installed approx 6 months ago, and has fade spots on it – not sure if the issue is due to the product or the installer has used spray paint. The roof is bluescopesteel product. [sic]

228 Mr Cross's costing is $12,872 to remove and replace the roof cladding on the basis that painting the roof voids its warranty. Mr McLennan's revised costing for re-painting the roof was tendered on 2 June 2011 and is $5,508.70, before the application of a cumulative factor.

229 Exhibit R13 is a letter from Shane McClaren to Mr David Fidone of 24 January 2011 denying responsibility for the painted roof, as touch up paint was used outside Bluescope Steel's recommendation. Also attached to that document is a sample roof warranty for Colorbond steel roof. Warranty condition 8 is:

> The application of post paint treatments or systems to the product will invalidate this warranty.

230 In accordance with the rule in *Jones v Dunkel*[20] I draw an adverse inference against the Builder due to its failure to call Mr Vinen regarding work done at a time when the Builder had control of the site. I accept Mr Cross's evidence that the only way to give the Owners the outcome they are entitled to with respect to the roof is to allow for its replacement; in accordance with *Tabcorp*[21] they are entitled to a roof that looks new and they are entitled to a roof with a valid guarantee. In accordance with Mr Cross's evidence I allow $12,872 by the cumulative factor of 1.32; a total of $16,991.

231 Having allowed for replacement of the whole roof sheeting, it is unnecessary to consider the individual items.

Miscellaneous

232 The Owners plead a number of other defects at paragraph 6(a)(M) of the APCC under the heading "miscellaneous". They are as follows:

Missing downpipe to valley of alfresco –

233 Mr Cross's evidence is that a downpipe is required within 1.2 m of the valley gutter on the alfresco roof. Mr Cross relied on 3.5.2.5(b) of the Building Code of Australia which provides that downpipes must:

> be located as close as possible to valley gutters and, if the downpipe is more than 1.2m from a valley, provision for overflow must be made to the gutter;

234 Mr McLennan agreed that there is no downpipe within 1.2m of the valley gutter, but said that the provision Mr Cross had relied on was a "deemed to satisfy" provision and:

> In this instance the roof is adequately served by downpipes on the garage approximately 3.2m to the north of the alfresco valley.

235 However Mr McLennan's statement that AS/NZS3500.5 supported his view was not further supported by a copy of the relevant provision.

236 I prefer Mr Cross's evidence and allow $129 by the cumulative factor of 1.32, a sum of $170.

Internal exhaust fans to discharge to outside

237 Mr Cross and Mr McLennan agree that the exhaust fans do not discharge to outside the house. I allow $920 as allowed by each, by the cumulative factor of 1.32; a total of $1,214.

Misaligned mirrors –

238 Mr Cross reported that the mirrors in the en-suite and bathroom are both misaligned. He allowed $400 to rectify, a sum with which Mr McLennan agrees. Mr McLennan said that the gap differences between the corner of

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[20] (1959) 101 CLR 298

[21] See discussion above commencing at paragraph 12.

the wall and the adjacent mirror is due to the wall being slightly out of vertical, but within the 4mm tolerance.

239 On site I observed that the en-suite mirror is about 1mm from the corner at the bottom and about 5.5mm at the top. It is outside tolerances, albeit only just. I allow the en-suite mirror but not the main bathroom mirror, which I find is within tolerances. I allow $200 by the cumulative factor of 1.32, a total of $264.

Exposed tile edges

240 Mr Cross reported at paragraph 21.4 of his 3 May 2010 report:

> Tile edges in the wet areas have not been coloured to match the surrounding tile colours.

This is true. At the site inspection I could see that the face of the tiles is white and the tile edges appear terra cotta with a thin coat of white glaze over them. Mr McLennan said during concurrent evidence that touching up the tile edges would be part of an allowance he made for painting.

241 Mr Cross allowed nothing specifically for materials, although he did allow $100 under his column “Rawlinson’s or Est total cost” and two days labouring, which I take to mean 16 person-hours. I prefer Mr McLennan’s approach and make no specific allowance under this item, but take them into account under painting.

Sloped bath hob

242 This item is taken into account in the next item.

Bath not firmly supported

243 At item 20 of the Building Commission report, Mr Gibcus said that the bath is not fully supported. He said that the top north-east corner of the bath is not firmly fixed, he found that there is a defect because the bath is not fully supported at the north-east corner and he recommended that the bath should be refitted. Under cross-examination Mr Radings agreed that the bath is unsupported but said that tiles had been rectified.

244 On site Mr Cross demonstrated that the bath moves when weight is applied to it. In his first report Mr McLennan concluded that the noise that occurs when the pressure is applied to the base of the bath is not a defect. However, I prefer the evidence of both Mr Gibcus and Mr Cross and find that bath support is defective. I allow the sum Mr Cross said is necessary to rectify the bath of $1,120. When the cumulative factor of 1.32 is applied, the total allowance is $1,478.

Inadequate paint finish

245 Mr Gibcus's report for the Building Commission shows that the Owners complained of 13 separate items of defective paintwork or defective plasterwork. Of these Mr Gibcus for the Building Commission reported that eight required rectification. Mr Radings said under cross-examination that

all but one of these items had been rectified. The item that he said still needed rectification is a blemish on the plasterboard wall in the master bedroom.

246 At the site inspection my attention was drawn to paint on the front door frame. The putty used on the frame was too light in colour to match the wood colour, it was roughly cut in at the window panes, the sills were not as glossy as the paint on the adjacent vertical frame and the east sidelight sill was water-stained. In the master bedroom I was shown slightly defective cutting-in in two small areas. At the external corner of the front hall I was shown a small indentation near the base of the wall. In the family room I was shown slight marks at both ends of the window sill and the skirting board had eased away from the plaster.

247 At the site inspection we also worked through pages 63 and 64 of Mr McLennan's report of 7 August 2010, headed "Table 2, Item 21.7, Paintwork and finishes". Of the 30 items reported on by Mr McLennan, he acknowledged that 16 were defective and another partially defective. I inspected those he thought were not defective, and I am satisfied that another 7 are defective.

248 Mr Cross had allowed $8,400 to repaint and rectify mitre splits. Mr McLennan allowed a total of $7,600 for all painting defects (other than the roof) and necessary make-good painting after any necessary wall straightening and the installation of additional brick-ties. During concurrent evidence Mr Cross agreed in general terms with Mr McLennan's estimate. I round the sum up to $8,000 to allow for the additional items referred to in the preceding paragraph. I allow $8,000 for all painting and touch-up of the edges of tiles, by the cumulative factor of 1.32; a total of $10,560.

Veranda posts and brackets which are not sufficient

249 Mr Cross gave evidence that three of the verandah posts do not have adequate base stirrup connections, and allowed $450. Mr McLennan said that the design did not call for stirrup post and that the posts used are adequate for their role. Having regard to elevation 1 of the contract drawings (BTB81) I prefer Mr Cross's evidence and allow $450 by the cumulative factor of 1.32; a total of $594.

Split mitre joints

250 The parties agreed at the site inspection that we would not inspect the 25 mitre joint splits described by Mr Cross at paragraph 21.9 of his report of BBS1. Mr McLennan allowed one in his report of 7 August 2010 and I accept his evidence that he allowed for it in his painting estimate. I make no separate allowance for mitre joints.

Core holes in slab not properly filled

251 Mr Cross expressed concern that the core holes might not have been properly filled, rather than giving evidence that they had not. I make no allowance for this item.

Corner kitchen contains excessive gap

252 At the site inspection it was apparent that there is an unacceptable gap between the two corner cupboard doors below the bench in the south west corner of the kitchen. I accept the evidence of Mr Cross that the gap needs to be adjusted and that the cost of rectification is $200. I apply the cumulative factor of 1.32 and allow $264.

Properly fitted door handles

253 Mr Cross and Mr McLennan agreed during concurrent evidence that a proper allowance for this item is $100. I allow that sum by the cumulative factor of 1.32, a total of $132.

Garage door brackets not correctly aligned

254 Mr Cross and Mr McLennan agreed during concurrent evidence that a proper allowance for this item is $100. I allow that sum by the cumulative factor of 1.32, a total of $132.

Timber floor inadequately finished

255 The timber floor in the kitchen-meals-family room has some poor finish – debris in the polish – and is also noticeably cupped. Mr Cross did not cost repair of the floor because all his slab rectification solutions involved removal and replacement of the floor.

256 Mr McLennan costed a fine sand and one coat of polish at $1,003.08. The work will need to be more extensive than that allowed for by Mr McLennan, because the floor will need to be taken up and replaced in and around the refrigerator alcove, and the sanding will need to be sufficient to eliminate or minimise the cupping. Further, the floor area is extensive – Mr Cross estimated 50m^2 in his costing of 20 February 2011. In the absence of better evidence I allow $2,500 inclusive of the cumulative factor.

Preliminaries

257 In addition to the cumulative factor allowed by both Mr Cross and Mr McLennan, they have also made allowance for preliminaries. At item 1 of his document "Cost to repair slab" of 20 February 2011 Mr Cross allowed as $6,420 which I paraphrase as follows:

Work item	Material/ Hire	Trades	Day	Rate	Total	Rawlinsons (etc)	TOTAL
1.1 Site Establishment							
2 site sheds x32 weeks						1,920	
Site toilet 32 weeks	1,920						
Deliver & remove toilet	120						
Pump out toilet x16	1,184						

Install temporary fence	400	labourer x2	.5	320	320		
1.2 Disconnect electrics Make electrics safe & establish temporary power.	100	electric-ian x1	1	456	456		
	3,724				776	1,920	**6,420**

258 Mr McLennan, in his cost estimate of 11 May 2011, allowed nothing for the storage shed:

> Site storage sheds are not required on single block domestic work. In addition, the building will be able to be secured during proposed works.

He also allowed nothing for the site sheds and said:

> Existing toilets can remain in place during building works.

259 Mr Cross said in re-examination that he allows for a site toilet to avoid trades "traipsing through the house". In this case the Owners will be absent from the house during repairs and a site toilet is unnecessary.

260 Mr McLennan allowed the same amounts as Mr Cross for fencing and electrics, and added $435 for a 7m^3 bin for rubbish removal. I adopt his calculations regarding preliminaries and allow $1,711 with a cumulative factor of 1.32; a total of $2,259.

Removal and storage of building elements

261 Mr Cross and Mr McLennan also made allowances for removal and storage of various building elements. Mr Cross allowed a sum for removal of the termite system, which Mr McLennan did not allow and neither do I, as I am not satisfied that the work I have allowed necessitates it. Mr Cross and Mr McLennan agree that the appropriate sum for removal of the down-pipes and hot water system, and the removal of the skirtings and architraves is $1,040. As I am not allowing work to the floor other than to the timber floor, removal of skirtings and architraves will be unnecessary. In the absence of better evidence I allow $600 inclusive of the cumulative factor.

CLAIMS OF REPUDIATION/CONTRACT TERMINATION

By the Owners

262 At paragraphs 7 and 8 of the APCC the Owners plead as follows:

> 7. By emails dated 3 August 2009, 13 August 2009, 18 August 2009, 22 September 2009, 13 December 2009 & 14 December 2009 from David Fidone on behalf of the [Owners], the [Owners] requested the [Builder] to remedy the defects detailed by BBS in regard to the slab and frame. The [Builder] was unwilling to remedy the defects.
>
> 8. By virtue of the conduct of the [Builder] outlined in paragraphs 6 to 7 herein, it has repudiated the contract and [evinced] an

> intention to no longer perform the Building Contract, and by notice dated 7 December 2009, pursuant to clause 43 of the Contract, the [Owners] served a notice of default requesting the [Builder] to remedy the substantial breaches detailed therein. The [Builder] failed to comply with the notice and the [Owners] terminated the contract by written notice on 21 December 2009.

263 Paragraph 8 is an unusual pleading. It pleads both repudiation, which would entitle the Owners to accept the repudiation and end the contract without further reference to the contract terms, but it also pleads termination of the contract in accordance with the default procedure set out in the contract.

264 The e-mail of 3 August 2009 was not put into evidence. The email of 13 August 2009 from David Fidone to Mr Radings states, excluding the formal parts:

> Hi Rodney. I am writing to you in regards to your letter dated 5 August 2009 that my parents received on Monday the 10th August 2009 requesting the six payment of $63,666.50.
>
> Due to severity of building defects found by our private surveyor and detailed in the report handed to you on the 5th of August 2009
>
> as there are major defects in the construction of the above-mentioned property. The fix payment and any further payments will be withheld until such time as all noted defects in the report are rectified in full. [sic]

265 On 18 August 2009 Mr David Fidone sent two e-mails to Mr Radings. The first at 2:45pm was:

> I am writing to you in regards to my letter dated 3/8/2009 in reference to all the core holes in the concrete slab at the above-mentioned address.
>
> On the 3/8/2009 I formally requested/instructed you to provide me with a written [methodology] statement and supporting photographs along with signed approval from your building surveyor Jason Daniels of Advanced Building Strategies of such rectification works of the core holes.
>
> I also formally requested/instructed you to provide signed paperwork from your pest control company Termguard Melbourne Pty Ltd stating that they had reapplied the white ant barrier to the bottom of all three penetrations that broke through the moisture barrier plus the shower waste penetration in the main bathroom.
>
> As I haven't received the previously requested details I formally request/instruct you to forward me all of the requested details on my letter dated 3/8/2009 within 48 hours as of the date on this letter to [address].[sic]

The second, at 10:44 pm was:

> I'm writing to you in regards to my letter dated the 5th August 2009 and the independent building report on the above-mentioned property,

> that was handed to you in the Fair Haven Homes office on the 5th August 2009.
>
> I previously requested/instructed you to reply to me within 7 days of the 5th August 2009 as to how your going to rectify the problems listed in the report. As of the18th of August 2009 I'm still yet to receive detailed correspondence in regard to these matters.
>
> I hereby formally request/instruct you to provide me with a written reply within 48 hours of this date with a detailed explanation item by item as to how you intend to rectify all the items listed on the independent building report.
>
> Many of the items listed on the report are severe and don't comply with either the Building Code of Australia or the Australian Standards.
>
> All these items will need to be rectified to prevent you from being in breach of the H IA building contract we have with your company.

266 The only communication of 22 September 2009 from Mr David Fidone to Mr Radings was a letter concerning the repair of core holes and of the vapour proof barrier. The only communication of 13 December 2009 is an e-mail from Mr David Fidone to "Duncan" of the Builder. The e-mail concerns the appropriate person for the Builder to contact and arrangements for a "walk through" of the house which had been planned for 14 December 2009 but which was cancelled by Mr David Fidone. A letter in similar terms was sent by Mr David Fidone to “Duncan” on 14 December 2009.

By the Builder

267 At paragraphs 10 to 14 of the Builder’s Points of Claim filed with its application of 4 February 2010, the Builder pleads that the Owners purported to end the contract by the “termination of contract” notice dated 21 December 2009, but that none of the factual allegations were “legitimate or valid”. Further, the Builder pleads that by the time the Owners delivered the termination notice, they were in substantial breach of the contract. The Builder concludes:

> By their purported termination of the contract the [Owners] expressed an intention no longer to be bound by the contract and thereby repudiated the contract which repudiation the [Builder] accepted, alternatively hereby accepts and ends the contract.

Entitlement to fix stage payment

268 The Builder claimed the fix stage payment on 5 August 2009. Under cross-examination Mr Radings agreed that at that date there were some fixing stage items that had not been completed: the cupboard doors in the laundry might not have been fixed in place and there were some L-grips and triple-grips missing from the roof frame. In answer to the question why he would claim before all work for this stage was complete, he said that there was other work that had been undertaken that was beyond fixing stage. In accordance with Mr Oliver’s final submissions, I note that the existence of

some defects is not a defence to a claim for a progress payment under the contract. In contrast, incompleteness of work for that stage is, regardless of whether work for following stages has been undertaken,

269 I note that Mr Radings was asked how he could have completed lock-up stage when the carpet had not been laid as the definition in the contract of the stage included: "the flooring is laid". I do not regard as serious the suggestion that in this project vulnerable floor coverings such as carpet (as distinct from structural flooring) must be installed before, for example, architraves and skirtings are installed.

270 As I remarked during the hearing, if I were satisfied that the house needed to be demolished, the Builder would not have been entitled to the fix stage payment. I find that the Builder was not entitled to claim for fix stage until all work relating to fix stage had been undertaken, but this does not necessarily result in repudiation of the contract. As Deputy President Macnamara said in reliance on *Shevill v Builders Licensing Board*[22] in *Brown v Cardona & Ors (Domestic Building)* [2009] VCAT 910:

> It is clear that not every breach of contract even of a significant term of a contract constitutes a repudiation.

Entitlement to final payment

271 The Builder invoiced the Owners for the final payment of $25,466.60 on 21 October 2010.

272 Mr Radings said under cross-examination that the work still to be undertaken before completion (and still not completed) are installation of carpet, the oven, the dish-washer, fly screens and solar hot water. He said that this work is undertaken after the final inspection. He estimated their value as approximately $9,600.

273 Mr Radings said in re-examination that he cancelled installation of the carpet because of the core holes that had been taken.

274 Builders often find themselves on the horns of a dilemma concerning the final payment. "Completion stage" is defined in this contract as "the Building Works are complete in accordance with the Contract Documents". This definition reflects s42 of the *DBC Act*:

> A builder must not demand final payment under a major domestic building contract until-
>
> (a) the work carried out under the contract has been completed in accordance with the plans and specifications set out in the contract; and
>
> (b) The building owner is given either-
>
> (i) a copy of the occupancy permit …

275 Clause 36.1 of the building contract provides:

---

[22] (1982) 149 CLR 620

> Notwithstanding any other provision of this Contract the Builder must not demand Final Payment until after the Builder has given to the Owner either:
>
> - A copy of the occupancy permit …

276 That is, the Builder may not claim final payment until everything is completed, including installation of the hot water system, kitchen appliances and carpet, which both parties agree had not been installed when the final claim was made. The dilemma arises because, if oft-repeated anecdote is correct, as soon as such items are installed, teams of thieves descend on newly completed homes and remove them. For this reason, some builders adopt the practice of not installing such items until the owners are about to take possession.

277 Builders are not entitled to claim the final payment until every item called for in the contract has been provided. Nevertheless, the question remains whether the Builder had repudiated the contract by claiming at this point. I have no reason to believe the Builder did not intend to provide these items at all, but it seems to me that the Builder was attempting to alter unilaterally the terms of the contract, or to put it another way, to not be bound by the contract. I find that the Builder's claim before these final items were installed amounted to repudiation of the contract. See also *Boutique Homes Pty Ltd v Tzimourtas*.[23]

Termination under the contract

278 Clause 43.2 entitled the Owners to give the Builder notice to remedy the breach if the Builder was in substantial breach. The notice was required to specify the substantial breach, require the breach to be remedied within 10 days and state that if it was not remedied the Owners intended to end the contract.

279 Clause 43.3 entitled the Owners to end the contract if the Builder did not remedy the breach in 10 days, but 43.4 provides:

> The Owner is not entitled to end this Contract under this clause when the Owner is in substantial breach of this Contract.

280 On 7 December 2009 the Owners gave the Builder a three-page notice headed "Notice pursuant to clause 42.3". It appears to fulfil all the requirements of clause 43 (other than mistakenly referring to clause 42, which I do not regard as a fatal flaw), it listed 16 classes of defects referred to in Mr Cross's report of 4 August 2009 and required them all to be rectified in 10 days. But for the issue of whether the Owners were in substantial breach at the time when the notice was given, the notice could have been sufficient to enable the Owners to end the contract, which they purported to do by a notice headed "Termination of Contract" dated 21 December 2009.

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[23] [2010] VCAT 1793.

281 As I have found that the Builder had repudiated the contract by that date, I find the Owners' notices, if not otherwise effective, serve as acceptance of the repudiation.

DELAY COSTS

282 The Owners plead at paragraph 6(f) of the APCC that the building works were to be completed by 25 July 2009 and were not completed at the time of termination of the building contract, which they say was 21 December 2009.

283 Mr Radings agreed under cross-examination that the completion date was to be 25 July 2009, that it was not met and that the Owners are entitled to liquidated damages of $250 per week. He agreed that there had been no extension of time claims.

Agreed Damages

284 The Owners claim agreed damages from 25 July 2009 to 21 December 2009, being 21 weeks at $250 per week, of $5,250. The Builder allowed agreed damages of $1,143 as part of its calculation that $87,990.10 was owing to it, and in the course of the hearing, conceded a further $3,357; a total of $4,500.

285 The Builder agreed with the Owners that the date for completion under the contract was 25 July 2009. The Builder submitted that the date of completion was 2 December 2009, but gave no reason why that date is the appropriate date, although it might have been the date upon which the undated letter from the Builder to Owners at BTB 356 was sent by the Builder or received by the Owner.

286 As the Builder admits that there was incomplete work totalling $9,600 when the contract was ended by the Owners' notice, the house was not completed by that date. I therefore find prefer the Owners' submission. The Builder must allow the Owners $5,250 in total for agreed damages. As the Builder had allowed $1,143 as part of the calculation of $87,990.10 discussed at paragraphs 8 and 9 above, the further sum for agreed damages is $4,107.

General Damages

287 In addition to the agreed damages, the Owners claim at paragraph 10 the APCC the following time-related items:

> (ii) Loss incurred as result of payment of Rent @ $220 per week from the date of termination 21 December 2009 to 24 March 2010, being the date that the [Owners] commenced occupying the dwelling: 14 weeks @$220, total $3,080.

288 I am satisfied that the installation of the items necessary to enable to allow the Owners to live in the home, such as white goods, hot water and fly-screens, would occupy at least two weeks during the year. As the Owners

took possession just before the building industry Christmas shut-down, I allow five weeks at $220 per week; a total of $1,100.

Other damages

289 The Owners also claim at paragraph 10 the APCC:

> …non-contingent costs in 14.1- 14.3 ($6,000).

290 The reference to "14.1 to 14.3" is to these numbers in Mr Cross's document "Cost to repair slab" dated 20 February 2011. They are $3,000 for a building permit, $1,000 for insurance and $2,000 for structural design for underpinning, roof and wall bracing, retaining wall to garage and sleeper wall.

291 The Owners continue at paragraph 10:

> (iii) Cost of alternative accommodation until a new house is built being 3 months @$450 per week. Total $5,400.
>
> (iv) Storage of furniture August 2009 – February 2011. Total $9,054.
>
> (v) Removalist charges after reconstruction. $2,000.
>
> (vi) Cost of pulling down, storage and refitting outside and inside blinds. $2,000
>
> (vii) Fee thrown away for shed permit. $582
>
> (viii) Garden allowance from the developer for costs thrown away. $1,000

292 Further, although not specifically claimed by the Owners, Mr Cross's costing included, and Mr McLennan responded to "deconstruction" and "reinstatements". I include them under the headings attributed to them by the experts, and although not specifically pleaded by the Owners, I take them into account because they would otherwise have been costed as parts of other items which have been allowed.

"Non-contingent costs"

293 Mr Cross allowed $3,000 for a building permit, $1,000 for insurance (which Mr Cossins admitted was the appropriate sum in concurrent evidence), $2,000 for structural design of the underpins, roof and wall bracing, retaining wall to garage and sleeper wall, and $7,400 to remove, store and replace the contents of the house. At page 8 of his report of 19 May 2011, Mr McLennan allowed $2,800, corrected in evidence in chief to $3,640 inclusive of cumulative factor, for all but removal, storage and replacement of furniture.

294 I accept the evidence of Mr Robert Fidone that he and Mrs Fidone moved into the house on 24 March 2010 and note that they have since moved out again. I allow a sum for moving out and in again, and for the cost of storage furniture for 9 weeks, in accordance with Mr McLennan's costing at page 20 of his report of 11 May 2011, where he said that the reasonable period

for rectification of the items I have allowed is in the region of 2 months. In accordance with OTB59, I allow $2,700 for removal and replacement, plus $1,006, being $251.50 per month per shipping container for storage in accordance with Mrs Fidone's evidence supported by information from the Fort Knox website (OTB50); a total of $3,706.

295 I note Mrs Fidone's evidence that previous storage costs were paid for by her children rather than by herself and her husband, but this is a future expenditure that the Owners are likely to incur. I find that although the Owners appear not to be living in the house, they would have had to move out of the house to enable the work allowed to be undertaken. Expenses incurred in moving out, storage, and moving back in are necessarily incurred to enable the repairs to be undertaken.

296 I note that during cross-examination Mr McLennan admitted a permit would be necessary for some items including the installation of additional brick ties. In addition to removal and storage I allow $3,000 for the building permit, $1,000 for insurance and $1,000 for structural design of the garage bracing and retaining wall to the garage, being $8,706. I make no allowance for cumulative factor to the non-contingent costs, consistent with Mr Cross's treatment of them on page 7 of his costings of 20 February 2011.

Alternative accommodation

297 As discussed above, in accordance with Mr McLennan's evidence, repairs are likely to take approximately 9 weeks. I note the letter produced in evidence at OTB58 that the rental for a comparable home would be $450. I allow 9 weeks at $450 a week; a total of $4,050.

Blinds

298 The work to be undertaken includes roof replacement, the installation of brick ties, plaster make-good and painting in areas that would endanger the blinds. In accordance with Mrs Fidone's evidence I allow $1,056 based on the quotation of McMullen's Blinds at OTB49 for the external awnings and $900 in accordance with the quotation of Curtain & Blind Installations at OTB58 for the internal blinds, a total of $1,956.

Shed permit

299 I am not satisfied that the Owners were prevented from constructing their shed by any act of omission of the Builder. I make no allowance for it.

Garden allowance

300 I am not satisfied that the Builder's acts or omissions prevented the Owners from being entitled to the garden allowance that the developer would pay, if garden work was undertaken within a year of moving into the house. I make no allowance for it.

Deconstruction

301 Mr Cross costed substantial deconstruction at a total of $7,510 before the application of the cumulative factor. Mr McLennan costed a far more modest scope at a total of $844.80. I prefer Mr McLennan's scope and allow $845 by the cumulative factor of 1.32, being $1,115..

Reinstatements

302 Mr Cross costed reinstatement under four headings: termite protection, plumbing, electrical, and skirtings and architraves. Like Mr McLennan, I do not allow reinstatement of termite protection, and accept Mr Cross's figures for the other items. Mr McLennan had allowed $1,496 on page 8 of his report of 19 May 2011, but explained during evidence in chief that he had omitted the cumulative factor and increased the sum to $1,944.80. I allow $1,945.

FINANCIAL RECONCILIATION

303 The Owners are entitled to:

Slab:	
Honeycombing	$2,112
Rectify ledging	$1,109
Edge beam repair	$500
Grade site and rectify vapour proof barrier	$4,277
Level floor at refrigerator alcove	$250
Agricultural drains	$19,158
Garage roof brace	$3,168
Damp proof course at laundry door	$500
Re-slope window sills	$710
Unfilled mortar joints	$1,836
Brick ties	$2,112
Articulation joints	$845
Plasterboard walls	$1,320
Termite protection	$1,028
Retaining wall	$2,767
Roof	$16,991
Miscellaneous	
Downpipe to alfresco	$170
Exhaust fans	$1,214

Mirror	$264
Bath support	$1,478
Painting	$10,560
Verandah posts	$594
Adjust kitchen cupboard door	$264
Door handles	$132
Adjust garage door brackets	$132
Timber floor	$2,500
Preliminaries	$2,259
Removal and storage of building elements	$600
Delay:	
Further agreed damages	$4,107
General damages	$1,100
Non-contingent costs	$8,706
Accommodation	$4,050
Blind removal and replacement	$1,956
Deconstruction	$1,115
Reinstatement	$1,945
	$101,829
Less the agreed sum otherwise payable to the Builder:	$87,990
	$13,839

304 The Builder must pay the Owners $13,839 forthwith.

INTEREST AND COSTS

305 Interest and costs are reserved with liberty to apply.

SENIOR MEMBER M. LOTHIAN