Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2008/107

27 November 2008

Determination regarding the code compliance of a 9-year-old house at 48 Dyer Straight, RD1, Tauranga

1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the Act") made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing ("the Department"), for and on behalf of the Chief Executive of that Department. The applicant is the owner, D Wolstenholme ("the applicant"), and the other party is the Western Bay of Plenty District Council ("the authority") carrying out its duties and functions as a territorial authority or building consent authority.

1.2 This determination arises from the decision of the authority to refuse to issue a code compliance certificate for a 9-year-old building because it is not satisfied that the building work complies with certain clauses of the Building Code[2] (First Schedule,

[1] The Building Act 2004 is available from the Department's website at www.dbh.govt.nz.
[2] The Building Code is available from the Department's website at www.dbh.govt.nz.

Building Regulations 1992). The refusal arose because the building work had been undertaken under the supervision of Bay Building Certifiers ("the building certifier"), which was duly registered as a building certifier under the former Building Act 1991, but which ceased operating as a certifier before it had issued a code compliance certificate for the building work.

1.3 Taking into account the correspondence between the applicant and the authority following the application (refer paragraph 3.8), I consider that the matters for determination are:

1.3.1 Matter 1: The building envelope

Whether the wall and roof claddings as installed on the building comply with Clause E2 External Moisture of the Building Code. By the "claddings as installed" I mean the components of the system (such as the bricks, the flashings, and the joints) as well as the way the components have been installed and work together. (I consider this matter in paragraph 7.2.)

1.3.2 Matter 2: Compliance with the remaining Building Code clauses

Whether the building complies with the remaining clauses of the Building Code which are relevant to this house. (I consider this matter in paragraph 8.1.)

1.3.3 Matter 3: The durability considerations

Whether the elements that make up the building work comply with Building Code Clause B2 Durability, taking into account the age of the house. (I consider this matter in paragraph 10.)

1.4 Based on the records supplied, I consider that I have sufficient evidence available to allow me to reach a conclusion as to whether this building will comply with the Building Code once remedial work is completed. This determination therefore considers whether it is reasonable to issue a code compliance certificate. In order to determine that, I must address the following questions:

(a) Is there sufficient evidence to establish that the building work as a whole complies with the Building Code?

(b) If not, are there sufficient grounds to conclude that, once any outstanding items are repaired and inspected, the building work will comply with the Building Code?

I address these questions in paragraphs 5 and 9.

1.5 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Department to advise on this dispute ("the expert"), the purchaser's pre-purchase report, and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 7.1.

In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

2. The building

2.1 The building work consists of a detached house situated on a north-sloping rural site, which is in a medium wind zone for the purposes of NZS 3604[3]. The house is a kit-set building, which is a simple rectangle in plan and single-storey with a part basement garage and entry at the western end.

2.2 The house construction includes specifically designed steel framing to the upper level and roof, concrete foundations and slab to the basement garage, concrete block basement and perimeter foundation walls with suspended timber floors elsewhere, block veneer wall claddings and aluminium windows. The simple 30° pitch profiled metal hipped roof has no eaves projections except for the gutters.

2.3 The house has a continuous 1800mm deep lean-to veranda attached beneath the fascia of the main roof. The veranda roof is low-pitched, with timber framing, a spaced timber deck and open timber balustrades. On the northern elevation, timber steps lead up to the veranda deck and a small gable within the veranda roof is situated above the main entry door.

2.4 The expert has noted that he was unable to confirm whether the suspended floor framing is treated or to assess the level of treatment of the framing to the lean-to verandas.

2.5 The kit-set house is a "Paal Kit Home" manufactured in Australia and the consent documentation includes an engineer's "Producer Statement – Design" for the design, together with bracing calculated in accordance with local requirements and drawings for the basement garage area.

3. Background

3.1 The authority issued a building consent (No. 60634) on 2 September 1998, under the Building Act 1991, based on a building certificate issued by the building certifier on 26 August 1998.

3.2 The building certifier carried out the following inspections during construction:

- footings on 8 October 1998 (which passed)
- blockwork reinforcing on 15 October 1998 (which passed)
- drainage and septic tank on 15 October and 17 December 1998 (which passed)
- building pre-lines on 27 January (which noted that insulation was incomplete)
- plumbing and building pre-lines on 23 February 1999 (which passed)
- exterior cladding on 11 August 1999 (which passed).

The inspection summary also notes "final inspection reminder letter sent 15/03/00".

3.3 According to the applicant, the only outstanding item at the August 1999 inspection was the veranda balustrade, which was not completed until later.

[3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3.4 The building certifier ceased to operate as a building certifier on 30 June 2005 without having issued a code compliance certificate.

3.5 It appears that the matter of the code compliance certificate was not followed up until the applicant arranged to sell the property in 2008. According to the applicant, this was refused as the authority:

> ...say that as they have had nothing to do with any of the previous inspections during construction, they will not issue a code of compliance.

3.6 A prospective purchaser, who has since withdrawn from the agreement to purchase and is therefore no longer a party to the matter, commissioned a building consultant ("the consultant") to inspect the house and provide a pre-purchase report. The consultant inspected the property on 5 August 2008 and provided a report to the purchaser dated 7 August 2008. The consultant outlined the features and fittings within the house and drew various matters to the purchaser's attention. The consultant observed dampness and mould on the underside of the particle board flooring below the ensuite bathroom, noting that the ensuite shower curtain allows water to splash onto the adjacent floor, and the presence of a waterproofing membrane under the tiled areas was not known. The consultant concluded:

> The basic house is solid and well built however there are some serious issues with the ensuite and potentially with the bathroom. The house does not have a Code Compliance Certificate and this will cause problems when you go to sell. There are some other less important issues, which need addressing.

3.7 The Department received an application for a determination on 11 August 2008. The Department sought clarification from the applicant on the matters to be determined.

3.8 In an email to the applicant dated 27 August 2008, the authority accepted that the applicant had requested a code compliance certificate for the house, and stated:

> [The authority] declines to issue a code compliance certificate because its only involvement has been to issue the building consent (as a result of receiving a building certificate from [the building certifier]), and has not carried out any inspections on the project.
>
> It should also be borne in mind that the building consent was issued in August 1998, 10 years ago, which raises the durability and liability issues . . .

3.9 The Department received the information required to complete the application on 1 September 2008.

4. The submissions

4.1 The applicant forwarded copies of:

- the standard kitset drawings and specification
- the drawings revised to include the basement garage
- the consent documentation
- the building certifier's inspection summary
- the email correspondence with the authority
- the producer statement for the free-standing fire.

4.2 The authority acknowledged the application, but made no submission.

4.3 Copies of the applicant's submission and other evidence were provided to the authority, which did not respond to the information.

4.4 A draft determination was issued to the parties on 21 October 2008. The draft was issued for comment and for the parties to agree a date when the house complied with Building Code Clause B2 Durability.

4.5 Both parties agreed that compliance with Clause B2 was achieved on 1 September 1999.

4.6 The applicant also responded to the draft, pointing out that the valley flashings referred to in paragraph 6.4.4 were galvanised and the corrosion found was only surface rust.

5. Grounds for the establishment of code compliance

5.1 In order for me to form a view as to the code compliance of the building work, I need to establish what evidence is available and what can be obtained considering that the building work is completed and some of the elements are not able to be cost-effectively inspected. In this case the evidence provided by the applicant consists of the summary of inspections carried out by the building certifier.

5.2 However, the authority does not believe it can rely on the building certifier's reports and so any decision it makes with respect to compliance is limited by what items it is able to inspect.

5.3 I note that the inspection summary indicates that 10 inspections were required for the project, and 9 inspections were carried out and passed by the building certifier. I first need to decide if I can rely on those inspections, particularly in regard to inaccessible building components.

5.4 In the absence of any evidence to the contrary, I take the view that I am entitled to rely on the inspections undertaken by the building certifier. However, before deciding whether or not to rely on the inspections, I consider it important to look for evidence that corroborates the inspection record.

5.5 In this particular case, corroboration comes from the visual inspection of the accessible components by the expert (refer paragraph 6), which can be used to verify whether the building certifier's inspections were properly conducted.

5.6 In summary, I find that the following allows me to form a view as to the code compliance of the building work as a whole:

- The summary of inspections carried out by the building certifier, which indicates satisfactory inspections of the inaccessible components (refer paragraph 3.2).
- Various producer statements and other information, which indicate compliance of certain building elements.

- The expert's report as outlined below.

6. The expert's report

6.1 As mentioned in paragraph 1.4, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the house on 23 September 2008 and supplied a report that was completed on 30 September 2008.

6.2 The expert noted that the drawings from the kit-set house manufacturers showed the house on a flat site without the basement garage. However, I note that the engineer supplied amended drawings at the time of the building consent application.

6.3 The expert noted the construction was generally of good quality, with the block veneer "constructed in a good tradesman like manner with even joints and ventilation provision". However, little or no maintenance had been carried out and some minor defects required attention.

6.4 The building envelope: compliance with E2 External Moisture

6.4.1 The expert noted that the deck slats were hardwood, but he could not confirm the level of treatment of the veranda framing or the treatment of the timber floor joists. The timber was observed to be all in sound condition.

6.4.2 The expert noted that the windows and doors were sheltered beneath the 1800mm deep veranda roof, and had been installed with steel lintels, no head flashings and sloping block sills.

6.4.3 As the house is steel-framed, the expert visually inspected the interior and exterior, including sub-floor spaces, and observed no signs of moisture penetration. Due to the lack of evidence of moisture penetration and the nature of the construction materials, no invasive moisture testing was carried out.

6.4.4 No defects were observed in the wall claddings. However, commenting specifically on the roof cladding, the expert noted that:

- the ridge caps at the hip junctions are poorly fixed and are lifting
- the timber finial over the entry gable is unflashed where it penetrates the ridge flashing
- there is a gap in the flashings at the junction of the entry gable with the fascia
- the entry gable valley gutter flashings are rusting
- a vent pipe through the roof has no cover or bird protection.

6.5 The building's compliance with the remaining Building Code clauses

The expert also assessed compliance with other relevant Building Code clauses, and made the following comments on those clauses relevant to this house:

6.5.1 B1 Structure

The expert inspected the sub-floor spaces and noted no evidence of dampness or other problems. The inspection record notes adequate inspections of the footings and blockwork, and the expert's internal and external visual inspection revealed no evidence of problems. The expert also noted that tanking to the garage retaining wall was visible below the west deck.

However, the expert also noted that the hot water cylinder is inside a cupboard, but has no earthquake restraints.

6.5.2 C1 Outbreak of fire

At the date of his report, the expert noted the lack of a producer statement for the installation of the free standing fire. However, I note that this has now been provided, and the producer statement for the solid fuel heater indicates that the installation meets the requirements.

6.5.3 E1 Surface water

Roof water is collected and disposed of in soak holes beneath downpipes. The expert noted that adequate falls away from the house were provide, and observed no evidence of problems.

6.5.4 E3 Internal moisture

The tanking to the showers could not be inspected, but there was no evidence of leaking detected from observing the interiors of the bathrooms. However, I note that the pre-purchase report notes signs of dampness and mould beneath the ensuite bathroom (refer paragraph 3.6), and there is no evidence of a producer statement for a waterproofing membrane beneath the tiles.

The expert noted that the bath, the vanities and the kitchen sink have well sealed splashbacks, but noted that the laundry tub is not fixed and sealed against the walls.

6.5.5 F2 Hazardous building materials

The expert noted that there are no doors, windows or shower doors that required safety glass.

6.5.6 F4 Safety from falling

The expert noted that the veranda balustrade and the internal stair handrail are adequate.

6.5.7 G1 Personal hygiene, G2 Laundering, and G3 Food preparation

The expert noted that all facilities are in good working order and adequate provision has been made to comply with the requirements.

6.5.8 G4 Ventilation

Requirements for natural ventilation are met, and opening windows are sheltered beneath the deep veranda and able to be secured in an open position.

6.5.9 G7 Natural light and G8 Artificial light

Requirements for natural and artificial light are met, with windows and glazed doors provided to all spaces.

6.5.10 G9 Electricity

The expert noted observed no evidence of problems, although I note that no energy works certificate has been provided.

6.5.11 G12 Water Supplies

The expert noted that satisfactory potable water is supplied from a bore to a settling tank at the eastern boundary, and then reticulated by an automatic pump through a large micro filter to the house. The building certifier's inspection summary indicates that the water supply was tested and passed as satisfactory.

6.5.12 G13 Foul Water, G14 Industrial Liquid waste (onsite effluent disposal)

The expert noted that all fixtures appear to be in good operating condition with no evidence of problems. The building certifier's inspection summary indicates that satisfactory drainage inspections of the septic tank and drainage field, as well as pre-line plumbing inspections, were undertaken.

I note that a calculation for the size of the septic tank was submitted by the drainlayer and approved as part of the building consent documentation. I also note that the as-built drainage plan has been supplied.

6.5.13 H1 Energy Efficiency

The expert viewed the fibreglass insulation within the ceiling space and underfloor foil in the basement and subfloor area. Although the wall insulation could not be seen, the building certifier's inspection summary indicates that satisfactory preline inspections were undertaken, and the record notes "batts in walls & ceilings".

6.6 A copy of the expert's report was provided to the parties on 3 October 2008.

Matter 1: The building envelope

7. Evaluation for code compliance

7.1 Evaluation framework

7.1.1 I have evaluated the code compliance of this building by considering the following two broad categories of the building work:

- The weathertightness of the external building envelope (Clause E2) and durability (Clause B2 in so far as it relates to Clause E2).
- The remaining relevant code requirements.

In the case of this house, weathertightness considerations are addressed first.

7.1.2 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solutions[4], which will assist in determining whether the features of this house are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.

[4] An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way (but not the only way) of complying with the Building Code. The Acceptable Solutions are available from The Department's Website at www.dbh.govt.nz.

- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

7.2 Evaluation of external building envelope for E2 and B2 Compliance

7.2.1 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations[5] (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

7.2.2 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

7.3 Weathertightness risk

7.3.1 In relation to these characteristics I find that this house:

- is built in a medium wind zone
- has an 1800mm deep lean-to veranda extending around upper level walls
- is a simple single storey building with a basement garage at one end
- has block veneer cladding over a drained cavity, with concrete block walls to basement walls
- has steel framing to the walls and roof.

7.3.2 The house has been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting level of risk can range from 'low' to 'very high'. The risk level is applied to determine what claddings can be used on a building in order to comply with E2/AS1. When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 7.3.1 show that all elevations of the house demonstrate a low weathertightness risk rating.

7.4 Weathertightness: discussion

7.4.1 Generally the wall claddings appear to have been installed in accordance with good trade practice and the manufacturer's recommendations, but some areas of the roof cladding have not been satisfactorily completed. Taking account of the expert's

[5] Copies of all determinations issued by the Department can be obtained from the Department's website.

comments in paragraph 6.4.4, I conclude that remedial work is necessary in respect of the following:

- The ridge caps at the hip junctions of the main roof.
- The unflashed timber finial over the entry gable in the veranda.
- The junction of the entry gable with the fascia, with gaps apparent.
- The corroding valley gutter flashings to the entry gable.
- The unprotected top to the vent pipe in the main roof.

7.5 Weathertightness: conclusion

7.5.1 I consider the expert's report establishes that the current performance of the cladding is adequate because it is preventing water penetration into the building at present. Consequently, I am satisfied that the house complies with Clause E2 of the Building Code.

7.5.2 In addition, the building work is also required to comply with the durability requirements of Clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the roof cladding faults on the house are likely to allow the ingress of moisture in the future, the building does not comply with the durability requirements of Clause B2.

7.5.3 Because the faults identified with the roof cladding occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.4.4 will result in the house being brought into compliance with Clauses B2 and E2.

7.5.4 Effective maintenance of claddings is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building applicant. The Department has previously described these maintenance requirements (for example, Determination 2007/60).

Matter 2: Compliance with the remaining Building Code clauses

8. Evaluation for code compliance

8.1 Other Building Code requirements

8.1.1 Taking account of the expert's inspection and comments as outlined in paragraph 6.5, I consider that the following items require attention:

- The lack of earthquake restraints to the hot water cylinder.
- Investigation and verification of a waterproofing membrane beneath the tiles in the bathrooms.
- The lack of sealing of the laundry tub against the walls.

8.2 Conclusion

8.2.1 I consider that the expert's report and comments as outlined in paragraph 6.5 establish that the building work does not comply with Clauses B1 and E3 of the Building Code.

8.2.2 Because the faults identified occurs in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 8.1.1 will result in the building work being brought into compliance with Clauses B1 and E3.

8.2.3 I consider that the expert's assessment of visible components of the building, together with the inspection records and the other documentation, establishes that the building work complies with Clauses C1, E1, F2, F4, and G1 to G8, G12, G13 and H1 of the Building Code.

8.2.4 With respect to compliance with Clause F7 Warning systems, I acknowledge the comments made by the purchaser's consultant about the defects with the smoke alarms installed in the house. I note that while the provision of smoke alarms was not a requirement of the Building Code at the time the building consent was issued, I strongly recommend that these faults be fixed.

9. The appropriate certificate to be issued

9.1 Having found that the building can be brought into compliance with the Building Code, I must now determine whether the authority can issue either a certificate of acceptance or a code compliance certificate.

9.2 Section 437 of the Act provides for the issue of a certificate of acceptance where a building certifier is unable or refuses to issue either a building certificate under section 56 of the former Act, or a code compliance certificate under section 95 of the current Act. In such a situation, a building consent authority may, on application, issue a certificate of acceptance. As outlined in paragraph 3.8, the authority accepts that the applicant has requested a code compliance certificate for this house.

9.3 In this situation, where I have reasonable grounds to conclude that the consented building work can be brought into compliance with the Building Code, I am of the view that a code compliance certificate is the appropriate certificate to be issued in due course.

Matter 3: The durability considerations

10. Discussion

10.1 The authority has concerns about the durability, and hence the compliance with the building code, of certain elements of the building taking into consideration the age of the building work completed in 1999.

10.2 The relevant provision of Clause B2 of the Building Code requires that building elements must, with only normal maintenance, continue to satisfy the performance

requirements of the Building Code for certain periods ("durability periods") "from the time of issue of the applicable code compliance certificate" (Clause B2.3.1).

10.3 These durability periods are:

- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building
- 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
- the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.

10.4 The 9-year delay between the substantial completion of the building work consented in early 1999 and the authority's refusal of a code compliance certificate raises the matter of when all the elements of the building complied with Clause B2. I have not been provided with any evidence that the authority did not accept that those elements complied with Clause B2 at a date in 1999.

10.5 It is not disputed, and I am therefore satisfied, that all the building elements complied with Clause B2 on 1 September 1999, refer paragraph 4.5.

10.6 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.

10.7 I continue to hold that view, and therefore conclude that:

(a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements.

(b) it is reasonable to grant such a modification, with appropriate notification, because in practical terms the building is no different from what it would have been if a code compliance certificate for the building work had been issued in 1999.

10.8 I strongly recommend that the authority record this determination and any modifications resulting from it, on the property file and also on any LIM issued concerning this property.

11. What is to be done now?

11.1 A notice to fix should be issued that requires the owners to bring the house into compliance with the Building Code, identifying the items listed in paragraphs 7.4.1 and 8.1.1 and referring to any further defects that might be discovered in the course of investigation and rectification, but not specifying how those defects are to be

fixed. It is not for the notice to fix to stipulate directly how the defects are to be remedied and the house brought to compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject.

11.2 I would suggest that the parties adopt the following process to meet the requirements of paragraph 11.1. Initially, the authority should issue the notice to fix. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

12. The decision

12.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the house does not comply with Clauses B1, B2 and E3 of the Building Code, and accordingly confirm the authority's decision to refuse to issue a code compliance certificate.

12.2 I also determine that:

(a) all the building elements installed in the building, apart from the items that are to be rectified as described in this determination, complied with Clause B2 on 1 September 1999.

(b) the building consent is modified as follows:

> The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 1 September 1999 instead of from the time of issue of the code compliance certificate for all the building elements, except the items as set out in paragraphs 7.4.1 and 8.1.1 in Determination 2008-107

(c) once the matters set out in paragraphs 7.4.1 and 8.1.1 have been rectified to its satisfaction, the territorial authority is to issue a code compliance certificate in respect of the building consent as amended.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 27 November 2008.

John Gardiner
Manager Determinations