



Determination 2013/043

Regarding the decision to issue a code compliance certificate for a one year old house at 33A Atkinson Road, Titirangi, Auckland



1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties

1.2.1 The parties to the determination are

- the owner of the house, J White (“the applicant”) acting via an agent
- Auckland Council (“the authority”), carrying out its duties as a territorial authority or building consent authority
- C May, the Licensed Building Practitioner who supervised the building work (“the builder”).

1.3 The authority issued a code compliance certificate for the one year old house in 2013. This determination arises because the owner is of the view that the building work did not comply with relevant clauses² of the Building Code (Schedule 1, Building Regulations 1992) when the authority issued the code compliance certificate.

1.4 The matter to be determined³ is therefore whether the authority correctly exercised its powers in issuing a code compliance certificate for the house. In deciding this matter, I must consider whether the areas of concern identified by the applicant comply with the relevant clauses of the Building Code.

¹ The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.dbh.govt.nz or by contacting the Ministry on 0800 242 243.

² 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.

³ Under sections 177(1)(b) and 177(2)(d) of the Act

1.5 Matters outside this determination

- 1.5.1 I note that a prior building consent (No. ABA-2010-1543) was issued to the builder for construction of ‘retention tank and private drainage’ to the undeveloped site; and this work was issued with a code compliance certificate on 17 December 2010. This determination is limited to building work carried out under building consent No. ABA-2011-1050 issued on 9 February 2012 for the construction of the house.
- 1.5.2 The original application for this determination was restricted to the compliance of a timber retaining wall, with additional areas of concern subsequently added to the application. It appears that the matter of the retaining wall is in the process of being resolved between the parties and the applicant has withdrawn that matter; I therefore do not consider the retaining further in this determination.
- 1.6 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Ministry to advise on this dispute (“the expert”) and the other evidence in this matter.

2. The building work

- 2.1 The building work consists of a detached house that is two-storeys in part and is situated on an excavated sloping site in a medium wind zone for the purposes of NZS 3604⁴. The expert has taken the main entry and garage door as facing south and this determination follows that convention.
- 2.2 The part basement to the south is set into the slope of the site, with stairs leading from the main entry to single-storey living areas at the north end of the upper level. The basement extends beyond the face of the upper level, with the roof forming a lean-to against upper walls. A timber retaining wall wraps around deck areas to the north, which are accessible from the living areas.
- 2.3 Construction is generally conventional light timber frame with some specifically engineered elements. Two separate concrete floor slabs to upper and lower levels are connected by a mid-section of framed timber floor that spans between a concrete block retaining wall to the upper level and timber framing above a part height retaining wall to the lower level. The house has timber weatherboards, aluminium windows and profiled metal roofing, with eaves and verges of more than 700mm overall to the 11° mono-pitched roofs.
- 2.4 Walls are clad in bevel backed timber weatherboards fixed through cavity battens and the building wrap into the framing, with metal soakers to corners and scribes to window jambs.
- 2.5 The expert noted no evidence as to the wall framing treatment, although I note that the ‘Timber Treatment Schedule’ in the consent drawings calls for H1.2 treated wall framing. Given the date of framing installation in 2012, I consider that the wall framing of this house is likely to be treated to a level that will provide resistance to fungal decay.

⁴ New Zealand Standard NZS 3604:1999 Timber Framed Buildings
Ministry of Business,
Innovation and Employment

3. Background

3.1 The authority issued a building consent (No. ABA-2011-1050) to the builder on 9 February 2012 under the Building Act 2004. The authority carried out various inspections during construction in 2012, including:

- foundations in March and April 2012
- concrete block retaining walls in April 2012
- concrete floor slabs and 'prefloor' plumbing in April 2012
- framing in May and June 2012
- preline building and plumbing in June and July 2012
- postline in July 2012
- drainage in August 2012.

3.2 The authority carried out the first final inspections in November 2012, with plumbing and building re-inspections on 4 December 2012. Following a site meeting on 13 December 2012 involving 'prospective owners consultant', a final inspection 'passed' on 20 December 2012, with the inspection summary noting 'all items from 13/12/12 site meeting fulfilled, OK for [code compliance certificate], all documentation received'. The authority issued a code compliance certificate for the house on 17 January 2013.

3.3 The application

3.3.1 On 7 March 2013, the Ministry received an application for a determination about the compliance of the exterior timber retaining wall and sought the consent documents and other information from the parties.

3.4 Subsequent correspondence

3.4.1 In a letter to the Ministry dated 12 March 2013, the applicant provided the consent records for the house together with photographs of some additional areas of concern.

3.4.2 The applicant asked for the following nine areas of concern to be included within the determination (in summary and using same numbering):

1. Screws popping from wall and ceiling linings
2. Bathroom linings apparently not suitable for wet areas
3. Gaps above window head flashings
4. Stormwater access grates not removable for cleaning
5. Overflow from gutter downpipes able to flood inside house
6. Cracks in some weatherboards
7. Unsealed flashings and barge boards
8. Exposed and unprotected electrical cable
9. Electrical cable and water pipe close together within same trench.

3.4.3 The applicant attached rainfall records over the dates moisture levels were measured in the framing; noting that framing did not pass on 27 June 2012 but did pass on 2 July 2012 despite rain over the intervening period, and concluding that screw popping is therefore likely to relate to varying moisture content in the framing.

3.5 Discussions followed between the applicant, the engineer, the builder and the authority about the timber retaining wall and the additional areas of concern. It

appears that some additional work to the retaining wall was agreed and a drawing for an additional wall was prepared by the engineer.

- 3.6 In a letter to the Ministry dated 14 May 2013, the applicant withdrew the matter of the retaining wall from the application for the determination. However, the applicant asked for the determination ‘to continue for all the other issues and how these are best to be remedied’.

4. The submissions

- 4.1 The applicant made no submission. Information accompanying the initial application was restricted to the timber retaining wall, but copies of the following were subsequently forwarded:

- the consent drawings
- the building consent
- the inspection summary
- the code compliance certificate dated 17 January 2013
- various photographs and other information.

4.2 The authority’s submission

- 4.2.1 The authority’s submission was received on 3 May 2013 and acknowledged that there were some defects in the exterior timber retaining wall; noting that these were being addressed retrospectively with the builder and the engineer (see paragraph 3.5). In regard to bathroom linings, the authority considered that waterproof paint applied to plaster board complied with the Acceptable Solution for Clause E3 internal moisture. In regard to the other areas of concern raised by the applicant, the authority considered these to be workmanship issues rather than compliance issues.

- 4.3 The authority forwarded a CD-Rom, entitled ‘Property File’, which contained some additional documents pertinent to this determination including

- the consent documentation
- the inspection records
- various certificates, producer statements, warranties and other information.

- 4.4 Copies of the submissions and other evidence were provided to each of the parties.

- 4.5 A draft determination was issued to the parties for comment on 26 June 2013.

4.6 The applicant’s response to the draft

- 4.6.1 The applicant responded to the draft determination in a letter to the Ministry dated 1 July 2013. The applicant did not accept the draft, and made the following comments (in summary):

- The height of the study partition is more than 3m with only a single door trim stud, and double studs should be used for walls of such height. The pre-cut framing would have used single studs and will therefore not be code-compliant.
- Popping screws to linings are most likely to relate to elevated moisture levels in the framing as this started as temperatures rose during the summer and popping is ‘widespread both vertically and horizontally throughout the house’.

4.6.2 In response to the above, I note:

- In paragraph 6.1.2 I state that further investigation is needed for the study partition as outlined. Should that investigation confirm that the partition does not comply with Clause B1, then proposals for rectification should be prepared and considered.
- I have considered the possibility of screw popping resulting from varying construction moisture levels leading to post-lining framing movement. While this may have contributed to popping, I take the view that any significant movement would have also resulted in further signs such as peaking and cracking at nearby lining joints. I therefore concur with the expert and the authority that the major cause of the screws popping is most likely to be the lack of workmanship when fixing the linings.

4.7 The authority's response to the draft

4.7.1 In an email to the Ministry dated 4 July 2013, the authority stated that it had 'no significant concern with the decision' in the draft determination. However, the authority sought further clarification from the Ministry in regard to:

...whether or not the bathrooms in question have been constructed in accordance with the acceptable solution E3/AS1 and if not in which respect. Compliance with the acceptable solution effectively means compliance with the building code.

4.7.2 The authority considered this to be important as it 'may be constrained by the acceptable solution' when assessing building work for compliance with the performance requirements of Clause E3 of the Building Code. I address this matter in paragraph 6.2.

5. The expert's report

5.1 As mentioned in paragraph 1.6, I engaged an independent expert to assist me. The expert is a member of the New Zealand Institute of Building Surveyors and inspected the house on 13 May 2013, providing a report completed on 8 June 2013. A copy of the report was provided to the parties.

5.2 General

5.2.1 The expert noted that the scope of his investigation was limited to the nine areas of concern identified by the applicant and to provide an assessment of the extent to which these areas meet the requirements of the Building Code.

5.2.2 The expert described the construction quality as 'variable' and noted that, with regard to the matters to be investigated, the house generally accorded with the consent drawings, except for

- lowered ceiling over study omitted, with wall extending to skillion roof
- ends of window head flashings sealed in lieu of stop ends.

5.3 The assessed areas

5.3.1 The expert investigated the list of concerns identified by the applicant; commenting on these as shown Table 1 (in summary):

Table 1: The expert's comments

Area of concern		Expert's comments
Clause E1		
4)	Cesspit grates not removable	The grates can now be easily removed.
5)	Gutter and downpipes sizing	Individual gutters serve limited roof areas and are sufficient. Roofs served by six separate downpipes – each sufficiently large to deal with roof areas. Gutter guards likely to reduce water volume in gutters during very heavy rain
Clause E2		
3)	Joinery head flashings	Some flashings lack sealed ends. 10mm gap above head flashings does not affect compliance.
6)	Cracks in weatherboards	No cracks to weatherboards observed.
7)	Roof flashings	Probable source of original leak now satisfactorily repaired.
Clause E3		
2)	Bathroom linings	Ensuite bathroom now has shower door installed to prevent water splash from shower. Hinged door to main bathroom tub allows water to splash over bath edges and wet the lining. The door hinge mechanism also allows a significant amount of water past the junction. The basement bathroom has a walk-in shower, which also allows water splash onto adjacent linings. The water-based paint to linings is unlikely to withstand continual water splash and will allow water vapour to penetrate into and deteriorate the standard plasterboard linings.
Clause G9		
8)	Unprotected power cable	The exposed cable shown in the applicant's photos is now buried and a warning label has been installed.
9)	Power cable and water pipe close together in same trench	Services are able to be run within same trench providing they are separated and power cable is physically protected and marked. (I note that the energy works certificate should certify the compliance of this work.)

5.3.2 The expert considered that item 1 in the list (the screw fixings popping) was workmanship-related and did not appear to affect code compliance.

5.4 Other concerns

5.4.1 The expert also commented on some other areas he observed during his investigation, although these had not been included in the list of concerns put by the applicant.

5.4.2 In regard to Clause E1 Surface Water, the expert investigated the two main cess pits and noted:

- the cess pits drain slowly and not fully
- silt has accumulated in the cess pit outside the garage door
- the resting water level was above the level of the underground outlet

- the underground outlet positions suggested that drains flow uphill
- the cess pits may be more prone to blocking and therefore surface flooding.

5.4.3 In regard to Clause E2 External moisture, the expert noted:

- soil is built up and in contact with some lower weatherboards, which will lead to deterioration and moisture penetration
- there is no visible ventilation to the drained cavity above the concrete block wall to the lower west wall
- some pipe penetrations are not sufficiently sealed
- the top of the meter box is not sufficiently weatherproofed
- sealants to some roof flashings rely on sealants for waterproofing and will require maintenance to ensure continuing weathertightness.

5.4.4 The expert was also asked to look at horizontal cracks to the plasterboard to the internal wall between the upper hall and study. The expert noted:

- the framed ceiling to the study shown in the consent drawings has not been installed, resulting in the partition extending to the skillion roof
- the partition is more than three metres high, with the doorway opening trimmed with a single stud and horizontal joins to the plasterboard in line with the doorway head
- the increased flexibility resulting from the lack of the study ceiling framing, the single trim stud at the doorway, and the plaster board joins in line with the door head, has resulted in cracking when the wall flexes.

5.4.5 The expert also noted a low timber retaining wall in the subfloor area, which appeared to support a surcharge from the house foundations; and assumed that confirmation from the engineer had been provided as required in the authority's inspection summary.

5.5 The expert's conclusions

5.5.1 The expert considered that a 'full and carefully detailed maintenance manual' should be prepared to identify all the regular maintenance and routine replacement required for the elements in the house.

5.5.2 The expert also noted the distinction between code compliance and workmanship and summarised his conclusions on the identified areas of concern, together with additional items observed during his investigation. I have taken the expert's opinions into account when reaching my conclusions in paragraph 6.1.1, Table 2.

5.6 Responses to the expert's report

5.6.1 The applicant responded to the expert's report in a letter to the Ministry dated 19 June 2013, which included the following comments (in summary):

- The high ceiling to the study was present when the house was purchased and fittings are planned that depend on the current ceiling heights. Lowering the ceiling is therefore not an option.
- Weatherboard cracks cannot be seen at present as they have been sealed, but these may increase over time and affect weathertightness.

- Water pools in valleys above roof flashings, with the only protection ‘a smear of sealant’, and roofing is already showing rust signs.
- The cesspits failed to discharge runoff during the last heavy rains, resulting in surface flooding.
- Past gutter overflows may have been caused by blockages; although this has since been cleared one section continues to overflow.

5.6.2 The authority responded to the expert’s report on 2 July 2013, including the following comments (in summary):

- The nail popping is most likely to be workmanship.
- The installation of ceiling framing to the study was overlooked during construction, and needs further investigation.
- A maintenance manual would be valuable to ensure proper maintenance.
- Stormwater cesspits are designs with a trapped outlet to ensure silt does not enter the drainage system.
- A building consent cannot be refused if details meet the Acceptable Solution, which is the case with the bathroom linings. (Refer also paragraph 6.2)

5.6.3 I have considered the responses to the expert’s report and have amended the determination as I consider appropriate.

6. Compliance of the building work

6.1 Discussion

6.1.1 Taking into account the expert’s comments and the applicant’s photo file, Table 2 summarises my conclusions on the areas of concern and the additional items identified by the expert; referring also to relevant code clauses and related paragraphs within this determination:

Table 2: Conclusions on compliance

Items	Expert	My conclusion	Clauses	Para. No.	
Applicant’s list					
1	Screw fixings popping	Workmanship, not compliance issue	Adequate	5.3.2	
2	Bathroom linings – softening from water splash	Ensuite now OK Other bathrooms suffer water splash	Remedial work needed to main bathroom and basement shower room.	E3, B2 5.3.1 Table 1	
3	Joinery head flashings:		E2, B2	5.3.1 Table 1	
	Large gap above flashing	Workmanship, not compliance issue			Adequate
	Sealant missing to some ends	Most sealed			Sealant required to ends of some head flashings.
4	Cesspit grates not removable	Now rectified	Adequate	E1 5.3.1 Table 1	
5	Gutter and downpipes sizing	Need maintenance to keep clear	Adequate	E1, B2 5.3.1 Table 1	

Items		Expert	My conclusion	Clauses	Para. No.
6	Cracks in weatherboards	No cracks observed	Adequate if maintained	E2, B2	5.3.1 Table 1
7	Roof flashings	Source of leak now rectified.	Adequate	E2, B2	5.3.1 Table 1
8	Unprotected power cable	Now rectified	Adequate	G9	5.3.1 Table 1
9	Power cable and water pipe close together in same trench		Adequate (assuming energy works certificate was submitted)	G9	5.3.1 Table 1
Other observed items					
Slow draining cesspits and drainage falls		Require monitoring for blockages	Adequate (if maintained)	E1	5.4.2
Ground clearances		Soil too close to cladding	Requires remedial work	E2, B2	5.4.3
Lack of cavity ventilation		Requires investigation	Requires remedial work	E2, B2	5.4.3
Pipe penetrations		Some unsealed penetrations	Requires remedial work	E2, B2	5.4.3
Meter box flashings		Requires investigation	Requires remedial work	E2, B2	5.4.3
Sealants to roof flashings		Will require maintenance	Adequate if maintained	E2, B2	5.4.3
Cracked plasterboard to hall/study partition		Omitted study ceiling increases flexibility of wall	Requires further investigation	B1	5.4.4
Retaining wall to subfloor		May carry foundation surcharge	Requires confirmation that engineer approved wall.	B1	5.4.5

6.1.2 Taking account of the above and the additional work carried out to date, I consider that the following areas require further investigation and/or rectification:

- In regard to Clause B1, investigation into the adequacy of
 - the framing to the hall/study partition
 - the subfloor retaining wall.
- In regard to Clauses E2 and B2
 - inadequate ground clearances to weatherboards in some areas
 - lack of cavity ventilation to one area of west cladding
 - inadequate sealing of pipe penetrations and meter box.
- In regard to Clauses E3 and B2
 - inadequate protection from water splash to main bathroom and basement shower room
 - inadequate junction of the hinged screen to the bath shower with the wall.

6.2 Compliance with the Acceptable Solution for Clause E3; E3/AS1

- 6.2.1 I acknowledge the authority's comment in with respect to E3/AS1 (refer paragraph 4.7). In response I note that the tiled shower to the. I note the following:
- “Watersplash” in the context of E3/AS1 means the occasional incidence of water on wall or floor surface adjacent sanitary fixtures; in my view it does not include continual wetting every time a sanitary fixture is used.
 - The basement shower and shower room does not follow the solutions given in E3/AS1 and must therefore be considered an alternative solution.
 - The bathroom linings are standard plasterboard finished with a water-based paint that is likely to resist the occasional incidence of watersplash. I do not consider it is a surface that is sufficiently impervious to resist continual wetting as above.
 - In less than 3 months after completion, where shower water has fallen against painted surfaces signs of softening indicated that moisture was entering the plasterboard linings.
- 6.2.2 Paragraph 3.3.1 of E3/AS1 says that ‘semi-gloss or gloss coating[s]’ are not to be used within a 1500mm radius of the shower rose. In this case the basement shower screen only partially encloses the shower cubicle and the plasterboard wall adjacent the tiled wall opposite the shower rose is well within the 1500mm radius: the finish installed to this section of wall does not meet the Acceptable Solution.
- 6.2.3 With respect to the main bathroom: the expert has noted that the wall adjacent the bath was ‘subject to watersplash every time the shower over the bath is used’ and when the shower over the bath was run ‘the plasterboard immediately adjacent the bath was wet to touch and there was water on the floor’. I do not consider the presence of this amount of water falling on a wall surface very time the shower is used can be considered “watersplash” as considered in E3/AS1.
- 6.2.4 For these reasons I am of the view that the bathrooms do not comply with the Acceptable Solution E3/AS1 in regard to the linings adjacent to the showers and the junction between the bath shower screen and the wall.

6.3 The issue of the code compliance certificate

- 6.3.1 In terms of section 94(1)(a) of the Act, an authority can only issue a code compliance certificate if it is satisfied, on reasonable grounds, that the building work complies with the building consent.
- 6.3.2 The expert has identified variations from the consented plans (refer paragraphs 5.2.2, 5.4.4 and 5.4.5), being the omission of the lower ceiling over the study and the impact on the framing to the hall/study partition, and the addition of the subfloor retaining wall: both of which require investigation to determine whether compliance with Clause B1 has been achieved. In addition to this there are matters of non-compliance related to Clauses B2, E2 and E3 as summarised in paragraph 6.1.2 above.
- 6.3.3 Taking into account that the changes from the consented plans and the items of non-compliance would have been evident during the authority's inspections, I do not consider the authority had reasonable grounds on which to issue the code compliance certificate.

7. The decision

7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that

- the external building envelope does not comply with Clauses B2 and E2 of the Building Code
- the wet areas do not comply with and Clauses B2 and E3 of the Building Code
- I have insufficient evidence to determine whether the hall-to-study partition and the subfloor retaining wall comply with Clause B1 of the Building Code

and accordingly, I reverse the authority's decision to issue a code compliance certificate for building consent No. ABA-2011-1050.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 29 July 2013.

John Gardiner
Manager Determinations and Assurance

Appendix

A1.1 The relevant sections from Building Code Clause E3 include:

Performance

- E3.3.4 Wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.
- E3.3.6 Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

A1.2 The Acceptable Solution E3/AS1 includes:

Definitions

Impervious That which does not allow the passage of moisture.

3.0 Watersplash

3.1 Lining Materials

3.1.2 Walls

The following linings and finishes to walls satisfy the performance for *impervious* and easily cleaned surfaces in areas exposed to watersplash:

- b) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints and bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use.
- f) Sheet linings finished with vinyl coated wallpaper, or semi-gloss or gloss coating.

3.2.2 Joints between fixtures and wall linings

Where baths, basins, tubs or sinks abut *impervious* linings, the joint between *fixture* and lining shall be sealed to prevent water penetration to *concealed spaces* or behind linings.

3.3.1 Showers

All shower spaces shall have impervious floor and wall finishes. Lining materials and finishes listed in Paragraphs 3.1.1 and 3.1.2 satisfy this requirement except that within shower enclosures or a 1500 mm horizontal radius from the shower rose where there is no shower enclosure...

- a) The following materials shall not be used:
 - i) ...
 - ii) Sheet linings finished with vinyl coated wallpaper, or semi-gloss or gloss coating.