



Determination 2012/008

The issue of a notice to fix in respect of 14-year-old additions and alterations to a house at 17 Kinross St, Blockhouse Bay.



1. The matter 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, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department.

The parties to the determination are

- the owners, M and A Nyemetz (“the applicants”)
- Auckland Council² (“the authority”), carrying out its duties and functions as a territorial authority or building consent authority.

1.2 This determination arises from the authority’s decision to issue a notice to fix because it was not satisfied that the additions and alterations to the house complied with certain clauses³ of the Building Code (First Schedule, Building Regulations 1992). The authority’s concern relates primarily to the weathertightness of the additions to the house and of the stand alone garage.

¹ The Building Act 2004, the Building Code the Compliance Documents, past determinations, and guidance documents issued by the Department are available from the Department’s website at www.dbh.govt.nz or by contacting the Department on 0800 242 243.

² The building consent was issued and inspections undertaken by Auckland City Council which was later transitioned into the Auckland Council. The term authority is used for both

³ 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.

1.3 The matter to be determined⁴ is therefore whether the authority was correct in its decision to issue a notice to fix for the house. In deciding this, I must consider:

1.3.1 Matter 1: the external building envelope

Whether the external cladding to the house and stand alone garage (“the cladding”) complies with Clauses E2 External Moisture and B2 Durability of the Building Code. The cladding includes the components of the systems (such as the wall claddings, the windows, the roof claddings and the flashings), as well as the way the components have been installed and work together, including junctions with existing building work. I consider this in paragraph 6.

1.3.2 Matter 2: the other code clauses

Whether the house and stand alone garage comply with the other relevant Building Code clauses identified in the the notice to fix: B1 Structure, C1 Outbreak of Fire, F7 Warning Systems, G12 Water Supply, G13 Foul Water and H1 Energy Efficiency.

1.4 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”), and other evidence in this matter.

2. The building work

2.1 The dwelling is located on a sloping site, in a high wind zone and corrosion zone C in terms of NZS 3604⁵. The original 1956 dwelling was a single storey. Records indicate a stand alone garage was erected around 1964. The building work to which this determination relates was undertaken in 1997 and 1998 comprises the stand alone garage and two additions to the existing dwelling.

The first addition and stand alone garage

2.2 The first addition was a single storey addition to the north side of the dwelling and a separate free standing garage. The addition to the house is founded on timber bearers and joists. The roof is asphalt shingle over ply, with a 25° pitch. Exterior walls are clad in fibre-cement sheet which are direct fixed to the framing over bitumen impregnated paper building wrap, with flush-finished joints and spray applied texture coating. Aluminium joinery has been used throughout.

2.3 From the information provided it appears an existing double garage was re-sited. The free standing garage is founded on concrete foundations. It has concrete masonry walls on the north and east side and timber framed walls on the south and west walls. The roof is clad in asphalt shingles.

The second addition

2.4 The second addition consists of a two-storey addition to the south side of the house; comprising a front entry, two bedrooms (one on each level), bathrooms on each level, a garage with internal access and a lounge above the garage. The upper level is cantilevered beyond the external walls of the garage and provides cover to the entrance to the house.

2.5 This second addition uses the same building materials as for the first addition, but the foundations are part concrete foundations and ground slab and part timber piles.

⁴ Under sections 177(1)(b) and 177(2)(f) of the Act

⁵ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.6 I note that the plans for the second addition indicate that the fibre-cement board is to match existing. From this I conclude that the original dwelling was not re-clad (refer paragraph 3.3). However, I assume that the texture plaster coating was applied to the original dwelling at the time the additions were being plastered.

Timber treatment

- 2.7 The expert noted that the wall framing at the cut out made in the garage was not marked as to timber treatment and was likely to be untreated kiln dried radiate pine. The plans for the additions also specify kiln dried timber. I consider the wall framing of the additions and the stand alone garage to be untreated.

3. Background

- 3.1 At some time in June or July 1997, the authority issued building consent number AC/97/5366 for the addition and re-siting of the garage, under the Building Act 1991.
- 3.2 Building work commenced in July 1997 and ten inspections were undertaken for the house and garage.
- 3.3 On 14 January 1998 the authority issued building consent number AC/97/11486 for the second addition and re-clad. Building work commenced in January and eight inspections of the building work were undertaken, the last of which being the plumbing pre-line that failed. The inspection record notes 'wastes were to be tested'.
- 3.4 It appears that no further inspections were undertaken until 28 November 2006, when a final inspection was carried out. That inspection failed, and on 8 February 2007 the authority wrote to the applicants explaining that the building work did not comply with the Building Code in a number of respects and issued a notice to fix, no. 2626 dated 21 February 2007, in respect of both consents. The list of items in the notice to fix is referenced in paragraph 5.4.1.
- 3.5 It appears in response to the failure of the final inspection, the applicants commissioned a moisture detection report. The report, dated 18 June 2007, indicated a number of elevated moisture readings. I have seen no correspondence between the applicants and the authority in respect of this report, and there is no indication of any further investigation or remedial work being undertaken.
- 3.6 An application for a determination was received by the Department on 1 September 2011.

4. The submissions

- 4.1 The applicant forwarded copies of:
- the notice to fix
 - some of the consent documentation
 - the report prepared by the company commissioned to investigate the weathertightness of the building work.
- 4.2 On 5 September 2011 the Department sought clarification from the authority as to the status of the 2007 notice to fix. The authority confirmed that 'the notice is still applicable to the building', noting that there had been no response from the

applicants by way of a scope of works to address the issues identified in the notice. The authority also provided a copy of the property file on CD ROM.

- 4.3 A draft determination was issued to the parties on 19 December 2011. Both parties accepted the draft without further comment.

5. The expert's report

- 5.1 As mentioned in paragraph 1.4 I engaged an independent expert, who is a Registered Architect⁶, to assist me. The expert visited the house on 20 and 29 September 2011 and furnished a report dated 23 September 2011. A copy of the report was provided to the parties on 3 October 2011.

5.2 General

- 5.2.1 The expert observed the following differences between the consented plans for the second addition (AC/97/11486) and what was built:
- internal walls had been installed in the original dwelling with the effect of splitting the house into two units
 - an additional kitchen had been installed
 - the garage level toilet had been expanded and fitted out as a shower room/laundry
 - the column shown outside the entrance had been omitted.
- 5.2.2 The expert noted that no drawings of the consented plans for the first addition and stand alone garage were provided and therefore he was unable to make any assessment as to variations from the consented plans.
- 5.2.3 In respect of the exterior to the house the expert noted that the cladding was reasonably straight and true and that some repair work to cracks had been carried out in 2008 with a few cracks remaining. There were no signs of discolouration or other signs of premature deterioration. The expert also observed that penetrations had been adequately sealed

5.3 Moisture levels

- 5.3.1 The expert inspected the interior and exterior of the house and observed the following indications of moisture ingress:
- though most of the internal plasterboard lining and trim was flat and free from mould, in some areas the skirting boards were discoloured and filler over plasterboard fixings had blown
 - on the western side a section of the soffit was stained and there was a patch of mould. The framing and top of the joist below the corner were also decayed. The expert was of the view that this might have been caused from a leak through the defective sealing of the mitre above the corner, however he noted that further investigation would be required to definitively establish the cause of water ingress.

⁶ Registered Architects are under the Registered Architects Act 2005 are treated as if they were licensed in the building work licensing class Design 3 under the Building (Designation of Building Work Licensing Classes) Order 2010.

- 5.3.2 In regards to the stand alone garage the expert observed:
- failure to the internal paint on the north and east walls
 - high (non-invasive) moisture content readings adjacent to the garden door.
- 5.3.3 Non-invasive moisture content readings were taken above and below windows and doors of the house and at bottom plate level. Whilst most of the readings were low and medium, some high readings were recorded.
- 5.3.4 The expert took invasive moisture readings in locations where moisture detection probes had been installed (refer paragraph 3.5) and at two additional locations. Elevated moisture content readings were found at the following locations:
- House*
- East elevation
- southeast corner, bottom plate 22%
 - northeast end of garage door, at bottom plate 22%
 - northeast corner, bottom plate 24%
- South elevation
- southeast corner, bottom plate 23%
 - below window southwest corner, bottom plate 22% and 25%
 - below window mid point, bottom plate 23%
- West elevation
- northwest corner, floor level 24%
 - below northern lounge window, floor level 20%
 - below lower level bedroom, bottom plate 20%
 - northeast corner of door to garage, bottom plate 24%
 - below northwest corner of garage window, bottom plate 22%
- North elevation
- northeast corner, bottom plate 38%
 - northeast corner lounge doors, bottom plate 52%
 - northwest corner lounge doors, bottom plate 20%
 - northwest corner, bottom plate 23%
- 5.3.5 I note that moisture readings above 18%, or which vary significantly, generally indicate that moisture is entering the structure and further investigation is needed; and that readings of 40% indicate that the timber is saturated and decay will be inevitable over time.
- 5.3.6 The expert also made a cut out in the south wall of the internal garage to take a sample from the bottom plate. The expert noted that the sample was soft and crumbled between the fingers as a result of advanced decay. The moisture content

reading for the sample was 100%. The expert was of the view that the bottom plate throughout the garage and much of the north end is likely to be in a similar condition.

5.4 Notice to fix

5.4.1 The expert provided comments in respect of the items listed in the notice to fix. These are summarised in the following table:

	Notice to fix particular of contravention	Comment
2.1(a)	Council could not confirm installation of vertical or horizontal control joints.	Horizontal control joints not required. There were no vertical control joints or relief joints. Vertical control joints required.
2.1(b)	Council could not confirm if a 6mm gap had been installed between foundation wall and cladding.	Fibre-cement sheet fixed close to foundation blocks
2.1(c)	Junction between window head flashing and bottom edge of cladding to be either unsealed or gap provided. Inseal strip required to seal back edge of sheet.	At the entrance door and the family room door the fibre-cement cladding above the joinery is fixed tight to head flashing without a gap. A gap not required by manufacturer at the time of construction.
2.1(d)	No sill flashings installed and junctions between bottom edge of window joinery and the wall cladding had been sealed.	Sill flashings were not required by manufacturer at the time of construction.
2.1(e)	Garage door and doors to north elevation do not have head flashings.	These doors are all close to the soffit and are sheltered by eaves with overhangs of 500mm – 1600mm.
2.1(f)	Window head flashings do not extend 30mm past the edge of the aluminium joinery.	With the exception of the kitchen window, all others overlap 30mm.
2.1(g)	Council could not confirm if the sides of the doors and windows have been sealed.	The jambs and sills were a close fit to the fibre-cement but no evidence of either a compressible foam strip or sealant between the back of the frames and the cladding. A fillet of sealant visible at the edge of the windows. Contrary to manufacturer's specifications at time of construction.
2.1(h)	Minimum clearance of 50mm between roof and wall cladding has not been achieved.	The junction of the lower level asphalt shingle roof with the wall cladding was fitted with a butyl rubber apron flashing. A stepped flashing was used on the sloping section and a stop end was formed at the bottom. However clearance to the base of the cladding was 15mm and nails were driven through the top shingle and flashing.

		No evidence of failure despite departure from good practice.
2.1(i)	Inadequate clearances between cladding and paved and unpaved surfaces.	The bottom of the fibre-cement cladding was close to (less than 30mm), or below the paving or soil level on all sides of the house. There was evidence of decay in the bottom plate to the internal garage.
2.1(j)	Cladding overhangs greater than 50mm.	No evidence that this had caused failure.
2.1(k)	Evidence of water ingress in northeast corner of stand alone garage.	Failure to the internal paint on the north and east walls and high moisture content readings indicate moisture ingress.
2.1(l)	Stand alone garage masonry wall had not been sealed.	Expert advised by the applicant that the blockwork had been recently sealed.
2.2(a)	Council concerned that cracks in cladding would lead to water ingress.	Most cracks had been repaired, the remaining three, in the absence of any other defects could be repaired as maintenance.
2.2(b)	Some of the subfloor fixings were corroded.	Hold downs and bearer nail plates that were corroded require replacement.
2.2(c)	Some areas where Council were not satisfied that plumbing and drainage work complied.	Unsure what non-compliance was being referred to.
2.2(d)	Hold down fixings to the bottom plates of the stand alone garage are inadequate.	No evidence of structural failure during the uplift loads that had been experienced since construction.
2.3(a)	All penetrations to be adequately sealed or flashed.	All penetrations have been adequately sealed.
2.3(b)	Junctions between different cladding types need to be flashed.	No flashing had been installed where the timber retaining wall abuts the cladding.
2.3(c)	Some downpipes had inadequate clip support and some spreaders had not been installed.	Spreader required on the west side.
2.3(d)	Council could not confirm that the retaining walls are discharging to the approved stormwater drain.	No evidence of inadequate drainage such as distortion or prolonged weeping.
2.3(e)	Areas where the subfloor insulation is inadequate.	The expert noted areas where there were 100mm gaps in the reflective floor "insulation".
3.0(a)	Council noted building work had been undertaken that created two independent living spaces. An additional kitchen had been installed.	Internal walls and a second kitchen were installed. House appears to have been split into two separate units.
3.0(b)	Paved area to the west of the stand alone garage is greater than indicated on the consent plans.	As-built drawings required.
3.0(c)	100mm square post to the exterior of the front entry area had been omitted.	The roof cantilever had not sagged suggesting that it might have performed adequately. Assessment

		by an engineer required.
3.0(d)	Internal changes that are not reflected in the consent plans.	As-built drawings required.
3.0(e)	Building consent plans do not indicate inclusion of laundry or hot water cylinder.	No comment.
4.0(a)	Smoke detectors have not been installed.	Smoke detector not requirement at time of construction but recommended.
4.0(b)	No handrail has been fitted to the internal stairs.	Handrail has now been fitted.
4.0(c)	Not all drains and gutters have been kept clear of debris.	The main roof gutter on the south side was clear at the time of inspection.

5.5 In addition to those items identified on the notice to fix, the expert noted:

- The roof edge flashing above the gutter was corroded in places.
- The height of the membrane upstand behind the cladding was not able to be confirmed.
- The presence of vertical hairline cracks (in the cladding) in line with the lower floor windows and doors on the western elevation was evidence of incorrect sheet layout.
- There was some cracking to the cladding on the western elevation.
- The timber retaining wall lacked an end post.

5.6 Whilst the expert did not carry out a full inspection of the water supply or foul water system he observed that the operations of both appeared to be adequate.

Matter 1: The external envelope

6. Weathertightness

6.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).

6.2 Weathertightness risk

6.2.1 The house has the following environmental and design features which influence its weathertightness risk profile:

Increasing risk

- the cladding is fixed directly to the framing
- external wall framing timber is untreated
- the house is in a high wind zone.

Decreasing risk

- the envelope has low complexity
- there are eaves that provide some shelter to the cladding on all elevations

- 6.2.2 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.2.1 show the house has a low weathertightness risk rating. If details shown in the current E2/AS1 were adopted to show code compliance, a drained cavity would not be required for all elevations.

6.3 Weathertightness conclusion

- 6.3.1 I consider the expert's report establishes that the performance of the external envelope of the house is not adequate because it is allowing water penetration through the cladding and there is evidence of moisture penetration in the framing. Consequently, I am satisfied that the external envelope does not comply with Clause E2 of the Building Code.
- 6.3.2 I also consider that further investigation is necessary, including the systematic survey of all risk locations, to determine causes and the full extent of moisture penetration, timber damage and the repairs required. The extent of any damage to the structural framing needs investigation to determine the building's continuing compliance with Clause B1.
- 6.3.3 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 cladding faults will allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.
- 6.3.4 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 owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

Matter 2: Other code clauses

7. Other code clauses

- 7.1 The notice to fix listed non-compliance with B1 Structure, C1 Outbreak of Fire, F7 Warning Systems, G12 Water Supply, G13 Foul Water and H1 Energy Efficiency.
- 7.2 On the basis of the experts investigation (refer paragraph 5) I conclude that the building work does not comply with Clause H1 in respect of the inadequate subfloor insulation.
- 7.3 I am of the view that an assessment of the roof cantilever to the front entry area is required by an engineer, and accordingly there is currently insufficient evidence to establish on reasonable grounds that the house complies with Clause B1 Structure.
- 7.4 Although the notice to fix issued by the authority lists Clause C1 Outbreak of Fire in the particulars of contravention or non-compliance, I note that no item on the notice relates to this clause and the authority's reference to "two separate spaces" indicates that the clause referred to should be C3 Spread of Fire.

- 7.5 It appears that the current floor plan has had the effect of creating two household units. The authority will need to consider whether this constitutes a change of use under section 114 of the Act and the implications of such a change of use on the compliance of the building with the Building Code under section 115. I therefore consider there is insufficient information to establish compliance with Clause C3 Spread of fire.
- 7.6 I note that whilst the expert did not carry out a full inspection of the water supply or foul water system, he observed that the operations of both appeared to be adequate. I therefore consider that the building work complies with Clauses G12 Water Supply and G13 Foul Water.
- 7.7 Taking into account the expert's comments, the following table summarises my conclusions on items listed in the notice to fix number 2626 (with code clauses in brackets):

Notice to fix/expert's report		My conclusions	Paragraph references
Item	Summarised requirement		
2.1(a)	No horizontal joints required, vertical control joints required.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.1(b)	Increased gap required between cladding and foundation wall.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.1(c)	Cladding tight to flashing.	Adequate (E2)	5.4.1
2.1(d)	No sill flashings and junctions not sealed, but not required at time of construction.	Adequate (E2)	5.4.1
2.1(e)	No head flashings to front entrance and family room door, but no evidence of failure.	Adequate (E2)	5.4.1
2.1(f)	Flashings generally fitted and no evidence of failure.	Adequate (E2)	5.4.1
2.1(g)	No inseal or silicon sealant used but no evidence of failure.	Adequate (E2)	5.4.1
2.1(h)	Departure from good practice and E2/AS1 but no evidence of failure.	Adequate (E2)	5.4.1
2.1(i)	Inadequate clearances aligning with elevated moisture levels.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.1(j)	While evidence of excessive overhang, no evidence of failure.	Adequate (E2)	5.4.1
2.1(k)	Expert noted that internal paint finish had failed but owners advised that concrete wall had recently been sealed.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.1(l)	Owners to provide evidence that concrete masonry wall of stand alone garage had been sealed recently.	Evidence required (B2)	5.4.1
2.2(a)	Remaining hairline cracks a maintenance issued.	Remedial work required (B2)	6.3.1 & 5.4.1
2.2(b)	Some fixings had corroded and needed replacing.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.2(c)	Plumbing and drainage non-compliances.	Clarification by authority required	7.6 & 5.4.1

2.2(d)	Hold down fixings have performed to date.	Adequate (B1)	5.4.1
2.3(a)	Penetrations all adequately sealed.	Adequate (E2)	5.4.1
2.3(b)	Timber retaining wall abuts cladding, no separation or flashing.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.3(c)	Spreader required on west side.	Remedial work required (E2/B2)	6.3.1 & 5.4.1
2.3(d)	Stormwater drainage.	No evidence of non-performance with Building Code. Adequate	7.6 & 5.5
2.3(e)	Gaps in foil in northern extension.	Remedial work required (H1)	7.2 & 5.4.1
3.0(a)	Additional kitchen installed.	Clarification by authority required (C1, C3)	7.4, 7.5, 5.4.1 & 5.2.1
3.0(b)	As built plans required to reflect actual paved area.	As built drawings required	7.5, 5.4.1 & 5.2.1
3.0(c)	Omission of the post.	Engineering assessment required (B1)	7.3, 5.2.1 & 5.4.1
3.0(d)	Changes to internal layout.	As built drawings required	7.5, 5.4.1 & 5.2.1
3.0(e)	Laundry and hot water cylinder installed.		
4.0(a)	Smoke detectors	Not required at the time of construction but strongly suggest they be installed. (F7)	
4.0(b)	Hand rail to internal stairs has been installed.	Adequate (F4)	5.4.1
4.0(c)	Drains and gutters to be clear.	Adequate (E2)	5.4.1

7.8 I am satisfied that the house does not comply with the Building Code in some respects and that the authority made an appropriate decision to issue the notice to fix. However, I am also of the view that some items identified in the notice are adequate and so the notice should be modified accordingly (refer to paragraph 8.1).

8. What happens next?

8.1 The notice to fix should be modified to take account the findings of this determination, identifying the items listed in paragraphs 5.4.1, 7.2 and 7.7 requiring remedial work, and investigations referred to in paragraphs 6.3.2, 7.3 and 7.5, 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. It is important to note that the Building Code allows for more than one means of achieving code compliance.

8.2 I suggest that the authority should revise and reissue the notice to fix. The applicants should then produce a response to this in the form of a detailed proposal for the house as a whole, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified matters. Any outstanding

items of disagreement can then be referred to the Chief Executive for a further binding determination.

9. The decision

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

- the addition does not comply with clauses B2, E2, and H1 of the Building Code
- the stand alone garage does not comply with clauses E2 and B2 of the Building Code

and accordingly I confirm the authority's decision to issue the notice to fix, however the authority is to modify the notice to take account of the findings of this determination.

- 9.1 I also determine that there is insufficient evidence to be satisfied on reasonable grounds that the additions comply with clauses B1, C1, C3 of the Building Code.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 13 February 2012.

John Gardiner
Manager Determinations

APPENDIX A: THE RELEVANT LEGISLATION

A.1 The relevant sections of the Building Act are:

114 Owner must give notice of change of use, extension of life, or subdivision of buildings

- (1) In this section and section 115, change the use, in relation to a building, means to change the use of the building in a manner described in the regulations.
- (2) An owner of a building must give written notice to the territorial authority if the owner proposes—
 - (a) to change the use of a building; or

...

115 Code compliance requirements: change of use

An owner of a building must not change the use of the building,—

- (a) in a case where the change involves the incorporation in the building of 1 or more household units where household units did not exist before, unless the territorial authority gives the owner written notice that the territorial authority is satisfied, on reasonable grounds, that the building, in its new use, will comply, as nearly as is reasonably practicable, with the building code in all respects; and