



Determination 2012/057

Regarding the issuing of a code compliance certificate for a house with a log fire installed at 566 Tunakino Valley Road, Rai Valley, Marlborough

1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the current Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”²), for and on behalf of the Chief Executive of the Ministry.
- 1.2 The parties to the determination are:
 - the applicant, Marlborough District Council (“the authority”), carrying out its duties as a territorial authority and a building consent authority
 - S Fahey and R McQueen, the current owners of the house.
- 1.3 The matter to be determined³ is whether the authority correctly exercised its powers in issuing a code compliance certificate for a dwelling that contained a proprietary open log fire (“the log fire”). In making this decision I must consider whether the log fire as installed complied with the Building Code (Schedule 1 of the Building Regulations 1992) that was current at the time the consent was granted.
- 1.4 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.
- 1.5 I have referred to the relevant legislation in Appendix A.

2. The building work

- 2.1 The log fire in question is set into a tiled surround and sits on a tiled hearth laid over a concrete floor: the hearth projects 285mm into the room. A timber trim (measuring approximately 40x40mm) is fixed to the outer margins of the tiled hearth. The flooring beyond the timber trim comprises vinyl on concrete.

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

² After the application was made, and before the determination was completed, the Department of Building and Housing was transitioned into the Ministry of Business, Innovation and Employment. The term “the Ministry” is used for both.

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

- 2.2 The log fire is connected to a metal flue installed within a flue enclosure (“the flue enclosure”) situated on an exterior wall of the dwelling. The flue enclosure is timber-framed and clad with stucco plaster. The consent drawings show that the fire surround was to be made of precast concrete.
- 2.3 The manufacturer’s instructions for the log fire were included with the building consent documents; the instructions noted that the log fire installation was to be completed in accordance with NZS 7421:1990⁴.

3. Background

- 3.1 The authority issued a building consent (No 001480) for a ‘Dwelling with Attached Garage and [named] Log Fire’ on 20 November 2000 under the Building Act 1991 (“the former Act”). One condition of the consent noted:
- Stove and flue to be installed in strict accordance with the manufactures (*sic*) recommendations. An inspection is to be made by [the authority] on completion of the work PRIOR to lighting the fire and installation of the ceiling plate.
- 3.2 On 5 February 2001 a site inspection of the log fire was carried out by an officer of the authority. A corresponding checklist, dated 9 February 2001 and headed ‘Fire Installation to NZS 7421’, noted that while the hearth projection was 360mm and not the required 400mm it was constructed on a concrete floor. The checklist also notes other features observed, including:
- Flue installed correctly
Seismic restraint
Chimney vented through cone
- Against the entry ‘Open wall up behind the mantle required’ the check sheet records ‘no’ but also records ‘Timber clear’.
- 3.3 Subsequent to further final inspection of the entire dwelling, a “field sheet entry” dated 16 September 2002 was forwarded to the then owners. In this, the authority noted that certain items required attention before a code compliance certificate could be issued. With regard to the log fire, it was noted:
- The hearth to the log fire is a bit short but there is basically vinyl on concrete floor and the timber edging is raised which would cut back the angle of radiation. The mantle is well over 500 above the top opening of the fireplace and [one of the then owners] says it does not get hot at all.
- 3.4 On 11 November 2004, the authority issued the code compliance certificate.
- 3.5 The current owners (“the owners”) moved into the house on 18 December 2007, some three years after the code compliance certificate was issued. According to the owners, they first lit the log fire in April 2011 and found problems with its operation.
- 3.6 Between 13 and 15 April 2011 the parties exchanged emails in which the owners maintained that the log fire had been incorrectly installed, did not function correctly, allowed smoke to enter the room, and was dangerous. The owners were also of the opinion that the authority had not correctly inspected the log fire. The authority’s responses stated that the log fire had been checked by an officer from the authority, that officer believed that code-compliance had been achieved, and that the authority stood by those inspections.

⁴ NZS 7421: 1990. Specification for installation of solid fuel burning domestic appliances.

- 3.7 In an email to the authority dated 26 April 2011, the owners noted that they had carried out further investigations regarding the installation of the log fire. I summarise the main points raised by the owners as follows:
- The installed hearth was 285mm wide as compared with the manufacturer's specified minimum of 450mm wide. The timber trim to the hearth also posed a fire risk.
 - Air replacement vents as required by the manufacturers have not been installed.
 - The log fire is sitting 10mm below the manufacturer's specification requirements and this affects the air-flow to the fire.
 - The flue may not have been sealed at the joints as per the manufacturer's specifications.
 - The log fire needs to be reinstalled so as to comply with the manufacturer's specifications.
- 3.8 On 17 May 2011, the authority's legal advisers wrote to the owners describing some of the background and noting that the Building Code did not include installation instructions for log fires. The advisers stated that the authority was not aware of any safety issues over the past years and that the authority considered the log fire to be code-compliant.
- 3.9 The owner's legal advisers responded to this letter noting that various installation requirements had not been met and the installation did not 'adhere strictly to the manufacturer's recommendations'.
- 3.10 The owners emailed the authority on 23, 24, and 29 June 2011, reiterating their concerns.
- 3.11 On 5 July 2011, the authority's legal advisers wrote to the owners stating that '[t]he simple question is whether the log fire was compliant prior to the modifications that you made': the letter did not describe what these modifications were. In an email to the authority, dated 18 July 2011, the owners stated they had made no changes to the log fire.
- 3.12 Following further emails from the owners, the authority stated in an email dated 19 July 2011 that '[t]he fire complies with the NZ Building Code as signified by the Code Compliance Certificate. No further statement in this regard will be made.'
- 3.13 The authority's application for a determination was received by the Ministry on 19 December 2011.

4. The initial submissions and the reports of the owner's technical advisers

4.1 The authority

- 4.1.1 In a covering submission dated 12 December 2011, the authority described the background to the dispute and the correspondence that had taken place between the parties. The authority also stated that over time it had submitted to the owners that:

The appliance may be at the end of its life as the appliance was in use as far back as 2002.

The Building Code is about health and safety and [the authority] saw no health or safety issues.

The Building Code does not contain the manufacturer's instructions for installation of appliances such as log fires.

Code compliance was achieved.

- 4.1.2 The authority also referred to the relevant Building Code clauses, and was of the opinion that NZS 7421:1990 did not apply in this case as the manufacturer's instructions were provided. It was also noted that no issues had been raised from the time the log fire was installed up to when the code compliance certificate was issued. Nor were any issues raised during the previous four years that the owners had occupied the house. The authority was also of the opinion that the log fire was approaching the end of its serviceable life and the authority did not know whether any maintenance had been carried out on the appliance.
- 4.1.3 The authority submitted that while the hearth clearance is less than that recommended by the manufacturers, the inspecting officer made a justifiable decision. There was no evidence that the log fire was unsafe or posed a health risk, and based on a 'test of time', the functional requirements of Clause C1.2 had been demonstrated. The appliance was installed over a concrete floor and the Building Code had no specific requirements for this situation. The function of the hearth was only to collect ashes falling from the fire.
- 4.1.4 The authority noted that the air vents may be partially obstructed by the hearth tiles but it was not known at what stage these had been installed. This situation could be remedied by the removal of the tiles.
- 4.1.5 Finally, the authority acknowledged that the 'appliance may not be installed perfectly in accordance with the manufacturer's recommendations and that the appliance may not have functioned efficiently'. However, the authority was of the view that as the log fire met all the functional requirements of the Building Code, it was code-compliant. As the authority considered that the log fire was not dangerous, it would not issue any notices in this regard.
- 4.1.6 The authority provided copies of:
- the house plans
 - the building consent and associated documentation
 - the code compliance certificate
 - the site inspection checklist for the log fire
 - the log fire manufacturer's installation instructions
 - the correspondence between the parties.

4.2 The owners

- 4.2.1 In an email to the Ministry dated 23 January 2012, the owners noted that the log fire still emitted some smoke even when the doors etc were left open.
- 4.2.2 In a submission dated 30 January 2012, the owners set out the background to the dispute, emphasised that they had not modified the log fire, and noted that the authority had made no effort to inspect it. The owners set out the areas they considered to be wrong with the log fire, the resulting impact on its safety, and those

items that were at odds with the manufacturer's instructions. I summarise the owner's concerns as:

- The hearth projects 285mm into the room and not the required 400mm. The hearth projection increases to 330mm when the timber trim, which is combustible, was included. The tiles were in place when the log fire was inspected by the authority.
- The fire box does not sit level, but sits approximately 12mm below the finished hearth level and this restricts the airflow around the fire box.
- There should be two air vents at both the top and the bottom of the fireplace, instead of the one installed at each level.
- As the log fire is 'very hard to get going and blows a lot of smoke into the room causing a nuisance and health hazard', it does not comply with the relevant requirement of Clause G4 Ventilation.
- Heat and smoke have caused decolourisation (or blacking) of the face plate below the mantle.

4.2.3 The owners also noted that the log fire and associated flue had been properly maintained, and referred to the authority's comments that the 'installation is not totally in accord with the manufacturer's instructions', noting that the authority had not provided any expert advice or opinion on the installation or the working of the log fire.

4.2.4 The owners provided copies of:

- the correspondence between the parties.
- reports from the technical advisers of two separate fireplace retailers (refer paragraphs 4.3 and 4.4)
- a NZHHA⁵ press release entitled 'Lack of Ventilation Possible Cause of Chimney Fires'
- photos showing the exterior vents set into the flue enclosure
- photos showing the base of the fire box with the notation 'No earthquake restraints. Should be 2 x 6mm dyna bolts. This fire has not been fixed down'.

4.3 The first technical adviser's report

4.3.1 In a letter to the owners dated 17 January 2012, the first technical adviser emailed a list of observations regarding the log fire and attached a set of installation instructions. In summary, the adviser noted:

- The hearth extension does not have the required projection and the hearth height is incorrect.
- By partly covering the intake grille, the tiles at the front of the log fire are impeding the air flow to the log fire.
- Two air intake grilles are required and only one is installed.
- The timber trim should not be part of the hearth.

⁵ New Zealand Home Heating Association

- Checks should be undertaken to confirm the mantel clearances, the materials used under the flashing plate, and whether the firebox has been bolted to the concrete base.

4.4 The second technical adviser's report

4.4.1 The report from a second technical adviser was in the form of an email to the owners dated 3 February 2012, together with a hearth extension graph and some air replacement advice. I summarise the email as follows:

- The gap between underside of the firebox and the top of the hearth is not sealed, and ideally the firebox should be sitting on the same level as the hearth. The adviser was 'pretty sure' sealing the underside of the firebox would 'mitigate some of the smoke issues experienced'.
- There should be some form of internal air replacement to 'alleviate any air pressure differences that can occur'.
- The hearth projection is 150mm narrower than it should be and the timber trim would only be acceptable if the hearth was 450mm wide.
- The air vents should be in accordance with the air replacement instructions that were provided.
- With proper maintenance, the log fire should exceed a 15-year durability requirement.

5. The expert's report and submissions in response

5.1 As mentioned in paragraph 1.4, I engaged an independent expert to assist me. The expert visited the site on 30 April 2012 and provided a report on 14 May 2012 which included a copy of the manufacturer's installation instructions that were current at the time of installation. The parties were provided with a copy of the report on 17 May 2012.

5.2 In the following table I note the expert's observations along with the submissions made by the parties in response:

External flashing to the top of the flue	
Expert	The flashing on top of the flue enclosure is undersized and not weatherproof.
Authority	The method of flashing was common at that time and, as it was the authority's safety practice at the time not to go onto roofs for inspections it was up to the builder to ensure the flashing was installed to compliance.
Owners	The flue enclosure is part of the consented work and it is the authority's duty to inspect and 'sign-off' work prior to the issue of a code compliance certificate.
Sealing around the fire box	
Expert	The base of the log fire has not been sealed to the floor, allowing air from the cavity to enter the room.
Authority	Combustion performance of the log fire is an efficiency matter not a Building Code matter.
Owners	Clause [G]4.3.3 concerns combustion. Excess smoke, the product of combustion, is not adequately removed and collects in the room.

Ventilation to the room the fire is in	
Expert	The log fire is not drawing correctly; the house is 'air tight' and requires more venting now than it had when the log fire was installed. However, installation instructions do not mention venting of the room. (I note that vents have subsequently been installed either side of the log fire. The determination must consider the compliance of the building work at the time that the authority made the decision to issue the code compliance certificate.)
Authority	The manufacturer did not identify need for venting and it is an efficiency matter not a Building Code matter.
Owners	Clause G4 stipulates the requirements for venting and it is in the manufacturer's instructions. The authority's inspection should have picked up the issue regarding adequate ventilation in relation to the double-glazed aluminium joinery.
Ventilation of the flue enclosure	
Expert	The venting of the flue enclosure is inadequate at approximately 55% of the total air flow specified in the manufacturer's instructions. The vents may also not be weathertight.
Authority	The authority does not accept the volume of ventilation stated and 'other air intake areas' have not been taken into account. There are likely to be air passageways via the flashings which would increase airflow. The flue enclosure and weathertightness were not the subject of the application for determination. There is no suggestion in the expert's report that moisture is entering the structure through the vents.
Owners	The flue enclosure was specifically mentioned in the consent as needing to comply with manufacturer's instructions. The venting is inadequate and does not comply.
Expert	The manufacturer's instructions call for a 12mm clearance between the flashing to the top of the flue enclosure and casing cover 'where possible'. This has not been installed.
Authority	Clearance between the flue and casing cover was the manufacturer's recommendation not a requirement.
Owner	(no comment offered)
Air circulation within the flue enclosure	
Expert	The expert was able to carry out only a limited inspection inside the flue enclosure, but noted that there appeared to be insulation on top of the fire box which would be blocking air circulation by approximately 20%. The expert noted that this should be removed to allow proper circulation and to ensure there is no chance of any combustible material being on top of the fire box or 'gatherer'.
Authority	The authority would not likely have been able to see into the flue enclosure to inspect for air circulation; it is for the installer to ensure during installation.
Owner	The authority should have undertaken an inspection at pre-line to ensure that all the cavities comply and it is reasonable to expect the authority to have noticed the blocked circulation area during such an inspection.
Hearth projection	
Expert	The manufacturer's instructions specify the hearth projection should be 400mm. The hearth projects 290mm from the front of the log fire and the timber trim sitting above the tiles will be collecting radiant heat from the fire.
Authority	The log fire has been in place for many years and there is no evidence that the timber trim has been affected in any way.

Owners	The log fire has been used by the owners on very few occasions and therefore there has been limited opportunity for problems to arise. The inadequacy of the hearth and timber trim increases the risk of fire.
The mantle	
Expert	The tiles between the top of the log fire and the timber mantle flex slightly. (The expert provided comment on the possible reasons for this.)
Authority	The flexing of the tiles between the log fire and the mantle is not a Building Code matter.
Owner	The surround is part of the construction and is in the installation instructions.
Seismic restraint of the fire box	
Expert	The expert was unable to ascertain whether the fire box has been seismically restrained correctly as it may be hidden behind the tiles.
Authority	The authority's records made at that time indicate the seismic restraint is in place and there is no evidence to the contrary.
Owners	There is sufficient evidence to indicate the lack of fixing to the floor. The fire box is able to be moved by putting a bar under it and lifting it. It can also be seen that the restraints aren't in the place shown in the manufacturer's specifications.

6. The draft determination

6.1 A draft determination was sent to the parties for comment on 28 May 2012. The authority responded, via a solicitor, in a letter dated 11 June 2012 stating that it did not accept the draft determination. The owners responded in a series of emails to the Ministry, with a detailed submission received on 20 July 2012.

6.2 I have summarised the points raised in submissions by the parties that related directly to the expert's report in the table in paragraph 5.2. I summarise the remaining points as follows:

The authority

- The installation has been in place for several years and there is no suggestion that it has been unsafe in its operation, such as burning, charring or heat damage.
- The 'band of timber' to the hearth separates a concrete floor from the concrete hearth; if there is any non-compliance it is 'only technical'.
- It is unclear what the 'products of combustion' are that are referred to in paragraph 7.4.2.
- 'Weathertightness issues were not the subject of the building consent' and these should not form part of the determination.

The owners

- Proof of a problem having occurred is not necessary for finding non-compliance.
- Non-compliance with the manufacturer's instructions means that the consent was not complied with.
- A breach of the consent indicates a breach of the Building Code.

- The discolouration of the face plate below the mantle suggests a problem with venting and the way the fire is heating.
- The reference ‘products of combustion’ is to smoke.
- Weathertightness is a requirement of Building Code Clause E2.

7. Discussion

7.1 General

- 7.1.1 The authority has stated that as the manufacturer’s instructions were provided, the requirements of NZS 7421 did not apply. However, the manufacturer’s instructions supplied with the building consent documents note that ‘All installations are to be to NZS 7421:1990’, and the site inspection check sheet used by the authority to inspect the log fire was also headed ‘Fire Installation to NZS 7421’. I am therefore of the opinion that the standard is relevant to my considerations. I note that the manufacturer’s instructions do not override the performance requirements of the Building Code.
- 7.1.2 As the building consent was issued under the former Act, the issuing of a code compliance certificate is subject to the requirements of section 436 of the current Act. Accordingly, the dwelling, including the log fire, has to comply with the requirements of the Building Code that was in force at the time the building consent was granted in order for a code compliance certificate to be issued.
- 7.1.3 The owners contend that a breach of the consent constitutes a breach of the Building Code. This is not correct; work can be installed that may not be what was described in a consent, but because a change has been made it does not necessarily follow that the altered work is not code-compliant. The Building Code is a performance based document, meaning that the minimum performance requirements stated in the code can be met by more than one means.
- 7.1.4 The relevant clauses of the Building Code that relate to the log fire are Clause C1 Outbreak of fire, and Clause G4 Ventilation.

7.2 Compliance with Clause C1

- 7.2.1 Clause C1 requires that fires, such as the one in question, are to be installed ‘in a way which reduces the likelihood of fire’. From the evidence that I have received, I am of the opinion that the matters relating the “likelihood of fire” include:
- the hearth projection
 - the ventilation of the flue enclosure (including the material on the fire box observed by the expert)
 - the seismic restraint.
- 7.2.2 Clause C1.3.2 of the Building Code that was in effect at the time the building consent was issued stated:
- C1.3.2 Fixed appliances shall be installed in a manner that does not raise the temperature of any building element by heat transfer or concentration to a level that would adversely affect its physical or mechanical properties or function

- 7.2.3 In assessing the compliance of the log fire, the Acceptable Solution C1/AS1, while providing only one method of achieving code-compliance, provides some guidance on how compliance may be achieved.
- 7.2.4 The authority states that there is no visible evidence of the log fire failing to perform, but it does not appear to have witnessed its operation. The owner has advised that the log fire has 'hardly been used' during the time of their ownership, and that use of the fire presents a safety concern. There is therefore little evidence to be drawn from proven performance in use to demonstrate compliance, and the evidence of the expert and technical advisers therefore assumes a greater significance.

The hearth projection

- 7.2.5 I note that a hearth is not only for protection in terms of insulating heat sensitive flooring, but also for hot ash or burning fuel that may be displaced from the fire during its operation. In this instance, as the log fire and hearth are situated over a concrete floor, I consider the hearth to be an 'ash hearth'.
- 7.2.6 The manufacturer's instructions note the hearth projection should be '400mm min. for wooden floors', but is silent on hearth size on other floor types; the instructions also state the log fire was to be installed 'to NZS 7421:1990'. Acceptable Solution C1/AS1 current at the time the consent was granted also cited NZS 7421 as a means of compliance for clearances between solid fuel burning appliances and combustible materials.
- 7.2.7 Paragraph 301.2 of NZS 7421 current at the time of the consent stated that, in the case of an unenclosed fire 'an ash hearth shall extend not less than 200mm' in front of the grate. The hearth as installed satisfies this requirement.
- 7.2.8 I also note that a hearth defines an area where combustible material should not be placed. Combustible material may well be placed up against a hearth by an owner with the reasonable expectation that it will be safe. Figure 1 of C1/AS1 shows a hearth projecting 380mm from an open fireplace; and the owners may well wish to take this more conservative approach by removing the timber trim and lino to this distance from the grate.
- 7.2.9 In conclusion I consider that as NZS 7421 was cited as a means of compliance in C1/AS1, and the hearth as installed complies with NZS 7421, it therefore must be deemed to comply with Clause C1.3.2.

Ventilation of the flue enclosure

- 7.2.10 C1/AS1 has no direct commentary regarding flues such as that installed for this fire. The owners have supplied a copy of an NZHHA press release describing the fire risk if flue enclosures are inadequately ventilated. I note that this advisory document cannot be used to interpret Clause C1.
- 7.2.11 The expert has noted that the venting of the flue enclosure is in the order of 55% of that set out in the manufacturer's instructions, and that there appears to be insulation sitting on the fire box that would be impeding air circulation. The expert also noted that there is no ventilation clearance between the flashing to top the of the flue enclosure and outer casing cover as recommended by the manufacturer.
- 7.2.12 The authority contends that 'other air intake areas have not been taken into account' (refer summary table at paragraph 5.2), but does not identify the air intake areas

concerned. I note that the inspection checklist, referred in paragraph 3.2, says ‘chimney is vented through the cone [being the casing cover]’. However, this ventilation is between the outer flue and the casing cover: the ventilation is not between the outer flue and the flashing to the top of the flue enclosure as shown in the manufacturer’s installation instructions.

- 7.2.13 I consider the ventilation provided to the flue enclosure is significantly less than that described in the manufacturer’s installation literature. I accept the expert’s findings and conclude that the log fire does not comply with Clause C1.3.2 in this respect.

Seismic restraint

- 7.2.14 Paragraph 302.4 of NZS 7241 required that ‘provision shall be made for seismic restraint of the hearth and the appliance’.
- 7.2.15 The authority has submitted that its site inspection checklist (refer paragraph 3.2) confirms that the seismic restraint was installed.
- 7.2.16 The owners have supplied an annotated photograph purporting to show that no seismic restraints had been installed at the fire base, and have stated that the log fire is able to be lifted. Photographs submitted by the owners do not appear to show any fixings in place though the bottom of the fire box.
- 7.2.17 The expert did not observe any fixings but said it is possible that the restraint may be installed behind the tiles. The first technical adviser also had concerns about the securing of the log fire to the concrete base.
- 7.2.18 Given the above I consider that there is insufficient evidence to establish on reasonable grounds that the seismic restraint of the log fire is adequate.

7.3 The mantel

- 7.3.1 The owner has raised the ‘decolourisation or blacking’ of the face plate below the mantle as a concern, and considers that it suggests a problem with venting and the way the log fire is heating. The expert has made no comment on this in his report but observed the tiling immediately below the mantle flexes slightly when pressed by hand.
- 7.3.2 As there is remedial work to be carried out to make the log fire compliant I consider that the construction of the tiling below the mantle should be investigated. The reason for the discolouration of the plate below the mantle is not clear, and I consider the performance of the log fire should be reassessed once remedial work has been completed.

7.4 Compliance with Clause G4

- 7.4.1 Clause G4.3.3 of the Building Code that was in effect at the time the building consent was issued stated:

G4.3.3 Buildings shall have a means of collecting or otherwise removing the following products from the spaces in which they are generated:

...

- (i) Products of combustion.

- 7.4.2 The expert has noted that the base of the log fire has not been sealed to the floor and is allowing air from the cavity behind the fire to enter the room. This may cause smoke to enter the room rather than exiting through the flue: this opinion was also shared by the second technical adviser (refer paragraph 4.4.1). I am of the opinion that in this respect the requirements of Clause G4.3.3(i) have not been met.
- 7.4.3 However, there may be a number of factors contributing to the reported ingress of smoke into the room including the ventilation of the room itself (whether enough replacement air is entering the room to enable the fire to properly ‘draw’), and the possible adverse effects of turbulent air acting on the building’s exterior.
- 7.4.4 I suggest that that the firebox be sealed, as recommended by the expert and the second technical adviser, and the smoke levels entering the room then reassessed.

7.5 Compliance with Clause E2

- 7.5.1 I note that the building work, which included the installation of the log fire with its flue and the flue enclosure, was required to comply with all relevant clauses of the Building Code and that this included the requirement to prevent the penetration of water that could cause undue dampness or damage to building elements (Clause E2.3.2).
- 7.5.2 I do not accept the authority’s contention that ‘weathertightness issues were not the subject of the building consent’ (refer paragraph 6.2). The log fire was part of the consented work for the whole building: the achievement of compliance with Clause E2 would have been integral to the authority’s assessment that compliance had been achieved when it issued the code compliance certificate.
- 7.5.3 The expert observed that the flashing on top of the flue and the vents to the flue enclosure may not be weatherproof. The photos show the top flashing to the flue enclosure does not to cover the full depth of the plaster cladding, and the air vents to the flue enclosure are embedded in the plaster cladding with no flashings being evident. While the expert was not asked to assess weathertightness, I consider that his observations of those details require further investigation in respect of Clause E2 External moisture.

7.6 Conclusions

- 7.6.1 I accept that the log fire as installed does not comply with the requirements of Clause C1.3.2 of the Building Code that was in effect at the time of consent, in respect of the material observed by the expert on the fire box, and the inadequate ventilation to the flue enclosure.
- 7.6.2 I also consider the weathertightness of the flue enclosure requires additional investigation to confirm compliance with Clause E2 External moisture.
- 7.6.3 Having reached this conclusion, and taking into account that these matters would have been evident to the authority at the time of inspection, I am of the opinion that the authority incorrectly exercised its powers in issuing the code compliance certificate.
- 7.6.4 I consider there is insufficient evidence to determine whether the log fire is seismically restrained or not.
- 7.6.5 While I accept the owners’ evidence that smoke enters the building, I consider there is insufficient evidence to establish the cause for this.

8. The decision

- 8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the log fire as installed did not comply with the Building Code that was current at the time it was installed, and accordingly I reverse the authority's decision to issue a code compliance certificate for building consent No. 001480.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 28 August 2012.

John Gardiner
Manager Determinations

Appendix A: The relevant legislation, Acceptable Solutions and Standards

A1 The relevant provisions of the Building Code current at the time of consent are:

Clause C1—OUTBREAK OF FIRE

C1.3.1 Fixed appliances and services shall be installed so as to avoid the accumulation of gases within the installation and in building spaces, where heat or ignition could cause uncontrolled combustion or explosion.

C1.3.2 Fixed appliances shall be installed in a manner that does not raise the temperature of any building element by heat transfer or concentration to a level that would adversely affect its physical or mechanical properties or function.

Clause E2 — EXTERNAL MOISTURE

E2.3.2 Roofs and exterior walls shall prevent the penetration of water that could cause undue dampness, or damage to building elements.

Clause G4—VENTILATION

G4.3.1 Spaces within buildings shall have means of ventilation with *outdoor* air that will provide an *adequate* number of air changes to maintain air purity.

G4.3.3 Buildings shall have a means of collecting or otherwise removing the following products from the spaces in which they are generated:

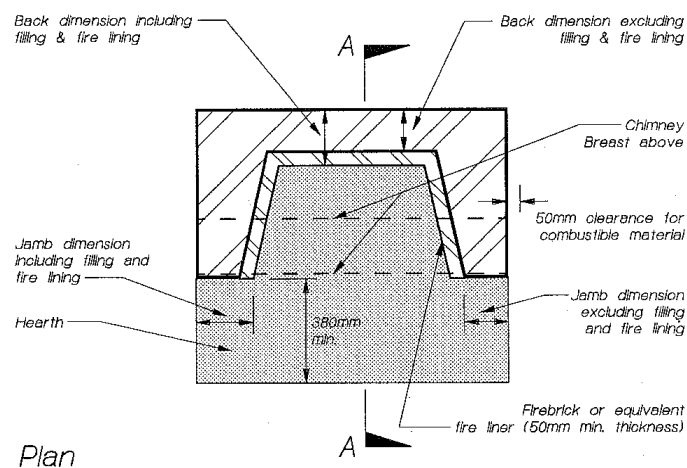
- (g) Airborne particles,
- (i) Products of combustion.

G4.3.5 The quantities of air supplied for ventilation shall meet the additional demands of any fixed combustion appliances.

A2. Figure 1 from the Acceptable Solution current at the time the building consent was issued (C1/AS1, 1st edition: Amendment 2, effective from 28 February 1998).

Figure 1: Chimney terms and dimensions

Paragraph 1.1 and Table 1



A3 NZS 7421:1990 Specification for installation of solid fuel burning domestic appliances - Definition of hearth:

HEARTH. A layer of heat resistant material under or near an appliance. It may be either part of the building structure or an overlay on a heat sensitive floor. Depending on their prime purpose, hearths may be further classified as follows:

- a) An **INSULATING HEARTH** is intended to protect a nearby or underlying floor from heat radiated from the appliance bottom or conducted from its base or feet. The dimensions are related to minimum safe distances between heat sensitive floor material and hot parts of the appliance.
- b) An **ASH HEARTH** is intended to protect a nearby or underlying floor from hot ash or burning fuel dropped during ash removal or stoking operations. The dimensions are related to location of ashpan and firebox doors plus a spillage margin. The same hearth may combine both features.

301.2

An ash hearth shall extend not less than 200mm in any direction from all points on the floor that are vertically under a firing or ash removal opening or, in the case of an unenclosed fire, the front of the grate.