



Determination 2011/117

The refusal to grant a building consent for work to improve the resilience of a building in terms of the impact of weathertightness issues at 39A Orakei Road, Remuera, Auckland

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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.

1.2 The parties

1.2.1 The parties to this determination are:

- the owner of the house, Mr P Ross (“the applicant”), represented by an agent
 - the agent is the Origins Group Limited which is a building consultancy firm and a member of the Step Up Group.
 - the Step Up Group comprises of a number of companies that have developed technologies for building repairs and improvements. The Step Up Group (and its related companies including Origins Group Limited) is also a persons with an interest in this determination on the grounds of being the proprietary system provider (“the PSP”)
 - I have referred to both the agent and the PSP as ‘the PSP’ because of the nature of the dispute between the parties, the people and companies involved, and the nature of the information provided by the PSP (the determination is primarily about technical issues relating to the PSP’s methodology and building improvement technologies (“the PSP’s methodology))
- the Auckland Council, carrying out its duties and functions as a territorial authority and a building consent authority (“the authority”).

1.3 The matters

1.3.1 The PSP has developed a number of technologies for repairs and improvements to buildings that are designed to slow down the rate of decay in buildings that have suffered or continue to suffer from weathertightness problems. The determination arises from a decision made by the authority not to grant building consents for proposed building work that consists of a range of works to improve the house using the PSP’s methodology.

1.3.2 In this case, the building work I have considered (that is in dispute) is the installation and application of certain technologies the PSP has developed to improve the resilience of buildings in terms of the impact of lack of weathertightness and durability provisions on generally untreated timber framed buildings (“the building work in question”). I have identified the technologies that make up the building work in question in paragraph 2.2.5.

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

1.3.3 I therefore consider the matters to be determined² are:

- whether there is sufficient evidence to conclude the building work in question (which is a proposed alternative solution) complies with the Building Code to the extent required by the Act for this house
- whether the authority was correct to refuse to grant the building consent for this house.

1.3.4 In making my decision on these matters, I have considered the submissions of the parties, the information presented at a technical meeting and other evidence in this matter.

1.3.5 I emphasise that each determination is conducted on a case by case basis.

2. The building work

2.1 The existing building

2.1.1 The house is a two storey, semi detached dwelling, constructed on a concrete slab foundation on a moderately sloped site in a medium wind zone for the purposes of NZS 3604³. The external walls are constructed of solid plaster stucco cladding over lightweight timber framing with powder coated aluminium joinery.

2.1.2 The roof has a complex design with no eaves. It is made up of a main upper roof clad with bitumen tiles with two flat and three curved dormers and a lower gable roof with parapets to the garage and front entry. Small roofs extend out from the base of the dormer windows. The flat dormer roofs have a slight slope clad with butyl rubber and the curved dormer roofs and lower roofs are clad with a copper/bitumen membrane.

2.1.3 The house has a code compliance certificate that was issued following its construction.

2.2 The building work

2.2.1 The applicant has had a monitoring system installed by the PSP that consists of permanently fixed moisture probes installed to the building to support ongoing maintenance to the building (“the monitoring system”).

2.2.2 As described in paragraph 1.3.1 and 1.3.2, the PSP has applied for a building consent on behalf of the applicant to undertake building work to the house. The building work consists of a range of works to improve the resilience of the house using the PSP’s methodology pending more substantive future permanent repairs.

² In terms of section 177(1) (a), 177(1)(b) and 177(2)(a).

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 2.2.3 The publication ‘Weathertightness: Guide to remediation design’⁴ describes the aim of remediation design as ‘... to address the specific weathertightness and durability issues of the building to fix the current leaks and damage and protect against future leaks.’ The PSP’s methodology is not what can be considered as an archetypal remediation methodology, as it has a distinct and different aim from that described in the guidance.
- 2.2.4 For the purposes of the determination, I have considered the range of works described in the building consent using the PSP’s methodology in three main categories:
- the building work in question (which I have described in paragraph 2.2.5)
 - the timber assessment process (refer to paragraph 2.2.6)
 - other items of work listed in the scope of works (refer to paragraph 2.2.7)
- 2.2.5 The building work in question to the house consists of:
- the application of timber treatment by an in situ injection system (“the in situ treatment system”). The treatment is a mixture of boron, oils, multi spectrum fungicide and water (“the in situ treatment”)
 - the modification to the cladding system by the installation of drying skirts. Drying skirts are made of EIFS⁵ cladding and are a modified polystyrene band with pre-coats of mesh and lamina and with a diamond cavity backing (“the drying skirts”).
- 2.2.6 The timber assessment process consists of:
- in situ testing
 - sample collection and laboratory testing for strength and treatment level
 - interpretation of results, verification and decisions about replacement.
- 2.2.7 The project lodgement report undertaken by the PSP lists the scope of works required to improve the house and supports the building consent application. The scope of works consists of the items of work, which are additional to those described in paragraphs 2.2.5 and 2.2.6, and include works such as modification and/or installation of flashing configuration to roofs, windows, doors etc, and other items of work to improve the weathertightness of the building. I have listed these items in Appendix 0.

⁴ This guidance document are available on the publications section of the Department’s website <http://www.dbh.govt.nz/publications>

⁵ Exterior insulation finishing system

2.3 Summary of key definitions

2.3.1 The following table defines the terms are widely used in this determination to describe various technologies and items of building work:

Term	Description
The PSP's methodology	The proprietary system provider's methodology and building improvement technologies
The building work in question	The technologies in dispute which are the in situ treatment system and installation of drying skirts
The monitoring system	Permanently installed moisture probes installed to support ongoing maintenance and repair to the building
The in situ treatment system	The application of timber treatment by an in situ injection system
The in situ treatment	A mixture of boron, oils, multi spectrum fungicide and water
The drying skirts	The modification to the cladding system by the installation of drying skirts
The timber assessment process	The structural timber verification process including sample collection and testing, interpretation of results, verification and replacement.

3. The background

3.1 As described in paragraph 2.2.2, the PSP applied for a building consent on behalf of the applicant to undertake a range of works to the house using the PSP's methodology, and including the building work in question.

3.2 There were a number of other building consent applications for a number of houses also submitted to the authority to undertake works to the house using the PSP's methodology.

3.3 The authority refused to grant any building consents for the works using the PSP's methodology in a letter dated 7 April 2011 (refer to Appendix B, paragraph B.3.1). In a letter to the PSP dated 7 April 2011 the authority stated:

3.4 The authority subsequently returned the applicant's building consent application and the other building consent applications (refer to paragraph 3.2) on 18 April 2011 and in a letter dated 18 April 2011, noted it has concerns about how the PSP's methodology will achieve compliance with the Building Code, :

- the authority has concerns about how the PSP's methodology will achieve compliance with the Building Code
- until compliance can be confirmed, no building consents for building work using the PSP's methodology will be issued
- the building consent application and the other building consent applications will not be processed by the authority.

- 3.5 An application for determination dated 28 April 2011 was received by the Department on 2 May 2011.
- 3.6 The submissions provided for this determination are summarised in Appendix 0.
- 3.7 A draft determination was provided to the parties for comment on 4 November 2011.
- 3.8 The parties provided comments on the draft determination (refer to Appendix 0), which I have taken into account in preparing the final determination.

4. The framework for this determination

4.1 Outline for assessing the matters to be determined

4.1.1 The matters I have set out for determination are:

- whether there is sufficient evidence to conclude the building work in question complies with the Building Code to the extent required by the Act
- whether the authority was correct to refuse to grant the building consent.
- whether the authority correctly exercised its powers in respect of the application for a building consent.

4.1.2 In order to consider these matters, I must consider the requirements for repairs to buildings under the Act as I note that this house has a code compliance certificate for its construction. I have issued a number of determinations about the requirements of the Act, as they relate to alterations to existing buildings, including repairs and remedial work. These determinations include 2010/140, 2010/139 and 2010/080.

4.1.3 The Department has also issued guidance that is relevant to this determination⁶, including:

- Guidance on Building Code compliance for retrofitting insulation in external walls
- Guidance on house repairs and reconstruction following the Canterbury earthquake
- Weathertightness: Guide to remediation design
- Weathertightness: Guide to the diagnosis of leaky buildings
- Using the Product Assurance Framework to Support Building Code Compliance – A Guide for Manufacturers and Suppliers of Building Products.

⁶ The guidance documents are available on the publications section of the Department's website <http://www.dbh.govt.nz/publications>

4.2 Requirements for repairs to buildings

- 4.2.1 Section 17 of the Act requires that all building work must comply with the Building Code. It doesn't matter whether the building work is to construct a new building or carry out alterations or repairs to a building, all such building work must comply with Building Code.
- 4.2.2 The Building Code is made up of clauses that set out the performance requirements that buildings and building work must meet. Most clauses of the Building Code have a subject to which the Building Code obligations are expressed to apply. It is that subject that defines the scope of the Building Code obligation. Just because building work is being carried out doesn't mean the building work has to comply with every clause of the Building Code. Building work to alter or repair a building only has to comply with the Building Code obligations that are applicable to building work of that scope.
- 4.2.3 There are Building Code obligations that apply to:
- a building or household unit
 - particular building elements of a building
 - different building systems within a building
 - amenities for a building
 - building materials
 - other characteristics of a building or matters associated with a building or building work.
- 4.2.4 There are express limitations on the types of building to which particular Building Code provisions apply set out in the "limits on application" column of the Building Code. Further definition of a number of the features of buildings to which Building Code obligations apply are provided in the Building Code for the terms "building", "household unit", "building element", and "amenity".
- 4.2.5 Some Building Code obligations apply to more than one feature of a building. For example, the Building Code obligations relating to structure in B1.3.1, B1.3.2 and B1.3.3 apply to "buildings", "building elements" and "sitework" and are thus triggered when constructing a new building, carrying out repairs or alterations to building elements, or carrying out sitework.
- 4.2.6 Section 17 of the Act also makes it clear that building work must comply with the Building Code regardless of whether a building consent is required. The circumstances when a building consent is not required are set out in section 41 of the Act, including work that is exempt from the requirement to obtain a building consent under Schedule 1 of the Act.

- 4.2.7 Where a building consent is required, section 49 of the Act gives effect to the requirements of section 17 by specifying that a building consent will not be granted unless the authority “is satisfied on reasonable grounds that the provisions of the Building Code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.”
- 4.2.8 These requirements in section 49 apply to any building consent regardless of whether the building work is to construct a new building or building work for alterations or repairs to a building.
- 4.2.9 Section 112 of the Act contains specific requirements for alterations. Section 112 relates to the compliance of the altered building (which is the whole building as altered, not merely the alteration). It does not detract from the section 17 requirement that all building work must comply with the Building Code or the provisions of sections 67 to 70 as to waivers or modifications of the Building Code. Under section 112(1):
- Any new building work must comply fully with the Building Code (subject to any waiver or modification granted by the authority).
 - After the alteration, the altered building, as a whole must:
 - Comply as nearly as reasonably practicable with the provisions of the Building Code that relate to means of escape from fire and access and facilities for people with disabilities.
 - Continue to comply with the other provisions of the Building Code to at least the same extent as before the alteration.
- 4.2.10 Therefore, section 112(1)(b) prevents an authority granting a building consent for an alteration if one of the effects of the proposed building work will be to detrimentally affect or reduce the level of compliance the building currently achieves.
- 4.2.11 It is important to distinguish between the need for new building work (i.e. the building work in question) to comply with the Building Code, as required by section 17 of the Act, and the need to ensure the building work does not reduce the extent to which the existing building complies with the Building Code, as required by section 112(1)(b) of the Act. These two requirements relate to different parts of the building, the extent of code compliance is different, and they can relate to different Building Code performance criteria.

5. Whether there is sufficient evidence to conclude the building work in question complies with the Building Code to the extent required by the Act

5.1 The considerations for assessing compliance

5.1.1 In order to form a view about whether there is sufficient evidence to conclude the building work in question to this house complies with the Building Code to the extent required by the Act, I have taken account of the regulatory requirements for doing repair work to buildings as I described in section 4.2, and how this applies to this situation and the items in dispute between the parties. With respect to the building work in question, I have therefore considered the following:

- the requirements of the Act in terms of whether the building work in question is building work, and whether a building consent is required
- the scope of the proposed building work
- the Building Code obligations for the building work
- the Building Code obligations for the existing building
- the compliance of the building work, existing building, and the evidence provided

5.2 The requirements of the Act in terms of whether the building work in question is building work, and whether a building consent is required

5.2.1 ‘Building work’ is defined in section 7 of the Act and includes “work for, or in connection with, the ... alteration ... of a building”. The ordinary dictionary meaning of the term ‘alter’ is ‘change in character or composition, typically in a comparatively small but significant way’.

5.2.2 In Determination 2010/130 I considered the retrofitting of injected foam insulation into the cavity behind a brick veneer wall, and whether this was building work and an alteration as defined in the Act. I took into account that ‘building work’ and ‘alter’ are defined in the Act in terms that affect the structure and fabric of a building and I came to the view that the term alter therefore relates to changes that have a significant impact on the performance of the structure and fabric of a building in terms of its code compliance. In terms of the retrofitting of the foam insulation, I found that in terms of the building’s performance, both the thermal efficiency and the requirements of Clause E2 are affected by the installation of the foam insulation.

5.2.3 The applicant considers that unlike the retrofitting of foam insulation, the in situ treatment does not change anything within the air, within the walls physical properties, or the mechanics of the wall cavity. The applicant also notes that the in situ treatment system ‘can vary considerably area to area and framing to framing and as such requiring consents will put undue cost and debate into this with [building consent authorities]’.

5.2.4 I consider however, that the analysis with respect to retrofitting foam insulation is relevant to the building work in question in terms of the in situ treatment system. The purpose of the in situ treatment system is described by the PSP as:

... [an in situ] treatment system used for the preservation of building structural framing in situ without requiring removal of linings or claddings.

[In situ] treatment is a process to replenish or introduce treatment to areas of the building most at threat of decay as part of repairs or a preventative measure against possible leaks in the future. This is important when determining whether a building will meet the 50 year durability requirements of [Clause B2 of the Building Code].

In situ treatment is an ideal method to improve the durability of homes partially affected by weathertightness issues before they escalate into expensive structural damage.

5.2.5 The requirement for a building to be ‘sufficiently durable’ is a functional requirement of the Building Code (Clause B2.2) and the in situ treatment broadly has the purpose of improving a building’s resilience in respect of any reduction in structural performance arising from weathertightness issues.

5.2.6 As I have noted below in the table at paragraph 5.6.4, I consider that the in situ treatment will have a potentially significant effect on the performance of the internal linings, external cladding, fire separations and exterior wall construction as part of the thermal envelope.

5.2.7 I conclude from these facts that the application of in situ treatment is work that alters the building and is building work as defined in section 7 of the Act.

5.2.8 As I am of the view that the application of in situ treatment is building work, it is necessary to consider whether this is building work that requires a building consent. Section 41 of the Act exempts certain building work from the requirement to obtain a building consent, including the exemptions listed in Schedule 1. Exemptions under Schedule 1 recognise that minor and low-risk building work should not be subject to the requirements of the building consent process.

5.2.9 The applicant is of the view that the application of the in situ treatment is maintenance. The applicant considers that while the use of untreated timber may have been considered to comply with B2 at the time it was installed given what is now known about the durability of untreated timber when subject to moisture that can no longer be the case. Such untreated timber will require maintenance and the PSP process is an innovation designed to allow such maintenance but it does not require the removal of the cladding.

5.2.10 Paragraph (a) of Schedule 1 offers an exemption for maintenance work, however, the application of in situ treatment cannot be considered exempt under this paragraph because the work is not maintenance:

- although not defined in the Act, I consider maintenance to be work that is needed to maintain the durability of a building element, where such durability has been reduced through normal circumstances (i.e. normal use, normal degradation)

- the application of in situ treatment is not maintenance, as it is adding something that was not there before and its purpose is not to simply maintain the current/existing levels of durability performance, but rather to increase durability and provide resistance to further decay where a building element (the timber framing) is degraded by other than normal circumstances (by in fact failure of another element – the E2 failure of the external envelope system)

5.2.11 The exemption in Schedule 1(a) also applies to repairs, however, I do not consider the application of in situ treatment can be characterised as a repair. First, the exemption does not apply to the repair of assemblies (the framing and envelope system) that have failed to meet the external moisture and durability requirements of Clauses E2 and B2 (see Schedule 1(a)(iii)). Secondly, the application of the in situ treatment is not a repair because it is not restoring the framing that has been affected by moisture back to what it was (sound untreated timber).

5.2.12 Therefore, I consider the application of in situ treatment does not come under the ambit of section 41, including that it is not work described by Schedule 1 of the Act, and therefore is building work that requires a building consent.

5.2.13 I also note that the variability of the process is not a reason supporting the building work being undertaken without the need for a building consent.

5.2.14 I also note it was not in dispute that the installation of drying skirts was building work that required a building consent.

5.3 The scope of the proposed building work

5.3.1 It is my view that an owner is entitled to decide the scope of work to be undertaken and therefore included in a building consent. The plans and specifications provided to support a building consent application are required to show the extent of building work to be carried out, and show how Building Code compliance is to be achieved.

5.3.2 In this case, the scope of work was not clearly defined in the building consent application. Some of the issues raised by the authority (refer to Appendix B, paragraph B.3.1) may be outside the scope of the work that the owner and PSP intend to be covered by the building consent.

5.3.3 The scope of the building consent was a topic that was discussed in length at the technical hearing. It is my view that the scope of work in the building consent should clearly reflect that the building work in question is limited to improving the durability of the framing (but not to such an extent that will necessarily ensure the framing fully complies with Clauses B1 and B2) and the external envelope repairs are to improve the performance of the external envelope and weathertightness and durability of the building and assist with dealing with introduced construction moisture (and must of course fully comply with Clauses E2 and B2).

- 5.3.4 I note that an owner may make a series of building consent application for stages of building work. It is my view that this may be the most practical way to deal with repair work of this nature, where a series of repairs may be required, depending on the outcome of previous repairs and the requirements of the owners. This approach would provide certainty to all parties and future owners as the scope of each stage of work would be clearly defined, and measurable, allowing the authority to sign off specific repairs.
- 5.3.5 I note that the authority raised questions about its ability to consent and sign off building work where there are non complying features of the existing building. As described in paragraph 5.3.1, it is my view that an owner is entitled to decide the scope of work to be undertaken. Furthermore, it is my view that the authority can only consider non complying features of the existing building if the features affect the compliance of the new building work.
- 5.3.6 In this respect I believe that water ingress that will affect the compliance of the building work in question, in the immediate term, must be attended to. In other words, the effect of water ingress and the in situ treatment must be considered in respect of the compliance with provisions such as Clause E2.3.6 regarding the dissipation of the excess moisture from the in situ treatment. The effect of such water ingress must also be considered in respect of the compliance of the drying skirts with Clause E2. A way of thinking about this is to split the features of the building (or part of the building where building work and improvements are being carried out e.g. one wall) that do not comply into failures of Clause E2 and failures of Clause B2 (with respect to Clause E2). Failures of Clause E2 are defects where there is water ingress in sufficient quantities to cause damage to building elements and failures of Clause B2 (with respect to Clause E2) are defects that may allow water ingress in the future. The PSP's building inspection reports provide important information in this respect, as the reports provide the authority with information about the condition of the existing building.
- 5.3.7 I note that the only other powers the authority has in respect of an existing building are if the building is dangerous or insanitary. An authority has obligations where an existing building meets the test of being dangerous or insanitary under sections 121 and 123 of the Act.
- 5.3.8 I also note that the project lodgement report undertaken by the PSP lists a number of items that I described in paragraph 2.2.7, which relate to particular elements of the building, for example flashing details. These items appear to be fairly standard in terms of a design to address the specific weathertightness and durability issues. The authority's refusal was not specific to the houses in question, and raised issues with the PSP's methodology, specifically related to the building work in question and the timber assessment process. I therefore have not considered these items in this determination. However, when these items are to be included in a particular building consent or stage of work, full details and specifications should be provided that demonstrate the adequacy of the proposed repairs to the building elements, for example, details showing the flashing configuration etc.

- 5.3.9 In this case, the insitu treatment has already been applied to the building. I am of the view that a building consent is required for this work for the reasons I have set out in section 5.2.10. In this case, the application of the insitu treatment can therefore not be considered as part of the scope of works for the building consent application. However, I have included the insitu treatment as part of the building work in question in this section of discussion, as this is the way in which I believe the PSP should set out the scope of the work to be covered by building consent applications in the future.
- 5.3.10 The use of the PSP's methodology is only appropriate for a certain range of buildings suffering from weathertightness issues. It is generally appropriate for those cases where there has been no major loss of structural integrity requiring significant timber replacement and the causes of the water ingress are of a scale that allows for easy repair to prevent further ingress. The PSP's methodology is purchased by building owners who make the decision not to initially undertake permanent repairs. The limits of the PSP's methodology should be made clear to owners to ensure that they are fully aware of them.

5.4 The Building Code obligations for the building work in question

- 5.4.1 The application of in situ treatment is for use in an existing building as a means of providing increased resilience should there be future failures of the external envelope to keep water away from the framing. The installation of the drying skirts provides a means of improving the drying capability of the external cladding and framing, and assists with providing a mechanism for the external framing that has been injected with the in situ treatment, to dry.
- 5.4.2 The Building Code obligations for the building work in question are:
- compliance with Clause F2, with respect to the application of in situ treatment product and its ongoing effects (Clause F2.3.1)
 - compliance with Clause E2, with respect to the dissipation of the excess moisture from the in situ treatment at the completion of construction
 - compliance with Clauses E2, with respect to the drying skirt being installed as part of the external envelope (Clauses E2.3.2, E2.3.3, E2.3.4, E2.3.6, E2.3.7)
 - compliance with B2, with respect to the extent that the other performance requirements apply (Clause E2 and Clause F2).

5.5 The Building Code obligations for the existing building

- 5.5.1 With respect to the impact of the building work in question being carried out, the building needs to comply to at least the same extent as before the building work is carried out. This must consider the impact of the in situ treatment on the existing building elements (given the process involves the injection of large volumes of liquid) and the impact of the installation of the drying skirt.

5.5.2 The relevant components of the building and Building Code obligations are:

Clause B1 (B1.3.1)

- the structural performance of the timber framing is not reduced by the building work in question
- the performance of the fixings is maintained by the building work in question
- the structural performance of the internal linings (for withstanding loads in normal use and providing bracing units where relevant) is not reduced by the building work in question
- the structural performance of the external cladding (where the cladding provides bracing units) is not reduced by the building work in question

Clause B2 (B2.3.1)

- the durability of the building elements are not reduced, with respect to the extent that the other performance requirements apply by the building work in question

Clause C3 (C3.3.2, C3.3.3)

- the fire separation is maintained after the installation of the drying skirt, where the external cladding contributes to the fire rating and is required to be fire rated by the building work in question

Clause E2 (E2.3.2, E2.3.5)

- the ability of the external cladding to prevent the penetration of water must not be reduced by the building work in question

Clause H1 (Clause H1.3.1, H1.3.2E, H1.3.3)

- the capacity of the exterior wall construction as a part of the thermal envelope is maintained and is not lessened by the building work in question.

5.6 The application of the Building Code obligations and the evidence provided

5.6.1 Building consent applications for the building work in question need to cover all the associated building work and demonstrate compliance with the Building Code and that the building work will not adversely affect the performance of the existing building.

5.6.2 The evidence provided by the PSP includes:

- the project lodgement report including the building inspection report and scope of works
- the PSP's manual that includes:
 - the methodology
 - the specifications for the various technologies
 - the processes supporting the building work

- Determination 2010/080
- documentation summarising the application of the relevant Building Code clauses and the evidence that supports Building Code compliance (refer to paragraph B.2.1)
- documentation and reports supporting the PSP's methodology:
 - testing by a recognised industry expert about the affect on the insitu treatment to provide resistance to rots, moulds, and fungi and the affect of the treatment on existing rots, moulds and fungi, and the health and safety aspects of the treatment
 - testing by a qualified specialist on the effects of the insitu treatment on fixings
- evidence from demonstrated performance on:
 - the drying out of buildings after the in situ treatment has been injected
 - the effect of the insitu treatment application on existing building elements such as insulation and linings.

5.6.3 The following table compares this evidence with respect to the Building Code obligations for the building work (refer to section 5.4). The building work in question must comply with the Building Code.

Building element	Building Code obligations	Information provided	My view
In situ treatment	Clause F2	Process includes ensuring people do not sleep in rooms where the treatment has been supplied for 3 nights and owners notified of the need to ventilate.	<p>I accept that this seems reasonable on the face of it, however no information has been provided as to the logic that led to this, and the reasons this meets the requirement of Clause F2.3.1. I note the PSP's manual includes information on the toxicity of boron, and comparisons with already treated timber. I am unclear if this has taken into account the effects of the application of the liquid product on site.</p> <p>This procedure is not incorporated in the PSP's manual.</p>

Building element	Building Code obligations	Information provided	My view
	Clause E2 Clause B2	<p>The PSP's manual and documentation provides information about the dissipation of the moisture.</p> <p>The drying skirt assists with providing a mechanism for the external framing that has been injected with the in situ treatment, to dry.</p>	<p>The installation of the drying skirt, in conjunction with the application of the in situ treatment provides me with grounds that the requirement of Clause E2.3.6 for the dissipation of moisture can be met. I note that I do not hold this view for proposals that provide for the application of the in situ treatment without the installation of a drying skirt</p>
Drying skirt	Clause E2 Clause B2	<p>The PSP's manual provides information about the drying skirt, its details, configuration, materials and the installation process.</p> <p>The PSP's manual provides information about the operational procedure, in terms of the requirement to obtain a building consent for this work and the advice required to be obtained from an expert.</p>	<p>I consider this is adequate to provide reasonable grounds.</p>

5.6.4 The following table compares this evidence with respect to the Building Code obligations for the existing building (refer to section 5.5). The existing building must comply to at least the same extent as before the building work in question was carried out.

Building element	Building Code obligations	Information provided	My view
Timber framing	Clause B1 Clause B2	<p>There is a significant amount of information provided about the effects of the in situ treatment on the timber framing, and the timber assessment process.</p> <p>The PSP's manual provides information about the structural framing verification, that includes the overall process, the sampling and testing procedures, decision making thresholds and guidance, processes for the removal of cladding and replacement of timber, outcomes, and the auditing process.</p>	<p>I consider this is adequate.</p>

Building element	Building Code obligations	Information provided	My view
Fixings	Clause B1 Clause B2	The testing by the specialist provides information on the effects of the in situ treatment on the fixings.	I consider this is adequate.
Internal linings (bracing and normal loads)	Clause B1 Clause B2	The evidence about the demonstrated, in service performance shows that in most cases, negative effects are an unlikely outcome, and not one that would prevent the methodology being used in the general case.	<p>With respect to ongoing compliance with Clause B1 and B2 to at least the same extent as before the in situ treatment application, there is no evidence provided about the ability of the internal linings to continue to provide bracing and withstand loads in normal use and the loss with respect to time and moisture content.</p> <p>This also relies upon monitoring possible negative effects. Clear procedures and guidance is required on what to look for and what to do in the case that certain thresholds are exceeded.</p>
External cladding (structural performance/ bracing)	Clause B1 Clause B2	The evidence about the demonstrated, in service performance shows that in most cases, negative effects are an unlikely outcome, and not one that would prevent the methodology being used in the general case.	Negatives effects remain a possibility in some certain cases. This therefore relies upon monitoring possible negative effects. Clear procedures and guidance is required on what to look for and what to do in the case that certain thresholds are exceeded.
External cladding (resistance to moisture)	Clause E2 Clause B2	<p>The PSP notes the introduction of the insitu treatment compensates for at least some of the risk of water penetration.</p> <p>The evidence about the demonstrated, in service performance shows that in most cases, negative effects are an unlikely outcome, and not one that would prevent the methodology being used in the general case.</p>	Negatives effects (such as cracking of cladding etc) remain a possibility in some certain cases. This therefore relies upon monitoring possible negative effects. Clear procedures and guidance is required on what to look for and what to do in the case that certain thresholds are exceeded.

Building element	Building Code obligations	Information provided	My view
Fire separations	Clause C3	<p>The PSP's manual provides information about the drying skirt, its details, configuration, materials and the installation process.</p> <p>The PSP's manual provides information about the operational procedure, in terms of the requirement to obtain a building consent for this work and the advice required to be obtained from an expert with respect to maintenance of fire separation.</p>	I consider this is adequate.
Exterior wall construction as part of the thermal envelope	Clause H1	The evidence about the demonstrated, in service performance shows that in most cases, negative effects are an unlikely outcome, and not one that would prevent the methodology being used in the general case.	Negatives effects remain a possibility in some certain cases. This therefore relies upon monitoring possible negative effects. Clear procedures and guidance is required on what to look for and what to do in the case that certain thresholds are exceeded.

5.6.5 Taking account of my findings in paragraph 5.6.3 and 5.6.4, I therefore conclude that:

- there is insufficient information to provide reasonable grounds the building work in question will comply with the Building Code for Clause F2, both in respect of the technical information provided and the operational procedures
- there is insufficient information that the existing building will comply with the Building Code to the extent required by the Act, in terms of the impact of the building work in question on the existing building for Clauses B1, B2, E2 and H1, both in respect of the technical information and the operational procedures.

5.6.6 I note that in respect of the operation procedures and the PSP's manual, it is my view that the manual and the procedures to ensure it is adhered to are a critical part of the system that ensures that this particular methodology when applied in appropriate circumstances, meets the appropriate tests under the Act for Building Code compliance.

6. Whether the authority was correct to refuse to grant the building consent

6.1 The building consent application process

6.1.1 The authority considers that documentation supplied with the consent application is not sufficient to provide reasonable grounds that the building work would comply with the Building Code to the extent required by the Act if carried out in accordance with the plans and specifications.

6.1.2 In order to consider the authority's decision to refuse to grant the building consent, I need to take into account the requirements for building consent applications in terms of section 45 and section 49 of the Act.

6.1.3 Section 49 of the Act requires an authority 'must grant a building consent if it is satisfied on reasonable grounds that the provisions of the Building Code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.' In terms of the basic information required to support an application for a building consent, section 45(1) of the Act states:

- 45 How to apply for a building consent
- (1) An application for a building consent must—
- (a) be in the prescribed form; and
 - (b) be accompanied by plans and specification that are –
 - (i) required by regulations made under section 402; or
 - (ii) if the regulations do not so require, required by a building consent authority; and
 - (c) contain or be accompanied by any other information that the building consent authority reasonably requires; and
- ...

6.1.4 The Act provides for an authority to set reasonable requirements for the documentation that accompanies applications for building consents. An authority is entitled to set minimum requirements to ensure that the proposed building work is clearly documented and to require designers to clearly demonstrate and document how Building Code compliance is to be achieved. The authority has a 'Guide to completing applications for building consents' that sets out the documentation that is required, the documentation that is sometimes required (depending on the type of application) and the types of plans and drawings that are required to support an application.

6.1.5 The Department has also issued guidance that describes the minimum documentation that should be supplied with an application to demonstrate compliance with relevant clauses of the Building Code – 'Guide to applying for a building consent (residential buildings)' (second addition October 2010). Although I note this guide is about residential buildings, the guidance is useful in this case as it discusses minimum requirements for documentation.

6.2 The authority's decision to refuse to grant a building consent

- 6.2.1 In section 5.6, I considered the evidence that was provided in support of the proposed building work to demonstrate compliance with the Building Code and that the building work will not adversely affect the performance of the existing building.
- 6.2.2 I have found that there is not sufficient evidence to demonstrate compliance with respect to the relevant Building Code obligations for the building work in question. I also note that in coming to this view, I also considered evidence that has now been presented but that wasn't part of the building consent application.
- 6.2.3 Therefore, I consider there was not sufficient evidence provided as a part of the building consent application and therefore the authority was correct to refuse to grant the building consent.
- 6.2.4 I acknowledge the intentions of the parties and circumstances that preceded the matter being referred to the Department for determination. I accept this matter has implications for other similar proposals. That said, the Act makes specific requirements of both an applicant and an authority when a building consent is being sought; the applicant is required to provide sufficient relevant information to clearly describe the proposed work, and the authority must clearly articulate the reasons for an application being declined (if the application is not adequate).
- 6.2.5 The application for consent included a significant amount of information, some of it specialist in nature that, in my view, had varying degrees of relevance to the proposed work, in terms of scope and the establishment of compliance. The applicant must be mindful of the information it provides in support of any application, and while some information may be 'of interest' to a particular situation, its relevance must always be confirmed before it is included as part of a consent application. If specialist information is provided, it should be accompanied by commentary that explains its role in establishing compliance.
- 6.2.6 At the hearing the authority clearly articulated its concerns about code compliance and this led to a situation where issues related to compliance could be freely discussed: this exchange was extremely useful to all parties. However, I do not believe the written correspondence from the authority to the applicant that preceded this, was sufficient for the applicant to fully understand why the application was declined: this led to the Department needing to seek this information itself.
- 6.2.7 I strongly suggest the parties take cognisance of the above when submitting and processing future applications for building consents.
- 6.2.8 In response to the authority's submission following the draft determination in respect of the questions it has raised about the Building Code compliance of the PSP's methodology (which I have paraphrased in paragraph B.3.1), I note:
- the authority's questions referred to in its submission are not all relevant (as I have described in paragraph 5.3.2) as the PSP's methodology is not what can be considered as an archetypal remediation methodology, as it has a distinct and separate aim from more standard remediation methodologies

- the existing house has a code compliance certificate, and it is therefore important to distinguish between the need for new building work (i.e. the building work in question) to comply with the Building Code, as required by section 17 of the Act, and the need to ensure the building work does not reduce the extent to which the existing building complies with the Building Code, as required by section 112(1)(b) of the Act.

7. What is to be done now

7.1 The building consent application

- 7.1.1 I suggest that the building consent application should be modified and resubmitted, taking into account the findings of this determination. The modified building consent application should clearly state the scope of the work to be carried out and provide the evidence to demonstrate compliance for this work. Sections 5.2, 5.3, 5.4 and 5.5 provide my view of the appropriate methodology to be used to shape the building consent application for this building work.
- 7.1.2 While this determination is about this particular building, much of the determination is relevant to a number of existing determination applications on a similar matter plus more building consent applications yet to be made using the PSP system. As a response to this determination, I expect that the PSP will modify the manual accordingly to update it with new information that this determination has identified. I also expect that the manual have sufficient controls (version numbers and dates, identification of changes etc, sign off protocols) so that should it be used as part of an evidence base for compliance in other cases it is clear to what version it relates to. It is also strongly recommended that the PSP look at a more formal assessment of the methodology using some of the concepts in the Departments guidance on the product assurance framework.⁷
- 7.1.3 Until the shortcomings in the documentation are satisfactorily resolved, the authority is entitled to refuse to grant a building consent on the basis that, without adequate documentation, it cannot be satisfied on reasonable grounds that the provisions of the Building Code will be met if the proposed building work is completed in accordance with the plans and specifications that accompanied the application for the consent (see section 49 of the Act).

⁷ <http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/Product-Assurance-Framework-guidance.pdf>

8. Decision

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

- there is not sufficient evidence to conclude the building work in question complies with the Building Code
- there is not sufficient evidence to conclude the existing building (after the building work has been carried out) will comply with the Building Code to the extent required by the Act
- the authority's decision to refuse to grant a building consent for the proposed work is confirmed.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 23 December 2011.

John Gardiner
Manager Determinations

Appendix A – specific items of work not in dispute

A.1.1 The items of building work described in paragraph 2.2.7 are:

Building element	Proposed work
Roof	<ul style="list-style-type: none"> • replace membrane to upper dormers • install stop ends to apron flashings • install drip-edge flashings behind the roof guttering to the fascias and barges of the upper roof • install drip-edge flashings and sealing of the barge/fascia junction of the dormers • install capping sleeves to penetrations of upper roof • install saddle flashings to parapet/wall connection • retank internal gutter overflow • reclad plaster parapet at the inter-tenancy internal gutter and installation of metal cap flashing • recondition of butyl and seams of internal gutter • shorten of guttering in areas where there is no clearance to cladding and recoat cladding prior to reinstallation • install of spreader to lower roof over the garage • restore of rain head to inter-tenancy wall with weathertightness fixings and install of over flow to rain head • tank of chimney shoulders to protect junctions • remove and repair of cladding at chimney gutter roof junctions and installation of new flashings
Cladding and openings	<ul style="list-style-type: none"> • repair cracks • flash/reseal or install deflecting bands to penetrations • add deflecting bands to gable louvre • add surface movement joints to inter-tenancy wall • repair/reseal window mitres • install deflecting bands (eyebrows) to windows • install sill flashings and sill trays • replace joinery to cavity slider windows • install slot drains to front door
Garage door	<ul style="list-style-type: none"> • install concrete nibs to either side of garage door • install deflecting band (eyebrow) to garage door head
Ground lines	<ul style="list-style-type: none"> • remove gardens and construct concrete nibs or channel drains
Internal wet areas	<ul style="list-style-type: none"> • inspect internal wet areas and associated plumbing and shower units

B. Appendix B – The submissions

B.1 The submissions and requests for information

B.1.1 The determination was applied for by the PSP. The PSP requested the opportunity to speak at a hearing and present evidence. The PSP questioned the decision of the authority to refuse to grant ‘a building consent for building work being alterations under [section 112] in accordance with the attached lodgement application documents. [The authority] responded saying it will not consider the application ...’ The application included:

- copies of correspondence between the applicant, the PSP and the authority
- the building consent application and consent documentation, including:
 - a project lodgement report that includes the building inspection report and the scope of works
 - the PSP’s manual (dated 15 October 2010) that describes the methodology and processes to be used and provides the specifications for the various technologies
 - a reasonable grounds assessment that provides evidence to support the building consent application and describes how the requirements of the Act are met
- documentation and reports supporting the PSP’s methodology.

B.1.2 I have summarised the submissions and requests for information in paragraph B.1.3. Due to the significant quantity and diverse nature of the information provided, I have summarised submissions by topic in paragraphs B.2.1 and B.3.1, however I have not attributed the information to a particular submission.

B.1.3 The following table summarises the main submissions and requests I made for information:

Date	Submissions and requests for information
2 May 2011	Application for determination from PSP dated 28 April 2011.
16 May 2011	Acknowledgement of application and submission from authority dated 13 May 2011.
16 May 2011	Request for information sent to parties. I requested the authority provide its reasons and analysis on which it has based its refusal to grant the building consent (i.e. its written notice in terms of section 50 of the Act). I requested the applicant provide information about the other buildings to which the PSP’s methodology was applied that the authority referenced in its letters to the applicant (refer to paragraph 3.3).
31 May 2011	Response to request for information from PSP dated 31 May 2011.
7 June 2011	Response to request for information from authority dated 2 June.
30 June 2011	Request for information and discussion document for technical hearing sent to parties.

Date	Submissions and requests for information
	I provided a discussion document to serve as a framework for discussions at the technical hearing. I requested answers to a number of questions that I wished to have answered by the parties.
7 July 2011	Response to request for information (discussion document) from authority dated 6 July.
12 July 2011	Response to request for information (discussion document) from PSP dated 12 July 2011.
14 July 2011	<p>Technical hearing attended by:</p> <ul style="list-style-type: none"> • representatives of the PSP, including a legal advisor • a building surveyor and a building expert with a specialisation in building controls and the building regulatory environment, both representing the applicant (and other owners with building consent applications that had been refused (refer to paragraph 3.1 and 3.4) • representatives of the authority • representatives of the Department, including a referee engaged by the Department under section 187(2) of the Act. <p>All parties spoke at the hearing and the evidence presented enabled me to amplify or clarify various matters of fact. I have included the information presented at the hearing as part of my summary of the submissions from the parties in paragraphs B.2.1 and B.3.1.</p>
15 July 2011	Draft request for information (questions to be answered by the PSP agreed to at the technical hearing) for the agreement of the parties.
19 July 2011	<p>Request for information – questions to be answered by the PSP agreed to at the technical hearing.</p> <p>I requested the PSP provide the following information:</p> <p>[In situ treatment (product)]:</p> <p>What effects does the combination of the products to form the insitu timber treatment (i.e. chemical combination and the cumulative effect of mixing the two products) have on:</p> <ul style="list-style-type: none"> • rots and moulds – are the products still effective when combined? • other building elements – does the product cause any degradation of building elements (i.e. fixings, other building materials)? • people/health – does the combination of the products create any hazardous substances (i.e. hazardous substances)? <p>[In situ treatment system (process)]:</p> <p>What is the impact on the existing building/building elements of the product that is put into it – which is a large volume of liquid (i.e. insulation, plaster board etc)?</p>
20 July 2011	Feedback to request for information (questions) from the authority.
21 July 2011, 26 July 2011, 29 July 2011	Submission about request for information (questions) from the PSP.
18 August 2011	Interim submission to request for information (questions) from the PSP.
15 September 2011	Interim submission to request for information (questions) from the PSP.
18 October 2011	Response to request for information from the PSP.
4 November 2011	Draft determination sent to parties.
21 November 2011	Response to draft determination from PSP.
28 November 2011	Response to draft determination from authority.

B.2 The content of the application and PSP's submissions

B.2.1 The PSP submitted the following:

Topic	Submission (paraphrased)
Whether the in situ treatment system is building work that requires a consent	<p>The application of the insitu timber treatment is building work, however, it is maintenance (given it is a one off reactive approach), it is comparable (treated/untreated timber), it is better than, and the impacts of the treatment can be managed and mitigated. Therefore the work does not require a building consent.</p>
Clause B2 - evidence to support code compliance	<p>In the context of this Code clause it must be accepted that most commonly the original building works of the building(s) in question has failed this provision of the Building Code in some respect, or the building was inadequately maintained. This has led to the remediation requirement.</p> <p>Repairs to any building for the purposes of B2, in the context of this system, are for the purposes of extending the durability of those elements that have been worked on, as opposed to all aspects of the entire building.</p> <p>The authority can only turn its attention to those elements that the owner wishes to repair (this is being examined by this determination).</p> <p>To date no issue has been raised in regards to the durability of the new work. The issues relate to any affect on existing structures and materials as a result of the work, in particular the addition of the insitu timber treatment to existing framing, and the practice of leaving some isolated fungi in the building in state. This consideration comes from section 112 of the Act, more specifically about making the building no less compliant than before the alteration.</p> <p>The installation of the insitu timber treatment temporarily raises the moisture content of framing members as the chemical is water borne for the purposes of pressure treatment, and the water acts as the carrier. This carrier water dissipates and dries from the building within 3 to 12 months nominally.</p> <p>Based on empirical data in the space of 3 to 12 months the building will generally return to normal in service moisture contents, except for area of current leaks and south and shaded walls that exhibit little natural drying. The PSP do agree that this is difficult to accurately predict as not all dwellings are habited in the same way by the users i.e. some people ventilate their houses and some people don't, some people heat their houses to higher temperatures than others, and moisture readings are skewed due to the presence of increased levels of treatment chemicals.</p> <p>The three month period is based on a building having ventilation and interior environments that were built code compliant.</p> <p>The authority has raised concerns that the high moisture content over the drying period may cause the insulation in wall cavities to slump. The PSP have photos to show that this is not the case.</p> <p>In addition the authority has suggested that the fixings of internal linings and the linings themselves can be affected by both the chemical treatment and the short term elevated moisture content. Any material found during the remediation to be below acceptable standards would, at the owner's request, be replaced. Treating existing timber framing that has or could be subject to long term high moisture content with the insitu timber treatment will increase the life of those treated elements to those that could be expected from H3.1 treated timber.</p> <p>The ability to post treat and effectively kill moulds and fungi significantly reduce the amount of structural work required to be done.</p>

Topic	Submission (paraphrased)
Clause E2 - evidence to support code compliance	<p>E2.1 and E2.2 and performance E2.3.2</p> <p>This element is not disputed in itself. It is accepted that in many cases, the PSP's methodology are being used where moisture ingress is already an issue. There is an installation system that is fully documented for the purposes of ensuring the building provides adequate resistance to penetration by, and the accumulation of, moisture from the outside.</p> <p>Performance E2.3.5</p> <p>The industry accepts and there is plentiful evidence to show the affects of moisture within the framing spaces. There is also clear understanding of the risks associated with long terms high moisture content, particularly where that moisture content is undetected, in the context of the affect on framing strength (B1 Structure) and the development of various moulds, rots and fungi. The insitu timber treatment provides for the post treatment of framing timber so that should moisture gain access to concealed spaces, the timber is able to better resist the affects of various moulds and rots.</p> <p>A recognised industry expert in the analysis and identification of moulds, rots, and fungi has tested and shown than the insitu timber treatment can significantly reduce the ability for moulds, rots, and fungi to grow in timber treated with the insitu timber treatment, and at levels of resistance in excess of current H1.2 treatment standards. In addition, the timber expert's research shows that post treatment of the framing can kill most existing moulds, rots and fungi's present in moisture affected timber.</p> <p>By post treating the timber and killing the present moulds and rots and fungi, the need to remove and replace large areas of timber framing and the removal of large sections of cladding to access timber for post treatment is significantly reduced. This can reduce costs associated with remediation.</p> <p>The installation of the drying skirts means that the spaces where moisture is most likely to collect (mid storey and bottom plates) can be exposed to air movement in a similar way to a modern drained cavity, which in turn assists the other areas of the building walls to dry through redistribution.</p> <p>The plaster systems applied over the existing cladding material, the paint systems, associated flashing and processes are all based around the acceptable solutions and verification methods to/of E2.</p>
Clause E3 - evidence to support code compliance	<p>E3.1</p> <p>Clause E3 relates to the accumulation of moisture as a result of the building use and relates to an extended period of time, not the short term affects of adding timber treatment to framing. For the purposes of the in situ timber treatment, moisture in the spaces is as a result of E2 not E3.</p> <p>E3.2</p> <p>The addition of the insitu timber treatment has been shown to kill and significantly reduce the ability of moulds and fungi to grow within concealed spaces at least equivalent to current methods.</p> <p>Most damage caused by high moisture content in timber is associated with the growth or promotion of growth of moulds and fungi in timber (primarily cellulose food sources) that reduce, over time, the structural performance of the particular elements affected. In many cases high moisture content in framing can transfer to other building elements and in the long term cause them to breakdown, lose their structural integrity, rust and the like.</p> <p>Performance E3.3.1</p> <p>This Code clause relates to the way people behave and does not specifically relate to the insitu timber treatment system.</p>

Topic	Submission (paraphrased)
Clause F2 - evidence to support code compliance	<p>F2.1 and F2.2</p> <p>The PSP's process includes ensuring that people do not sleep in rooms where the treatment has been supplied for 3 nights. Owners are also notified of the need to ventilate the spaces. Where the treatment is associated with the drying skirts or other repairs, obviously the treated timber will be exposed, which will speed up the drying process. Following the flash off period the product is no more dangerous than that of H3.1 treated timber brought new from a timber supplier fresh from a mill. This material is typically used in house renovations and the like where it is covered over relatively quickly.</p> <p>Once past the flash off period the treated timber is contained in the cavity, in the same way as for every other building constructed using H3.1 or H3.2 framing timber. People are unlikely to come into contact with the treatment unless for some reason they remove the internal linings, in much the same way as for any timber framed dwelling.</p> <p>Performance F2.3.1</p> <p>The timber framing is typically enclosed in the wall cavity in the same way as for any other dwelling. Testing has shown that giving directions to building users not to sleep in spaces recently treated until after flash off mitigates the risk and in any case there is unlikely to be significant amounts of free flowing chemicals that could cause health concerns for building users.</p>
Clause F1 - evidence to support code compliance	<p>F1.1</p> <p>Hazardous agents on site can come in a range of forms. Typically this requirement applies to sites where the history of the site has shown the site has been used for purposes that may have lead to contamination of the site itself, as a pose to the affect of building materials. Even if a conservative view of this requirement is taken, the period of time when the insitu timber treatment is not flashed, is managed by the PSP's process (as per Clause F2).</p>
Matters relating to the regulatory framework	<p>The PSP raised a large number of questions (paraphrased) relating to the regulatory framework that the PSP believed the determination must address:</p> <ul style="list-style-type: none"> • What powers does the authority have to require an owner to undertake building work: <ul style="list-style-type: none"> ○ If the house has a code compliance certificate? ○ If the house does not have a code compliance certificate? • Is an owner required to seek a code compliance certificate for a building with an open building consent? • Can alterations to an existing building under section 112 be undertaken on a building without a code compliance certificate? • Is it a requirement that the purpose of the building work is explained/defined? • What is the process for dangerous and insanitary buildings in terms of the responsibility to identify whether a building is dangerous of insanitary, the obligations of the owner (identification and steps required)? • With respect to the scope of the consent: <ul style="list-style-type: none"> ○ what is the appropriate description of the work for the record of the work and the extent of compliance achieved? ○ can the authority consider other parts of the building e.g. if other parts of the building have leaks that are not addressed by the proposed work or if the existing defects may affect the proposed work ○ can the authority control the scope of the consent or if the authority is aware of defects, is the scope of the consent required to cover all of these?

Topic	Submission (paraphrased)
	<ul style="list-style-type: none"> • What is reasonable information that an authority can require e.g. case studies, technical opinions, and is a comparison with an Acceptable Solution required for each? • What is reasonable information that an authority can require e.g. case studies, technical opinions, and is a comparison with an Acceptable Solution required for each? • Are there any grounds for which an authority can require an owner to apply for an amendment to a building consent during the building work? • Are there any questions, other than does the building work comply with the building consent, that an authority can ask prior to the issue of a code compliance certificate? • What is undue moisture, does the level of moisture deemed to be undue depend on the building, and what is the impact of the insitu treatment on this? • Is the authority required to monitor the performance of building work after the work is completed? Is the owner required to provide the authority with readings from the moisture monitoring system before a code compliance certificate is issued?
Matters relating to the draft determination	<p>The PSP accepted the draft determination but requested consideration of the issues relating to whether the work was building work and whether a building consent was required.</p> <p>The application of in situ treatment does not require consent. The application does not change anything within the air, the physical properties of the wall or the mechanics of the wall cavity. The size of the framing, its use, position etc do not change, the application is a process and not a building element, the in situ treatment chemicals are like paint, and are salts which perform no function within the design, use etc, the application does not alter bracing, energy, weathertightness performance etc.</p> <p>The application can vary considerably area to area and framing to framing and as such requiring consents will put undue cost and debate into this with building consent authorities.</p> <p>With respect to maintenance, decay is not an absolute concept. The means of maintaining the structure of the building can be done by removing and replacing framing, recladding (which changes the environmental conditions of the framing) or the in situ treatment application. The concept of how to stop further decay of already decaying wood is just like painting a rood with some rust but not enough to warrant removal/replacement. Having such a generalisation within the Building Code is dangerous as older buildings may also suffer decay and are outside the 15 year durability period. On this basis the in situ treatment application is the process of keeping a building element durable and as such is maintenance.</p>

B.3 The content of the authority's submissions

B.3.1 The authority submitted the following:

Topic	Submission (paraphrased)
Why the building consent was refused	<p>The [authority] issued four building consents using the [PSP's methodology] ... These consents were issued on the basis that the building required ongoing monitoring of the moisture probes, to confirm that the moisture ingress issues had all been addressed satisfactorily. The information was to assist in confirming compliance with [Clause E2 of the Building Code]. The property owners were advised at the time of issue of the building consent that the proposed methodology to remediate their dwellings was not proven and the dwellings would require ongoing monitoring and potentially may require further work to establish compliance.</p>

Topic	Submission (paraphrased)
	<p>It has now been approximately 2 years since the consents were issued and the work has progressed on at least two of the buildings ... to the point where the consented works have been completed. [The authority has] viewed the latest moisture probe readings from these buildings, taken in the last few weeks, showing some elevated readings. The conclusion being, that even though the consented works are complete, there are still moisture ingress issues.</p> <p>The consented works on the buildings referred to above, have not achieved the desired outcome of addressing moisture ingress issues and therefore [the authority is] not able to be satisfied they are code compliant. Until satisfied compliance with the [Building Code] can be achieved using the [PSP's methodology], [the authority is] unable to issue any further building consent proposing to use [the PSP's methodology].</p> <p>... [The authority is] uncertain what effect [the in situ treatment] has on the moisture reading and have difficulty in comparing the latest readings with those taken prior to the introduction of the [in situ treatment]. As [the authority] indicated to the owners [the in situ treatment system] is not a proven process and the current moisture readings provide a complication in establishing compliance with the [Building Code]. ...</p> <p>It is appreciated that the contents of this letter will cause you concern, however, [the authority] would be failing in its statutory obligations under the Building Act if it failed to be satisfied that compliance can be achieved.</p> <ul style="list-style-type: none"> • There are unanswered questions and a lack of information provided in support of the building consent application • There has been no testing to recognised standards or independent peer review of the PSP's methodology to establish compliance with a number of Building Code clauses • The in situ treatment system is building work that requires a building consent and should form a part of the building consent application • The specific matters the authority are questioning are: <ul style="list-style-type: none"> ○ the independent testing and calibration used to establish the accuracy of the moisture probes ○ the reading of the moisture probes pre and post the in situ treatment ○ the accuracy of and the standards for the visual inspection of timber ○ the calibration of the timber strength measurements ○ the process for doing work to various categories of timber, the categories of timber to which replacement is necessary, when in the process this occurs, and the identification of timber as satisfactory when it is not observed ○ the effect on the timber condition and strength by the reduction of the moisture content ○ the length of time required for diffusion of the moisture, and the levels of moisture that are acceptable ○ the effect of the in situ treatment system on other building elements, including insulation, the thermal performance of the walls, external cladding, internal wall linings, and other elements such as fixings and adhesive, and whether the treatment leads to undue dampness ○ the acceptable level for active fungal hypae to remain in place and how the level is monitored
Whether the in situ treatment system is building work that requires a consent	The in situ treatment system is building work that requires a building consent. It does not fall under any of the exemptions listed in Schedule 1 Exempt building work. It is not appropriate to exempt the building work under paragraph k of Schedule 1.

Topic	Submission (paraphrased)
What the tests and measures are to be applied to a scope of work limited to specific items of building work	There needs to be some clarity around buildings with code compliance certificates and those without.
How the provisions of the Act apply for repairs to buildings	<p>Often there are building works proposed which are reliant on previous building works to achieve compliance. When assessing a building consent application for alterations on a building, the authority can rely on the code compliance certificate as confirming the previous works as compliant at the time of the issue of the code compliance certificate.</p> <p>In the instance when the previous building works do not have a code compliance certificate, the authority has nothing to rely on confirming the compliance of the previous works or building at a previous point in time.</p> <p>Building work without a code compliance certificate cannot be considered as existing in terms of section 112 and the authority must consider the work without a code compliance certificate and the proposed work together where the alterations are reliant on previous construction.</p>
Matters relating to the draft determination	<p>The authority did not accept the draft determination.</p> <p>A number of the questions raised on the overall performance and impact on the building that the methodology would have, have been answered, however the authority agreed that there was insufficient information to provide reasonable grounds that the building work in question will comply with the Building Code.</p> <p>The question is how do the authority's questions and possibly others be satisfactorily answered, on reasonable grounds, that the work is code compliant.</p> <p>It is the applicant's responsibility to show how compliance with the Building Code will be achieved and a peer review is not appropriate as the PSP should have already done this.</p>