

## ***Determination 2005/50***

# ***Refusal of a code compliance certificate for a building with a “monolithic” cladding system: House 42***

### **1 THE DISPUTE TO BE DETERMINED**

- 1.1 This is a determination of a dispute referred to the Chief Executive of the Department of Building and Housing (“the Chief Executive”) under section 17 of the Building Act 1991 as amended by section 424 of the Building Act 2004 (“the Act”). The applicant is the owner and the other party is the territorial authority. The application arises from the refusal by the territorial authority to issue a code compliance certificate for a 2-year old house, unless changes are made to its monolithic cladding systems.
- 1.2 The question to be determined is whether on reasonable grounds the monolithic wall cladding as installed to all the external walls of the house (“the cladding”), complies with the building code (see sections 18 and 20 of the Act). By “the monolithic wall cladding as installed” I mean the components of the system (such as the backing sheets, the flashings, the joints and the plaster and/or the coatings) as well as the way the components have been installed and work together.
- 1.3 This determination is made under the Building Act 1991, subject to section 424 of the Building Act 2004. That section came into force (“commenced”) on 30 November 2004, and its relevant provisions are:
- “ . . . on and after the commencement of this section,—
- “(a) a reference to the Authority in the Building Act 1991 must be read as a reference to the chief executive; and
- “(b) the Building Act 1991 must be read with all necessary modifications to enable the chief executive to perform the functions and duties, and exercise the powers, of the Authority . . . ”

It should be noted that the new legislation does not amend the determination process set out under the 1991 Act, other than to transfer the power to make a determination from the Building Industry Authority (“the Authority”) to the Chief Executive.

- 1.4 This determination refers to the former Authority:
- (a) When quoting from documents received in the course of the determination, and
  - (b) When referring to determinations made by the Authority before section 424 came into force.
- 1.5 In making my decision, I have not considered any other aspects of the Act or the building code.
- 1.6 The house itself is described in paragraphs 2.1 to 2.3, and paragraph 8 sets out my decision.

## **2 PROCEDURE**

### **The building**

- 2.1 The building is a two-storey detached house with a single storey attached garage, situated on a sloping excavated site in a medium wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The house is of conventional light timber frame construction on concrete block foundation walls, and all the external walls are sheathed with monolithic cladding. The house is of a relatively simple shape with the steel tiled roofs at two main levels having hips, valleys, and wall to roof junctions. The upper storey is cantilevered 500mm over the ground floor for a length of 5700mm over the living room doors and windows. The house has a balcony with a tiled deck at the upper level that is constructed entirely over a living space. The balcony has a timber-framed balustrade to its front and side edges that has monolithic cladding to both faces and to the top. The inner face of the balustrade has two layers of backing board and the top has a double waterproof membrane and plastered polystyrene bands planted onto both edges. A timber-framed and boarded deck with associated steps adjoins two elevations of the house. A plastered polystyrene projecting band has been planted over the horizontal control joint at the inter-floor level. The house has eaves and verges with 100mm wide projections.
- 2.2 The territorial authority understands in its “Supporting Evidence” that there is some treatment of timber framing (See paragraph 4.1.4). However, no evidence has been provided to me as to what treatment, if any, was applied to the timbers used for the exterior wall framing.
- 2.3 The cladding system is what is described as monolithic cladding. As specified in the manufacturer’s data sheets (“the manufacturer’s instructions”), the cladding to the walls of the main building incorporates 7.5 mm thick fibre-cement backing sheets fixed through the building wrap directly to the wall framing. Over the backing sheet a 5 to 6mm thick texture coated mineral plaster is applied. The manufacturer’s instructions include details for flashings and finishing at various junctions and for

flashings and/or sealants to the heads, jambs and sills of exterior joinery units. I note that the cladding system applied to the house is different from the one described on the consent plans, and the territorial authority has noted that this amendment was not lodged with or approved by the territorial authority. In this respect, I note that the building certifier in the report detailed in paragraph 2.7 advised the owner to check whether the territorial required an amendment to the consent for this change.

- 2.4 The supplier of the backing board plaster system provided a “Statement of Evidence” that listed the remedial work carried out on the cladding, and which is detailed in paragraph 3.3.

### **Sequence of events**

- 2.5 The territorial authority issued a building consent on 10 September 2001. The territorial authority noted on the consent:

Clause B2 (Section 2) of the Building Codes Acceptable Solutions specifies the requirements relating to the durability of specific building elements

Please note that many of these elements require regular maintenance to be undertaken to achieve the durability requirement

Monolithic claddings to the exterior of buildings require regular inspection and maintenance to ensure the integrity of the surface is maintained to prevent entry of water into the underlying materials.

- 2.6 A firm of building certifiers carried out various inspections during the course of the construction of the house and passed the Preline (Insulation) inspection on 5 October 2001 and the Preline (Building) inspection on 8 October 2001.

- 2.7 Following a site visit, the building certifier issued a list of items that required further investigation or remediation dated 2 November 2001. The items relating to the external cladding system were:

Plans specify [named product] but substitute product installed. Check whether [territorial authority] require an amendment to consent,

Garage wall appears not to be constructed to 30/30/30 (refer [manufacturer's] data sheet) which requires fyreline gib and S/S fixings

Several areas of cladding system would appear to currently allow the ingress of moisture due to lack of flashings (garage door), incorrectly installed flashings (front door), base detail at front entry incomplete. Note exposed and wet batts. Internal seals are undersize and poorly positioned, downpipe not installed, system not yet sealed. This raises the question of moisture penetration to the framing and its durability especially if untreated.

No control joints.

The building certifier also requested a “Producer Statement Construction Review” from the cladding installer confirming that the exterior cladding had been installed in accordance with the technical specifications and met the requirements of the New Zealand Building Code.

2.8 In a letter dated 28 January 2003, the territorial authority informed the owner that the building certifier had notified it that the building certifier was no longer able to complete the inspections on the house nor issue the code compliance certificate. The building consent had been returned to the territorial authority for completion, and the owner was advised to contact the territorial authority with regard to future inspections.

2.9 The territorial authority carried out a site inspection on 27 May 2004, and subsequently issued a Notice to Rectify dated 14 June 2004, together with a set of photographs illustrating items of non-compliance. The “Particulars of Contravention” attached to the Notice to Rectify noted:

A site inspection of [the] property carried out on the 27 May 2004 revealed that the exterior cladding of the new building constructed at the above address is a monolithic cladding system (Plaster finish on [Named] sheeting]) with no provision for ventilation of the wall space. Furthermore the exterior claddings have been installed otherwise than in accordance with the acceptable solutions of the building code and accepted trade practices as detailed below.

1. The following have not been installed per the manufacturer's specifications
  - Sill flashings are to be installed to all window joinery units. These flashings have not been installed.
2. The following items have not been installed per the acceptable solutions of the building code, (no alternative solutions have been applied for)
  - The hot water heater shall be adequately supported to resist earthquake forces. This has not been achieved.
  - The minimum finished floor level to finished paved level is 150mm. This has not been achieved at the junction of the step to the eastern deck.
  - Service penetrations in fire rated walls must be fire stopped in accordance with C/AS1 in order to meet the provisions of the NZ Building Code – internal fire spread or structural collapse close to a relevant boundary. The meter box and telecom services are non-compliant with the Building Code.
3. The following items have not been installed per accepted trade practice
  - All flashings are to be installed in such a way as to direct water away from the building, and prevent ingress of moisture. The windows have no sill flashings installed.
  - A minimum clearance of 50mm is required between the cladding and adjacent surfaces. There is minimal clearance between the deck level and wall claddings.
  - Penetrations through the cladding system shall be as waterproof as the cladding itself. There are a number of penetrations through the cladding that should be protected with rubber flanges and silicon, and in the case of the meter box and the clothesline penetrations, no flashings have been installed.

- All horizontal surfaces shall be formed with a minimum of a 15-degree slope to prevent water from ponding. The top of the deck barrier has minimal slope.
- Timber decking and the like are to remain clear (horizontally) of the cladding. Decking has been installed against the cladding.

4. Ventilated cavity system

- The Council has recently received information which shows that monolithic cladding systems without a drainage plane/cavity, provision for adequate ventilation, drainage and vapour dissipation will, in the likelihood of leakage and/or the effects of residual moisture, cause irrevocable damage to the structural elements of the building.

The Council cannot be satisfied that the above building meets the performance requirements of Clauses B1 Structure, B2 Durability, E2 External Moisture, E3 Internal Moisture, G4 Ventilation and H1 Energy Efficiency Provisions of the Building Code...This is in breach of Sections 7(1), of the Building Act 1991...

Also that the owner was required to:

1. Provide adequate ventilation to the monolithic cladding and into the wall frame space by means of either a ventilated cavity or alternative approved system, and ensuring all issues related to the above are resolved.
2. Lodge with the council an application, within 28 days from the date of this notice, for an amended building consent, and provide all necessary information that may be requested to allow this consent application to be processed, alternatively.
3. Confirm to council, within 28 days from the date of this notice, your intention to apply to the Building Industry Authority for a determination in accordance with the Building Act 1991

2.10 The owner applied for a determination on 27 June 2004.

### **3 THE SUBMISSIONS**

3.1 The owner attached a "Statement of Evidence" to the determination application. In this, the owner noted his experience as a structural engineer and stated that he was the project manager for the house. With regard to the cladding, the owner had taken steps to ensure that it was installed correctly and the manufacturer had issued a producer statement for the cladding. The product used on the house complied with the building code in an uncoated state and it should not be compared with other similar products in the context of leaking buildings. The minor issues that the territorial authority had raised in relation to penetrations will be rectified. More specifically the owner noted:

- A clearance of approximately 20 mm exists between the underside of the cladding and the upstairs deck tiles, as compared with the 30mm minimum

requirement of an acceptable solution. As the deck in question had a very small catchment area and had considerable fall to its outlet there was virtually no risk of ponding. In addition, there was also a full drip edge formed at this junction;

- As the balustrade to the eastern deck had been constructed with double layers of both sheeting and waterproofing, the risk of water penetration was negligible. In addition, the installer had issued a producer statement covering the waterproofing system; and
- The timber decking has been constructed against the block foundation and not against the cladding.

3.2 The owner also provided copies of:

- The building plans and specifications;
- The building consent;
- The Notice to Rectify;
- Inspection records from the building certifier and the territorial authority;
- The correspondence with the territorial authority and the building certifier;
- A “Statement of Evidence” from a technical representative of the cladding importer and distributor;
- The waterproofing installer’s Producer Statement; and
- Two drawings showing the balcony balustrade details.

3.3 The “Statement of Evidence” from a technical representative of the cladding importer, dated 22 September 2004, stated that the representative had noted items requiring remediation, that these had been attended to, and that the specifications had now been met. The remedial works carried out were:

- Inseal tapes behind control joints;
- Additional control joints installed;
- Correct termination and weathering of roof apron flashings;
- Additional waterproofing at wall to floor junctions at entry and outside stairs area;
- Re-nailing of firewall to garage with stainless steel nails;
- Additional waterproofing to deck handrail;
- Provision of drip edge to internal wall of balustrade with adequate clearance to the tiles;

- Replaced damaged sheets where necessary;
- Ground out tapered edge joints; and
- Preparing in general and ready for approved plastering system.

The representative also noted that the plasterer had checked the substrate prior to the application of the plaster.

3.4 The territorial authority forwarded a lengthy submission. The bulk of the submission was a general comment on monolithic cladding, although some of the material related to this particular extension, and stated that:

- The principle design and current construction methods for the wall assembly do not provide for ventilation and a drainage plane. In the event of a failure of any claddings deflection methods moisture will enter and accumulate in the wall framing hereby breaching (*sic*) the Building Act.
- Secondly the building materials in the wall assembly are inadequate to withstand moisture accumulation as there is no allowance or compensatory factors in the design to allow for the consequence of failure of the system components or the system as a whole.. The inevitable failure to keep water out will wet the timber frame meaning conditions will exist in the wall likely to cause the timber and other materials in the wall to degrade and be incapable of lasting 50 years as required by the Building Act. This is in part due to the design of the wall not having a drying mechanism other than the natural condition of drying by diffusion through the paint coatings which experience shows is too slow to avoid moisture growth. Where moisture ingress continues or is greater than the natural drying forces moisture accumulation occurs which affects the durability of the timber and the plasterboard.
- The third failure of the cladding system is that it is inadequately designed to allow for the expected movement associated with timber frame construction, and thereby cracks will form and sealants tear letting water in. Work in excess of normal maintenance will be required to keep the FIBRE-Cement (FC) system, its jointing system and sealants watertight such that moisture will enter and accumulate in the framing, fibreglass insulation and plasterboard such that mould will grow.
- Fourthly the wall cladding system is inadequately insulated and does not manage or control the climatic conditions expected at this buildings location such that condensation can occur and breach (*sic*) the code.
- [The territorial authority] points out that there are already numerous defects in the cladding envelop meaning that the building will remain in breach of the code due to the above reasons. Attempts at rectification or directing the responsibility to the homeowner under the title maintenance are in the Councils opinion unfair as these were not pointed out to the Council when the permit issued.

3.5 The submission also included a copy of the Notice to Rectify, and a set of photographs, illustrating some of the territorial authority's concerns.

3.6 The territorial authority felt that it must refuse to issue a code compliance certificate on the grounds that there was insufficient scientific evidence on the performance of these building elements.

3.7 In a subsequent letter to the Authority dated 20 August 2004, the territorial authority elaborated on its original submission and stated that its areas of concern were those itemised in the Notice to Rectify and then listed them in detail. The territorial authority, using the risk matrix contained in the revised Acceptable Solution E2/AS1, calculated the weathertightness risk to the house to be high. Apart from further generalised comments, the territorial authority commented on the owner's submission. In summary, these comments were:

- The cladding system used may not have been installed in accordance with the manufacturer's specifications, on which the territorial authority based its assessment of the cladding. The territorial authority did not have to accept the producer statement, and it was unaware of any amendment having been lodged or approved for the change in cladding from that shown on the consent documentation;
- As the bottom of the cladding should be a minimum of 50mm above the finished deck level, the territorial authority believes that the existing 20mm gap is unacceptable;
- The recommended 10-degree angle to the top of parapets and deck barriers is based on proven weathertightness principles and this requirement is in the manufacturer's specifications; and
- The deck has not been installed against the masonry foundation wall in all cases.

3.8 In a letter dated 2 October 2004, the owner commented further on the points raised by the territorial authority in its letter of 20 August 2004. The owner noted:

- The cladding system used is by all accounts a far superior product to the product shown on the consent documentation, and any negative literature relating to the latter product should not be relevant to this determination;
- The owner assumed that the base clearances given or recommended by the building code or the manufacturer are arbitrary and without any scientific basis. If they were on such a basis, they would relate to the issues of ponding and water ingress and the owner had pointed out the small deck catchment area and the steep falls that reduce the risk of ponding; and
- While a 10-degree slope to the top of the parapet and deck barriers may work, other systems, such as the ones installed, may also work and be an even more satisfactory weathertight solution.

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

## 4 THE RELEVANT PROVISIONS OF THE BUILDING CODE

4.1 The dispute for determination is whether the territorial authority's decision to refuse to issue a code compliance certificate because it was not satisfied that the cladding complied with clauses B2.3.1 and E2.3.2 of the building code (First Schedule, Building Regulations 1992) is correct. The relevant provisions of the building code provide:

### Clause B2—DURABILITY

**B2.3.1** Building elements must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the specified intended life of the building, if stated, or:

- (a) The life of the building, being not less than 50 years, if:
  - (i) Those building elements (including floors, walls, and fixings) provide structural stability to the building, or
  - (ii) Those building elements are difficult to access or replace, or
  - (iii) Failure of those building elements to comply with the building code would go undetected during both normal use and maintenance of the building.
- (b) 15 years if:
  - (i) Those building elements (including the building envelope, exposed plumbing in the subfloor space, and in-built chimneys and flues) are moderately difficult to access or replace, or
  - (ii) Failure of those building elements to comply with the building code would go undetected during normal use of the building, but would be easily detected during normal maintenance.

### Clause E2—EXTERNAL MOISTURE

**E2.1** The objective of this provision is to safeguard people from illness or injury, which could result from external moisture entering the building.

**E2.2** Buildings shall be constructed to provide adequate resistance to penetration by, and the accumulation of, moisture from the outside.

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

4.2 There are no Acceptable Solutions that have been approved under section 49 of the Act that cover this cladding. The cladding is not accredited under section 59 of the Act. I am therefore of the opinion that the cladding system as installed can be considered to be an alternative solution.

4.3 In several previous determinations, the Authority has made the following general observations about acceptable solutions and alternative solutions, which in my view remain valid in this case.

- Some acceptable solutions cover the worst case, so that in less extreme cases they may be modified and the resulting alternative solution will still comply with the building code.
- Usually, however, when there is non-compliance with one provision of an acceptable solution, it will be necessary to add some other provision to compensate for that in order to comply with the building code.

## **5 THE EXPERT'S REPORT**

5.1 The Authority commissioned an independent expert ("the expert") to inspect and report on the cladding. The expert inspected the building after the remedial work described in paragraph 3.3 had been carried out, and furnished a report dated 17 November 2004. It stated that the property has been constructed to a good standard using good trade practices. The expert removed small sections of the plaster around various windows and doors to examine the jamb sealants, and found that appropriate sealants are present. The expert also removed a section of the band covering the inter-storey joint and found that the joint and polystyrene cover were well formed and well sealed. The expert's report made the following specific comments on the cladding.

- A gap has not been provided at the junction of the north elevation louvered window sill and the cladding below it;
- There is minor cracking to the sheet joints on the east wall of the garage;
- There is insufficient ground clearance at the base of the cladding in some locations, including the balcony balustrade;
- A small section of cladding that is exposed at the base of the balcony balustrade is not coated or sealed; and
- The area of rear timber framed floor requires the installation of adequate ventilation.

5.2 The expert carried out a series of moisture tests of the exterior cladding, using a non-invasive meter, and a further series of invasive tests to the framing where previous elevated readings had occurred. All the readings taken were between 14% and 15.5%. Invasive tests at the rear timber floor produced moisture readings of 8% to 12.7%. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

5.3 The expert also noted the evidence of light fungal growth on the sub-framing of the rear timber-framed floor. The expert recommended that the flooring timbers be re-treated insitu to prevent fungal growth.

5.4 The expert further clarified some of the issues raised in the report:

- In the expert's opinion flashings were not required to the sills of the external windows and doors;
- There is sufficient slope to the top of the balcony balustrade;
- The rectified penetrations through the cladding were satisfactory; and
- The timber decks and steps needed to be spaced away from the cladding.

5.5 Copies of the expert's report were provided to each of the parties.

## **6 DISCUSSION**

### **General**

6.1 I have considered the submissions of the parties, the expert's report and the other evidence in this matter. The approach in determining whether building work complies with clauses B2.3.1 and E2.3.2, is to examine the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing.

### **Weathertightness risk**

6.2 Recent research and experience, both internationally and locally, indicates that the impact of weathertightness problems in monolithic clad houses can be minimised if good and effective design and construction practices are followed.

6.3 The installation of exterior cladding to manufacturer's specifications and to accepted good trade practice is an important but not the only requirement to ensure good weathertightness performance.

6.4 The next priority is to reduce the ability of moisture to get through the cladding by using design measures that minimise the effects of the rain impacting on the walls.

6.5 I consider that the important matters for consideration are:

- Data show a strong relationship between the width of the eaves and the incidence of wall leaks. An effective deflection mechanism, such as eaves greater than 600 mm wide, has been shown by Canadian data to manage more than 90% of rain incidence;
- While most reported leaks are substantially caused by defects in the cladding that require little or no wind pressure differential, it is believed that buildings in high and very high wind zones (as defined by NZS 3604) are likely to experience wind pressure differentials and thus a higher risk of water ingress;

- Taller buildings result in an effective increase in the catchment area of the wall. Available data suggest a clear correlation between higher number of storeys and an increased incidence of leaking;
- Complex roofs and overall envelope shapes where the roofs frequently intersect with the walls on upper floors create opportunities for leaks into the wall; and
- Recent data also shows that decks and balconies that are exposed in plan and/or cantilevered from the external walls are the most frequent location for water leaks.

6.6 Any likely penetration of moisture through the cladding can then be countered by a combination of effective drainage, ventilation of the drainage cavity and moisture tolerance in the external wall framing timber. In particular:

- The structure should allow water that has penetrated the cladding to drain out as quickly as possible. It is believed that generally a drainage cavity should be provided behind the outer cladding barrier in monolithic construction;
- The design of the outer walls should allow walls to dry to the outside once moisture penetrates the cladding and the moisture barrier. If walls do not dry, decay fungi can become established in as little as 3 months. Until scientific data on the optimum depth and configuration of the ventilation mechanism in New Zealand conditions is available, I consider that the drainage cavity should be not less than 20 mm deep; and
- The external walls should have some degree of decay resistance or moisture tolerance to allow for situations when moisture circumvents the cladding and moisture barriers and moisture levels in the timber rise to more than 18%.

6.7 In relation to these characteristics, I find: that the house:

- Has eaves and verge projections 100mm wide that provide virtually no protection to the lower cladding;
- Is built in a medium wind zone;
- Is two storeys high;
- Is basically simple on plan, having roofs at two levels with hips, valleys and roof to wall junctions;
- Has a high level balcony built over a living area and a ground floor level deck; and
- Has external wall framing constructed with untreated timber that is likely to decay if it absorbs and retains moisture.

## **Weathertightness performance**

- 6.8 I have carefully considered the principal points in the territorial authority's main submission (and outlined in paragraph 3.4).
- 6.9 The territorial authority's general submission effectively questions the technical basis of a number of the benchmarks for assessing the likely code compliant performance of timber-framed construction in New Zealand and proposes that an alternative (and more conservative) benchmark be used to assess likely building code compliance for monolithically-clad buildings within its jurisdiction. The Authority considered and commented on these issues in determination no 2004/41. In essence, the Authority determined that the performance of building elements as installed in a house should be based on code compliance benchmarks established in the new external moisture acceptable solution E2/AS1, together with observations of the current state of the building, and not on the higher performance levels suggested by the territorial authority. Accordingly, I have followed the Authority's approach in this determination.
- 6.10 Generally the cladding appears to have been installed according to good trade practice, and I consider it has been effective to date in preventing the penetration of water. There are however some defective features of the house, which if not remedied, will eventually allow the ingress of moisture behind the cladding. These are set out below:
- A lack of a gap at the junction of the north elevation louvered window sill and the cladding below it;
  - The minor cracking to the sheet joints on the east wall of the garage;
  - The insufficient ground clearance at the base of the cladding in some locations, including the balcony balustrade;
  - An exposed small section of cladding at the base of the balcony balustrade that is not coated or sealed;
  - The spacing of decks and steps where these presently abut the clad timber-framed walls; and
  - The lack of adequate ventilation under the rear timber framed floor.
- 6.11 Notwithstanding the fact that the backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding sheets, I find that there are compensating factors that assist the performance of the cladding in this particular case. These are:
- Generally, the cladding appears to have been installed according to good trade practice; and
  - There is no moisture evident at this time in the external wall cavities.

- 6.12 I consider that these factors adequately compensate for the lack of a full drainage and ventilation cavity and can allow the house to comply with the weathertightness and durability provisions of the building code.
- 6.13 The expert has recommended that the sub floor timbers showing signs of fungal growth should be suitably treated. I recommend that this matter be investigated and appropriate rectification of the timber be carried out to ensure continuing code compliance.
- 6.14 I note that one elevation of the house demonstrates a low weathertightness risk rating, two elevations demonstrate a moderate weathertightness risk rating, and one elevation demonstrates a high weathertightness risk rating using the E2/AS1 risk matrix. The matrix is an assessment tool that is intended to be used at the time of application for consent, but must be supplemented at the time of issuing a code compliance certificate by careful inspection of the building as actually built.

## **7 CONCLUSION**

- 7.1 I consider that the expert's report establishes there is no evidence of external moisture entering the house, and accordingly, that the monolithic cladding does comply with clause E2 at this time.
- 7.2 However, the building is also required to comply with the durability requirements of clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the building code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the cladding faults in the house are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.
- 7.3 I also consider that because the faults in the house cladding occur in discrete areas, I am able to conclude that rectification of the identified faults is likely to bring the cladding into compliance with the code. Once the cladding faults listed in paragraph 6.10, have been satisfactorily rectified, this house should be able to remain weathertight and thus comply with both clauses E2 and B2.
- 7.4 I note that effective maintenance of monolithic claddings is important to ensure ongoing compliance with clause B2 of the building code. That maintenance is the responsibility of the building owner. The code assumes that the normal maintenance necessary to ensure the durability of the cladding is carried out. For that reason clause B2.3.1 of the building code requires that the cladding be subject to "normal maintenance". That term is not defined and I take the view that it must be given its ordinary and natural meaning in context. In other words, normal maintenance of the cladding means inspections and activities such as regular cleaning, re-painting, replacing sealants, and so on.
- 7.5 I emphasise that each determination is conducted on a case-by-case basis. The fact that a particular cladding system has been established as being code compliant in

relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.

7.6 I decline to incorporate any waiver or modification of the building code in this determination.

## **8 THE DECISION**

8.1 In accordance with section 20 of the Act, I determine that the house is weathertight now and, therefore, the cladding complies with clause E2. However, as there are a number of items to be remedied to ensure it remains weathertight and thus meet the durability requirements of the code, I find that the house does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue the code compliance certificate.

8.2 I find that once the items of non-compliance that are listed in paragraph 6.10 are rectified to the approval of the territorial authority, together with any other instances of non-compliance that become apparent in the course of rectification, the cladding as installed on the house will comply with the building code, notwithstanding the lack of a drainage cavity.

8.3 I note that the territorial authority has issued a Notice to Rectify requiring provision for adequate ventilation, drainage and vapour dissipation. Under the Act, a Notice to Rectify can require the owner to bring the house into compliance with the building code. The Authority has already found in a previous determination (2000/1) that the Notice to Rectify cannot specify how that compliance can be achieved. A new Notice should be issued that requires the owner to bring the cladding into compliance with the building code, without specifying the features that are required to be incorporated. It is not for me to dictate how the defects described in paragraph 6.10 are to be remedied. How that is done is a matter for the owner to propose and for the territorial authority to accept or reject, with either of the parties entitled to submit doubts or disputes to the Chief Executive for another determination.

8.4 Finally, I consider that the cladding will require on-going maintenance to ensure its continuing code compliance.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 12 May 2005.

**John Gardiner**  
Determinations Manager