

Determination 2005/13

Refusal of a code compliance certificate for a building with a “monolithic” cladding system: House 11

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 applicants are the 2 joint owners of the property (referred to as “the owner”), and the other party is the territorial authority (“the TA”). The application arises from the refusal by the TA to issue a code compliance certificate (“CCC”) for a 3-year old house unless changes are made to its monolithic cladding system.

1.2 My task in this determination is to consider whether I am satisfied on reasonable grounds that the external wall cladding as installed (“the cladding”), which is applied to the external walls of this house complies with the building code (see sections 18 and 20 of the Act). By “external 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 2.4, and paragraph 8 sets out the decision.

2 PROCEDURE

The building

- 2.1 The building is a two-storey detached house situated on an excavated sloping site, which is in a medium wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The external walls of conventional light timber frame construction built on concrete block foundation and basement walls. The timber-framed walls are sheathed with monolithic cladding. The house is of a fairly simple shape, with pitched roofs at varying levels that have numerous wall to roof junctions. The house has a timber-framed balcony, which is constructed partially over a living space and is cantilevered a maximum of 950mm from the external wall face. The deck of the balcony is lined with 15mm plywood covered with a PVC membrane. The curved perimeter of the balcony is finished with a timber-framed balustrade that is covered on both faces and the sloping top with the monolithic cladding. A small metal-clad cantilevered roof is fixed over the front entry door, and adjoins the cladding on two sides. A set of two monolithic clad beams and a corner column forms a pergola to one elevation. There are no eaves or verge projections, and the front end gable walls are finished on all faces and the tops with monolithic cladding. I note that the consent plans show projections to the majority of the eaves and verges. The TA has not referred directly to this omission, but has noted that the “membrane capping [is] unknown on clad parapets and balustrades”. The small roof over the front entry also varies from the consent drawings and the pergola rafters as shown have been omitted.
- 2.2 The owner has produced a letter from the builder, dated 19 July 2004, stating that H3 timber was used for all bottom plates. I have not received any other information from the owner regarding the treatment of the remaining external wall framing members.
- 2.3 The building is clad with what is described as monolithic cladding. The cladding is a particular proprietary product, installed in accordance with the manufacturer’s instructions, which include flashings to heads, jambs, sills, trims and corners. As detailed in that manufacturer's instructions (“the instructions”), it incorporates 46 mm thick expanded polystyrene (EPS) backing sheets fixed through building wrap directly to framing timbers and finished with a proprietary mesh reinforced product plaster system supplied by the manufacturer of the backing sheet system. The polystyrene backing sheets have a 10 mm deep pattern of grooves on the side that is fixed against the building wrap. The grooves are, according to the manufacturer, equivalent to a

drained ventilated cavity being constructed behind the sheets. I note that the installed cladding differs from that shown on the consented plans, and the TA has referred to this on 25 June 2004 as an area of risk and concern as no amended plans had been submitted to the TA in respect of this amendment at that date.

- 2.4 The plaster manufacturer provided a “Warranty” covering the materials, workmanship and the cladding system, and a “Producer Statement” covering the cladding system, but excluding any incorrect installation of the product.

Sequence of events

- 2.5 The TA issued a building consent on 11 May 2001, based on a certificate from a building certifier.
- 2.6 The building certifier made various inspections during the course of construction, and approved the “Preline Insulation Building Inspection” on 27 July 2001.
- 2.7 On 25 March 2004, the TA notified the owner that the building certifier had advised it that, as the building work had not progressed within the statutory time framework, all documentation had been returned to the TA. The building certifier had also been contacted to provide the TA with a building certificate for all the inspections that the building certifier had undertaken on the house. The TA advised the owners that if they wished the TA to carry out the outstanding inspections, an invoice would be created to cover the costs.
- 2.8 The owner responded to the TA on 2 April 2004, confirming that the final inspection was outstanding and the owner wished the TA to undertake the outstanding inspections and issue the CCC.
- 2.9 In a letter dated 9 April 2004, the TA confirmed that it would be pleased to offer assistance with the completion of the building inspections.
- 2.10 The TA carried out a final building inspection on 18 May 2004, and noted amongst other items, that a producer statement was required for the cladding. The TA carried out a further final building check on 17 June 2004 and noted, “Book a weathertight inspection for [Named] cladding system”.
- 2.11 The building certifier issued a “Building Certificate/Job Report”, dated 22 June 2004, which covered foundations, sub floor, preline plumbing and insulation, and drainage inspections.
- 2.12 The TA wrote to the owner on 25 June 2004, stating:

We have received your request for a CCC (CCC) for a dwelling at the above address

Before the council can issue a CCC, we must ensure that all building work meets the NZ Building Code requirements. In particular, the building code specifies that building work must remain durable for specific periods of time after the CCC is issued.

You will be aware of the current weathertightness issues often reported in the media. These issues have highlighted the care that must be

taken to establish that all building elements, but particularly cladding, is durable before any CCC can be issued.

As your building is [Named] cladding construction with no cavities we are unable to verify that it fully complies with the Building Code requirements, manufacturer's details application (*sic*) at the time and that it will remain durable for the required period. Areas of concern/risk are:

1. Approved plans show [Named] cladding system, [Named] has been substituted and no amended plans submitted
2. No Producer Statement or Warranties
3. Membrane capping unknown on clad parapets and balustrades
4. Ground clearances non complying – not a minimum of 100mm clear in places by garage
5. No previous council inspections on cladding installation
6. Cantilevered decks and decks above living spaces

Visual inspection recently carried out by council has also revealed the following defects, which need remedying, however we advise that even when these defects are remedied to council's satisfaction, we consider the consent would still need to go to the Building Industry Authority for determination.

Defects to be Remedied and further inspection to be called for

1. Producer Statement from contractor and cladding warranty requires as per [Named Manufacturer] Producer Statement form
2. Provide amended plans showing new bracing details for change of cladding
3. Ground level to be lowered at garage by entry
4. Concrete to be cut clear of cladding by a minimum of 100mm each side of garage door

There has been recent information and knowledge that face sealed cladding systems without an adequate drainage and ventilation cavity will cause irrevocable damage to structural elements in the event of leakage and/or the effect of residual moisture.

Council cannot therefore be satisfied on reasonable grounds, that the cladding system as installed on the above building will meet the functional requirements of Clause E2 External Moisture and Clause B2 Durability of the New Zealand Building Code and is therefore unable to issue a CCC.

- 2.13 The owner engaged a consultant company ("the consultant") to inspect the house and the consultant produced a report dated 2 July 2004. As regards the cladding, the consultant noted:

The exterior cladding appears in generally sound condition but does require some minor remedial work.

Painted plaster over a polystyrene product is fitted throughout.

Minor remedial work is required where roof flashings terminate into walls. Additional sealant is required to prevent any moisture ingress where the flashings terminate adjacent to the edge of the cladding.

The appropriate angles are shown to the top of the parapet walls. These would require cap flashings to comply with present day building code requirements.

Additional sealant is required around the gas pipe below the gas meter plus around the TV aerial cabling.

Constant vigilance must be maintained on all Monolithic clad homes to ensure that any cracking caused by framing movement is sealed prior to painting.

A number of moisture meter readings were gathered throughout the interior of the dwelling and on the day of inspection, all readings were within the parameters required by the building code.

2.14 In a letter dated 18 July 2004, the owner wrote to the TA expressing concern about the defects listed in the TA's letter of 25 June 2004. The owner went on to detail the events leading up to current outcome. Those relating specifically to the cladding can be summarised as:

- The TA officer inspecting the house had stated that provided the listed items were completed, the owner would have no difficulty in obtaining a CCC;
- The TA officer had signed off that the producer statement for the cladding had been provided;
- A second TA official completed a further inspection, and informed the owner that a report would be prepared and submitted to the TA for a review. The owner followed the advice of the official and lowered the ground level at the garage wall entry, and cut back the concrete on each side of the garage. The official also stated that a more detailed producer statement was required.
- The owner then contacted the TA about concerns involving the issuing of the CCC. The owner was informed of the problems the TA faced concerning weathertight risk issues; and
- The owner noted that the ground level and paving issues had been rectified and attached producer statements from the cladding manufacturer and the building contractor, together with plans showing bracing details for the change in cladding.

2.15 On 29 July 2004, the TA wrote to the owner stating it was surprised that one of its inspectors had mentioned that the owner would receive a CCC at the time of his inspection. The TA went on to describe its current approach to monolithic clad buildings, and identified the following risk factors identified with the house:

1. Face fixed monolithic type exterior cladding.

2. Exterior timber framing is non treated, with the exception of the bottom plate.
 3. No soffits, parapet type gable ends.
 4. No building wrap or exterior cladding inspections carried out.
 5. Two storey building.
 6. Decks over habitable areas of the dwelling.
 7. Medium wind zone.
 8. Roof/wall intersection design fully exposed with no soffit.
- 2.16 On 5 September 2004, the owner wrote to the TA attaching a copy of letter from the cladding manufacturer, dated 3 September 2004, which confirmed the type of cladding system that was installed on the house.
- 2.17 The TA did not issue a Notice to Rectify as required under section 43(6) of the Act.
- 2.18 The owner applied for a determination on 21 July 2004.

3 THE SUBMISSIONS

- 3.1 The TA made a submission in the form of a letter dated 23 September 2004, which summarised the consent and inspection processes relating to the house. The TA also noted that the owner had been informed that, due to the type of monolithic cladding applied to the house and its attendant risk factors, the TA was unable on reasonable grounds to accept the compliance of the cladding. The TA concluded that new knowledge indicated that monolithic claddings should have a cavity to meet their durability requirements.
- 3.2 The TA supplied copies of:
- The consent documentation;
 - The building certifier's inspection records;
 - The TA's inspection documentation; and
 - The correspondence with the owner.
- 3.3 The owner also supplied copies of:
- The plans and specifications;
 - The consent documentation;
 - The TA's inspection documentation;
 - The correspondence with the TA;
 - The bracing calculations and plans;

- The cladding manufacturer's "Warranty", "Producer Statement", and maintenance manual;
 - The builder's producer statement dated 26 May 2004, and letter of 19 July 2004, verifying the H3 treatment of the wall bottom plates;
 - The consultants inspection report of 2 July 2004;
 - The sale and purchase agreement for the purchase of another house that the owner had contracted to buy;
 - A risk factor check list; and
 - Photographs showing the lowered ground level and the removal of poured concrete paving around the garage.
- 3.4 On 3 August 2004, the owner wrote to the Authority stating that building wrap and exterior cladding inspections had been carried out, and attached 2 photographs showing the application of the wrap.
- 3.5 The copies of the submissions and other evidence were provided to each of the parties. Neither the owner nor the TA made any further submissions in response to the submissions of the other party.

4 THE RELEVANT PROVISIONS OF THE BUILDING CODE

- 4.1 The dispute for determination is whether the TA's decision to refuse to issue a CCC 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. Those 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 sub floor 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 made the following general observations, which in my view remain valid in this case, about acceptable solutions and alternative solutions:

- 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; and
- 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 and furnished a report. It noted that the “general appearance of the cladding finish appears good with the exception of [some specified] items”. The wall dimensions of the house were such as to not require the installation of construction joints. The expert removed the textured coating at two locations to reveal the flashing details of the dining room window, and noted that the window flashings appear to comply with the functional requirements of E2. The expert also made the following comments regarding the cladding:

- The coating finish is deformed at the front northern corner of the house;
- There is a minor plaster blemish on the southern exterior lounge room wall;
- There is cracking evident at some locations where the fascia board abuts the cladding;

- The roof to wall junctions to the 5 ends of the parapet walls are inadequately finished, and there are no flashings installed where the fascia and spouting line has been extended at 2 of these locations. Nails also penetrate the cladding at these two latter positions;
- There are no kick out extensions to the ends of the apron flashings at 5 locations, and there is some unsealed cladding behind the spouting abutments;
- There are 3 locations where the fascias are butted into the cladding;
- There are minor coating blemishes to the top edges of the balcony balustrade;
- There is insufficient ground clearance to the base of the cladding at the balcony balustrade;
- The overflow pipe from the balcony is partially obstructed by the balustrade cladding above it;
- The floor level drainage thresholds are insufficient at the paved area to the entry;
- The junctions between the front entry roof and the cladding lack properly formed flashings;
- The monolithic clad pergola beam end is partially covering the raking fascia board where it joins the cladding, and no drainage path has been formed at this location;
- The external hose tap on the dining room wall is inadequately sealed where it penetrates the cladding;
- Some downpipe clip fixings are loose; and
- Four high level downpipes lack spreaders where they discharge onto a lower roof area.

The expert also noted that the concrete paving had been cut away at the garage frontage to provide greater clearance to the base of the cladding. The expert accessed a roof space and observed that at two locations where markings were visible, the framing timber was untreated.

5.2 The expert took non-invasive readings at the interior linings of the external walls throughout the house and obtained two higher moisture readings adjacent to the front entry and garage doors. The expert also took invasive moisture readings at the exterior of the cladding to all elevations and obtained the following higher readings.

- A reading of 20% below the overflow pipe in the balcony balustrade;
- A reading of 20% under the beam below the balcony balustrade;
- A reading of 21% at a south elevation upper wall;

- A reading of 22% at the base of the laundry wall;
- A reading of 40%+ over the laundry door; and
- Four readings of 40%+ at the side, base, and over the head of the entry door.

Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

- 5.3 Copies of the expert's report were provided to each of the parties. The owner responded by a letter dated 25 January 2005 and queried the experts statement that "...there could be some decay in the lintel above the door frame". The owner stated that the something board had been removed at this location and no decay had been found. I note that the expert's remarks in this respect have not had a bearing on the conclusion reached in this determination.

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 Research data 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 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 I believe 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 suggests 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. I believe 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 believe 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, the I find that this house:

- Has no eave or verge projections that could provide some protection to the cladding under them;
- Is in a medium wind zone;
- Is two storeys high;
- Has exterior joinery units that are fully flashed;
- Has an envelope that is fairly simple on plan, but with a roof system having several wall to roof junctions;
- Has a balcony at the first floor level, constructed partially over a living space;
- Has a pergola frame with 2 beam ends set into the cladding; and

- Has external walls, apart possibly from the bottom plates, constructed with untreated timber, which provides no resistance to decay if it gets wet and cannot dry out.

Weathertightness performance

6.8 I find that generally, the cladding appears to have been installed according to good trade practice and to the manufacturer's instructions, but some junctions, edges, and insertions are not well constructed. These areas are:

- The deformed and blemished coating finish and the cracking evident at some locations, including the top of the balcony balustrade;
- The inadequately finished roof to wall junctions to the 5 ends of the parapet walls, the lack of flashings where the fascia and spouting line has been extended at 2 of these locations, and the nails penetrating the cladding;
- The lack of kick out extensions to the ends of the apron flashings at 5 locations, and the unsealed cladding behind the spouting abutments;
- The 3 locations where the fascias are butted into the cladding;
- The insufficient ground clearance to the base of the cladding of the balcony balustrade;
- The partially obstructed overflow pipe from the balcony;
- The inadequately finished floor level drainage thresholds at the paved area to the entry;
- The lack of properly formed flashings at the junctions between the front entry roof and the cladding;
- The lack of a drainage path where the pergola beam end is partially covering the raking fascia board;
- The inadequately sealed external hose tap on the dining room wall where it penetrates the cladding;
- The loose downpipe clip fixings; and
- The lack of spreaders to 4 high level downpipes.

6.9 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, and notwithstanding the deficiencies that have been identified, the cladding appears to have been installed according to good trade practice;

- The grooves in the back of the cladding sheets provide some drainage facility; and
- The windows are fully flashed.

- 6.10 I consider that these factors adequately compensate for the lack of a drainage and ventilation cavity, other than the drainage capacity provided by the grooved cladding, and can allow the house to comply with the weathertightness and durability provisions of the building code.
- 6.11 I note that the expert considers that the drainage channel constructed to the west and north elevations to address the TA concerns, provides adequate protection to the base of the cladding at these locations. I suggest that the TA fully investigate these channels to ensure that they work efficiently so that the base of the cladding is appropriately protected from the ingress of water.
- 6.12 I note that one elevation of the house demonstrates a medium weathertightness risk rating and that three elevations of the house demonstrate a high weathertightness risk rating, as calculated 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 CCC by careful inspection of the building as actually built.

7 CONCLUSION

- 7.1 I am satisfied that the current performance of the cladding is not adequate because it is allowing water penetration into the wall framing of the house at present. Consequently, I am not satisfied that the cladding system as installed complies with clause E2.3.2 of the building code.
- 7.2 I consider that, because the faults that have been identified with this cladding occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.8 is likely to result in the building being weathertight and in compliance with clauses B2 and E2, notwithstanding the lack of a ventilated cavity.
- 7.3 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. I recognise that a TA does not have any statutory responsibility for the ongoing maintenance of a building. However, the maintenance programme adopted by the owner could be undertaken after consultation with the TA, bearing in mind that the nature of the advice, and the basis on which it is provided to the owner, are for the TA to decide.

- 7.4 It is emphasised that each determination is conducted on a case-by-case basis. Accordingly, 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.
- 7.5 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 hereby determine that the cladding system as installed does not comply with clause E2.3.1 of the building code. There are also a number of items to be remedied to ensure that the house is weathertight and thus meet the durability requirement of the code. Consequently, I find that the house does not comply with clause B2. Accordingly, I confirm the TA's decision to refuse to issue a CCC.
- 8.2 I also find that once the items of non-compliance that are listed in paragraph 6.8 are rectified to the approval of the TA, 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 TA has not issued a Notice to Rectify. The TA should do so and the owner is then obliged to bring the house up to compliance with the building code. It is not for me to decide directly how the defects are to be remedied and the cladding brought to compliance with the building code. That is a matter for the owner to propose and for the TA 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 2 February 2005.

John Gardiner
Determinations Manager