Determination 2006/36

Refusal of a code compliance certificate for an apartment complex at 309 Wakefield Quay, Nelson

1. The dispute to be determined

1.1 This is a Determination of a dispute under Part 3 Subpart 1 of the Building Act[1] 2004 ("the Act") made under authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing, for and on behalf of the Chief Executive of that Department. The applicant is Mr Gowans, the owner of one apartment and the chairman of the Body Corporate 320117, who is acting on behalf of the individual unit owners ("the applicant"), and the other party is the Nelson City Council ("the territorial authority"). The application arises because no code compliance certificate was issued by the territorial authority for this 2-year-old apartment complex.

1.2 The question to be determined is whether I am satisfied on reasonable grounds that the building envelope, including the monolithic wall cladding as installed to the external walls of the building ("the cladding") complies with the Building Code[2] (see sections 177 and 188 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 In making my decision, I have not considered any other aspects of the Act or the Building Code.

[1] The Building Act 2004 is available from the Department's website at www.dbh.govt.nz
[2] The Building Code is available from the Department's website at www.dbh.govt.nz

2. Procedure

2.1 The building

2.1.1 The building work consists of an apartment block housing Unit 1 to Unit 12 ("the main block"), with an attached separate structure ("the Unit 14 wing") to the southwest, situated on an excavated site, which is in a very high wind zone for the purposes of NZS 3604[3]. The ground floors of both structures contain garage space for the complex, which is at street level on the northwest elevation and below ground at the rear southeast elevation. The main block is four storeys high on the street side, with the three upper floors containing 4 units per floor. The Unit 14 wing is three-storeys high on the northwest street elevation, with the two upper levels containing a stand-alone unit with its own entrance via a staircase from the street. Construction is reinforced concrete, with infill walls of precast concrete panels, concrete-filled polystyrene blockwork, monolithic wall cladding over timber framing, and aluminium windows and doors. Both structures are fairly simple in plan and form, with 35^{o} profiled metal hip roofs and limited 5^{o} roof areas of butyl membrane. The only eaves projections are provided by the gutters.

2.1.2 The apartment levels in the main block have tiled concrete walkways with metal balustrades along the southeast rear elevation, which connect the units to stairs at the east end and a semi-circular stair/lift tower at the south end. Tiled concrete decks with stainless steel and glass balustrades extend the full length of the northwest street elevation. The first floor decks project beyond the floors above and are situated over part of the garage floor below. The second floor decks are recessed below the decks above, and sit above the living areas of the first floor. The third floor decks are recessed below the roof above. The Unit 14 wing has a tiled concrete deck with stainless steel and glass balustrades on the first floor, which is recessed back from the northeast face of the structure, and a tiled concrete open stair on the southwest end.

2.1.3 I have received no written evidence as to the treatment, if any, of the external wall framing timber. Accordingly, I consider that the external wall framing is unlikely to be treated.

2.1.4 The cladding system to the timber-framed exterior walls is what is described as monolithic cladding and is a "Harditex" system with 7.5 mm thick fibre cement sheets fixed through the building wrap to the framing, and finished with an applied textured "Equus Thermexx/Coverall" coating system that is also used over the pre-cast concrete panels and the "Superform" concrete-filled polystyrene blockwork ("polyblocks").

2.1.5 Equus Industries Ltd provided a "Producer Statement" dated 14 March 2005 and a 15-year warranty dated 19 March 2003 for the "Equus Thermexx/Coverall" system.

2.1.6 I note that all elevations of the building 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, before the building work has begun and, consequently, before any assessment of the quality of the

[3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

2.1.7 Accordingly I consider this face-fixed fibre cement cladding to be an alternative solution (refer to paragraph 4.2).

2.2 Sequence of events

2.2.1 The territorial authority issued a building consent for the apartment complex on 17 July 2002, based on a building certificate issued by Prime Building Compliance Ltd ("the building certifier"), dated 27 June 2002. The scope of engagement attached to the building certificate noted no exclusions.

2.2.2 The building certifier carried out various inspections during the course of construction, including prior to lining installation and following lining installation. The inspection records indicate that progress on the construction of the Unit 14 wing was slower than that of the main block, and final inspections were undertaken at different dates for each structure.

2.2.3 The final inspection for the Unit 1 to 12 block appears to have taken place on 10 April 2003, and the building certifier issued an interim code compliance certificate, dated 17 April 2003 for "Units 1 to 12 only". I have researched the scope of approval of the building certifier and find that it was authorised to issue such interim certificates.

2.2.4 The building certifier carried out final inspections on the Unit 14 wing on 20 June 2003 and 1 July 2003, both of which inspections identified outstanding items.

2.2.5 On 14 May 2004, the building certifier wrote to the applicant explaining that an interim code compliance certificate, under section 43(1) of the Building Act 1991, had been issued for Units 1 to 12 and noted that:

> Until Unit 14 has been signed off, a full Code of Compliance Certificate will not be issued.

2.2.6 The building certifier carried out the last final inspection on the Unit 14 wing on 3 February 2005, and the building certifier noted this as "passed".

2.2.7 On 2 March 2005 the building certifier wrote to the territorial authority enclosing the final building certificate, dated 1 March 2005, and handing over the building to the territorial authority for the issue of the code compliance certificate. The building certifier noted that an interim code of compliance certificate had been issued for Units 1 to 12, and noted:

> When this job commenced it was totally inside our scope. Unfortunately due to overnight changes, we cannot issue a full CCC as the building is unit title/multiple dwelling units…

2.2.8 The amended scope of engagement attached to the final building certificate included exclusions of:

- exterior cladding outside scope of E2/AS1
- unit titles
- multiple dwelling units

2.2.9 It appears that no further inspections of the building took place, and the territorial authority did not issue a Notice to Rectify as required under section 43(6) of the Building Act 1991.

2.2.10 It appears that the applicant was informed that the cladding did not comply with the Building Code, and that the only option was to apply for a Determination.

2.2.11 The Department received the applicant's application on 20 May 2005.

3. The submissions

3.1 In a letter accompanying the application, the applicant described the history of the project, including the issue of the interim code compliance certificate for Units 1 to 12 only, due to the lack of completion of Unit 14, and noted that:

> It was with considerable concern that the members of our Corporate Body were recently informed that there was no Code of Compliance Certificate in dealing with their apartments. This evidently arose through change to the Building Act where the Nelson City Council would not take on board the responsibilities of the original Prime Building Compliance which we understand. We have been informed by the Nelson City Council that the Code Compliance is now outstanding with respect to not only the multiple units of the complex but also the exterior cladding.

3.2 The applicant forwarded copies of:

- the drawings
- the consent documentation
- the building certifier's building certificates and inspection records
- correspondence from the building certifier
- correspondence with the territorial authority
- various producer statements and other statements.

3.3 The territorial authority made no submission.

3.4 Copies of the submissions and other evidence were provided to each of the parties. Neither party made any further submissions in response to the submission of the other party.

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.

4.2 There are no Acceptable Solutions that have been approved under section 22 of the Act that cover the monolithic cladding as installed on this building. The cladding is not currently certified under section 269 of the Act. I am, therefore of the opinion that the cladding system as installed must now be considered to be an alternative solution.

4.3 In several previous Determinations, the Department has 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 they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.

- Usually, 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 expert inspected the cladding on 12 September 2005 and 18 October 2005, and furnished a report that was completed on 20 October 2005. The expert noted that the building appeared to be generally "sound and true although generally finishing is at best average".

5.2 The expert noted that windows and doors in the Harditex cladding have aluminium head flashings. The expert scraped away small sections of coating at several sill to jamb junctions to inspect the flashings, and noted that the windows in Harditex cladding did not have sill flashings. Jamb flashings were noted in recessed windows, with Inseal foam used at the jambs of face-fixed windows. The expert also noted that the windows in the polyblock walls have jamb and sill flashings. I accept that the locations opened are typical of similar locations around the building.

5.3 I note that the expert was only able to access the interior of Unit 9. However, I am prepared to accept that this level of internal inspection, combined with the external

inspections, is sufficient to enable a reasonably accurate assessment of the overall weathertightness of the building.

5.4 The expert took non-invasive moisture readings through the exterior cladding at many locations around the complex, and recorded no elevated readings. A further 13 invasive moisture readings were taken through the Harditex cladding at various doors and windows, bottom plates, penetrations and other risky areas, and the following 2 elevated readings were noted:

- 21% and 33% at the junction of the wall to Unit 1 with the exterior tiled stairs to the garage level.

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

5.5 The expert made the following specific comments on the cladding:

- there is no anti-capillary gap at the base of the Harditex on the southeast wall of Unit 14 as recommended by the manufacturer
- although horizontal control joints are installed, there are no vertical control joints in the Harditex on the 9.3m long southeast wall of Unit 14 where the length exceeds the 5.4m limit recommended by the manufacturer
- between the main block and the Unit 14 wing on the northwest and southeast, the vertical seismic movement control joints have poor or missing sealant, and are poorly flashed with gaps at a number of locations
- the backing sheets of the Harditex cladding have vertical joints in line with window openings at some locations, which does not accord with the layouts recommended by the manufacturer, and joints have peaked at some locations
- jamb flashings are not installed at face-fixed doors in the Harditex cladding as recommended by the manufacturer
- there are no sill flashings at windows recessed into Harditex cladding as recommended by the manufacturer
- there are no head flashings at windows recessed into the polyblock cladding as recommended by the manufacturer, and little slope to the sills in lieu of the 30^{o} slope recommended by the manufacturer
- there are no flashings over the tops of the ventilation grilles in the Harditex cladding and polyblock walls to the southeast elevation
- there are isolated cracks visible at inter-cladding junctions – at the vertical overlap of Harditex to polyblock on the southeast wall, and at the junction of concrete beams to polyblock at a number of locations

- there are isolated cracks visible in the precast panels in the garage level, and evidence of ruptures in the panel sealant joints
- the aluminium strip used elsewhere at the junction of deck paving with polyblock walls is missing at the equivalent junctions on the southeast walkways
- the fixing of the handrail (of the exterior tiled stairs to the garage level) to the wall to Unit 1 does not appear to be sealed, and elevated moisture levels were recorded in this wall
- roof fixings are skew-fixed with poor seals and pop rivets in flashings have failed at a number of locations
- the roof flashings to the roof vents, skylights and other penetrations are crudely installed with incorrect fixing, lapping and heavy reliance on sealants at a number of locations
- the metal flashing cuts into the membrane at the junction of the metal roofing with the membrane roofing at a number of locations
- there is evidence of adhesive failure in membrane joints on the stair/lift tower roof
- the bracket and cable entry of the aerial on the stair/lift tower is poorly sealed
- there are areas on the southeast wall where the tanking has peeled off the polyblock walls

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

5.7 In a letter to the Department dated 23 November 2005, the owner's consultants, Hay and Associates Ltd., ("the consultant") commented in detail on a number of points raised in the expert's report. The consultant's comments included that:

- the variances from the original consent drawings were covered by additional documentation issued during construction
- the Harditex cladding was installed in accordance with the manufacturer's instructions applying at the time
- the only walls areas lacking an aluminium strip at the junction with the tiled walkways are Harditex clad walls, where an anti-capillary gap is provided
- each of the structures is separately waterproofed and the flashing over the seismic control joints is not intended to be weatherproof, but is designed to allow movement and to keep the cavity clear.

6 Comments on the draft determination

6.1 Copies of the draft determination were forwarded to the parties on 16 January 2006. The territorial authority accepted the draft on 31 January 2006.

6.2 The applicant responded by letter dated 1 April 2006 which had two addenda. Addenda 1 raised the applicant's concerns that the interim code compliance certificates issued by the building certifier were no longer valid.

6.3 Addenda 2 contained comments regarding the Determination itself and I can summarise these as follows:

- the applicant is of the opinion that the framing timber is untreated Douglas Fir
- while Units 1 to 12 received interim code compliance certificates, Unit 13 did not as the plumbing, the wiring, and the kitchen were incomplete
- it was believed that the two elevated moisture readings obtained by the expert are due to the weekly hosing down of the walls at these locations
- the tanking was not a "requirement of construction or development and does not form part of the code compliance certificate inspection"
- while the building may not comply with clauses B2 and E2 [of the Building Code] it is believed that adjustments to the maintenance plan will ensure future compliance
- the siting of the building means that the monolithic cladding faces away from the main weather patterns
- the units in total have approximately 50% eaves protection by measurement and the area of timber-frame construction of Units 1 to 12 has nearly 90% eaves coverage.
- regarding paragraph 6.2.1, the applicant did not believe that the statement "most walls" under bullet point 4 is a reasonable comment and the word "some" under bullet point 5 should be changed to ""most"
- where practical, the applicant agreed with the maintenance requirements set out in the Determination but did not consider that the peeling of the tanking has anything to do with the construction of the building with respect to "plans or weatherproofing"
- regarding paragraph 6.3.2, the word "most" should be substituted for the word "some" at the beginning of bullet points 3 and 4.

6.4 The applicant summarised his concerns and requested that the Department set a time line in respect of the future actions to be undertaken by the parties.

7 Discussion

7.1 General

7.1.1 I have considered the submissions of the parties, the expert's report, the applicant's comments on the draft Determination, and the other evidence in this matter. I have made some minor adjustments to the draft Determination in line with some of the comments raised by the applicant. The approach in determining whether building work complies with clauses B2 and E2 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. The Building Industry Authority and the Department have described the weathertightness risk factors in previous Determinations (Refer to Determination 2004/01 et al) relating to monolithic cladding, and I have taken these comments into account in this Determination.

7.2 Weathertightness risk

In relation to these characteristics I find that the building:

- is built in a very high wind zone
- is a maximum of four storeys high
- is reasonably simple in plan and in form
- has eave projections over most walls, with deep projections over the upper decks along the northeast elevation of the main block
- has decks, many of which are sheltered under upper floor or roof overhangs
- has areas of monolithic cladding which is fixed directly to the framing
- has external wall framing that may not be treated, so providing no resistance to the onset of decay if the framing absorbs and retains moisture.

7.3 Weathertightness performance

Generally the cladding appears to have been installed according to good trade practice and, except where noted, in accordance with the manufacturer's requirements, but some junctions, edges and penetrations are not well constructed. These areas are all as described in paragraph 5.5 and in the expert's report as being the:

- lack of capillary gap at the Harditex to concrete junction at the southeast wall of Unit 14
- lack of vertical control joints in the Harditex cladding of the southeast wall of Unit 14

- joints of Harditex backing sheets in line with window openings
- poor sealing of the ventilation grilles on the southeast wall
- lack of sealing at some junctions between different cladding types
- cracks in, and poorly sealed joints between, the precast panels in the garage,
- missing aluminium strip at the wall to southeast walkway paving junction
- lack of sealing of the handrail fixing to wall of Unit 1
- poor sealing and condition of fixings, flashings and sealing of penetrations, junctions of membrane and flashings and membrane joints at a number of locations on the roofs
- poor sealing of fixings and cable entry of the aerial on the liftwell tower
- peeling of the tanking at some locations at the base of the southeast wall

7.4 I note the applicant's assertion, when commenting on the draft determination, that the tanking at the base of the southeast wall has anything to do with the construction of the building with respect to "plans or weatherproofing". I am prepared to accept that assertion as being accurate only if the territorial authority, after inspection of the tanking in situ, endorses that view.

7.5 I note the consultant's comments in regard to the flashings over the seismic joint, and accept that the junctions are not intended to be weathertight and the flashings will be adequate if the structures are independently weatherproofed.

7.6 I note that the face fixed joinery that lack jamb and sill flashings are located in the southeast wall that is sheltered from high winds. I accept that this joinery is installed as per the manufacturer's requirements which did not mandate jamb and sill flashings at that time, and as there are no signs of moisture ingress that code requirements are being achieved in this case.

7.7 Notwithstanding the fact that the backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding sheets, I have noted certain compensating factors that assist the performance of the cladding in this particular case.

- The cladding generally appears to have been installed to reasonable trade practice.
- The complex is reasonably simple in plan and in form.
- Some areas of cladding are sheltered under overhangs of floors or roof above.
- Some of the deck and walkway areas are sheltered under upper floor or roof overhangs.

7.8 I consider that these factors help compensate for the lack of a ventilated cavity and can assist the building to comply with the weathertightness and durability provisions of the Building Code.

7.9 The applicant has asked me to set a time line in which the parties are to undertake the necessary actions set out in this Determination. I have no power under the Act to set any time lines for settling the determined issues, none the less fixing the building as soon as possible will be to the advantage of all parties and I urge then to cooperate in achieving that outcome.

7.10 The applicant has noted that he has received information from the Department that the interim code compliance certificates issued for Units 1 to 12 are no longer valid under the 2004 Act. I regret any misunderstanding that has arisen over this issue. While, under the 2004 Act, it is no longer possible to issue interim code compliance certificates, all such certificates that have been validly issued remain in force unless formally withdrawn. As set out in paragraph 9.2 I have formally ordered their withdrawal on different grounds. Existing certificates provide evidence that can be used to support the issuing of a code compliance certificate.

8 Conclusion

8.1 I am satisfied that the current performance of the monolithic cladding is not adequate because it is allowing water penetration into the building at two locations at present. Consequently, I am not satisfied that the cladding system as installed on the building complies with clause E2 of the Building Code.

8.2 In addition, 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 building to remain weathertight. Because the cladding faults on the building are likely to allow the ingress of moisture in the future, the building does not comply with the durability requirements of clause B2.

8.3 Subject to further investigations that may identify other faults, I consider that, because the faults that have been identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 7.3 is likely to result in the building remaining weathertight and in compliance with clauses B2 and E2.

8.4 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 checking, cleaning, re-painting, replacing sealants, and so on. As it is likely that the external wall framing

is not treated, periodic checking of its moisture content should be carried out as part of normal maintenance.

8.5 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.

8.6 In the circumstances, I decline to incorporate any waiver or modification of the Building Code in this Determination.

9 The decision

9.1 In accordance with section 188 of the Act, I hereby determine that the monolithic cladding system as installed does not comply with clause E2 of the Building Code. There are a number of items to be remedied to ensure that the building becomes and remains weathertight and thus meets the durability requirements of the Building Code. Consequently, I find that the building does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.

9.2 I also order that, as the units are found not to fully comply with the requirements of the Building Code, the interim code compliance certificate issued by the building certifier for Units 1 to 12 be withdrawn.

9.3 I also find that rectification of the items outlined in paragraph 7.3.10, to the approval of the territorial authority, along with any other faults that may become apparent in the course of that work, is likely to result in the building remaining weathertight and in compliance with clauses B2 and E2.

9.4 I note that the territorial authority has not issued a notice to fix. A notice to fix 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 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 territorial authority to accept or reject.

9.5 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.4. Initially, the territorial authority should issue the notice to fix, listing all the items that the territorial authority considers to be non-compliant. The owner should then produce a response to this in the form of a technically robust proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding Determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 15 May 2006.

John Gardiner
Determinations Manager