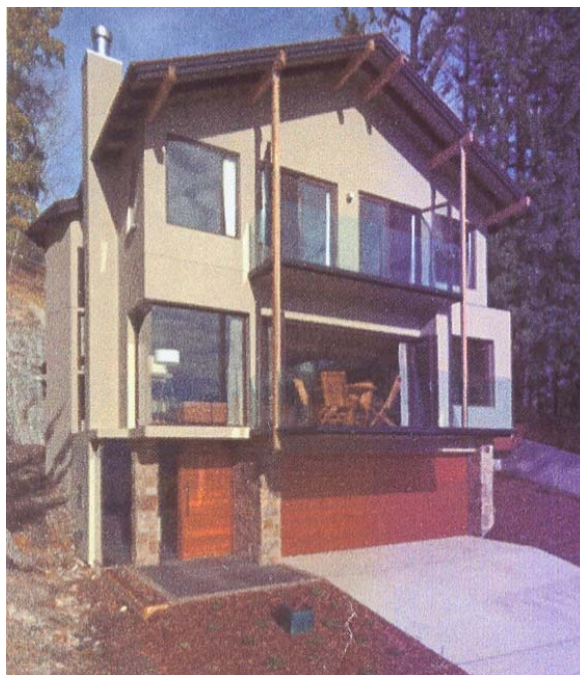


Determination 2007/21

A dispute over a code compliance certificate for a house at 4 Lordens Place, Aspen Grove, Queenstown



1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner Aspen Ridge Developments Ltd (“the applicant”), acting through Murray Cockburn Partnership (“the applicant’s agents”), and the other party is the Queenstown Lakes District Council (“the territorial authority”) acting through Civic Corporation Ltd (“the territorial authority’s agents”).

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

- 1.2 This determination arises from the decision of the territorial authority's agents to refuse to issue a code compliance certificate for a 1-year old house because it is not satisfied that it complies with clauses E1 "Surface Water" and E2 "External Moisture" of the Building Code² (First Schedule, Building Regulations 1992).
- 1.3 The matters to be determined are whether the stormwater discharge from the roof of the building complies with clause E1 and the exterior cladding complies with clause E2.
- 1.4 In making my decision, I have considered the submissions of the parties, the report of the independent experts commissioned by the Department, and who are specialists in the matters under consideration, to advise on this dispute ("the experts"), and the other evidence in this matter.
- 1.5 In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

2. The building

- 2.1 The building work consists of a two-storey detached house situated on a steeply sloping site, which is excavated down into rock, and is in a high wind zone for the purposes of NZS 3604³.
- 2.2 The building is the first of a complex of 14 houses that are to be constructed on the site. The roofs are at two main levels and have 400mm wide eaves projections. Gutters and downpipes are installed to the lower level patio roof only. 100mm "Novacoil" drainage pipes in a packed drainage layer provide peripheral drainage around the building and this is connected to a stormwater system, which discharges to the kerb of an adjacent right-of-way.

3. Sequence of events

- 3.1 It appears that the territorial authority issued a building consent (which I have not seen) some time in 2004. I note that this date is prior to the date (31 March 2005) when completed building work has to comply with the building consent, rather than the Building Code in order for a code compliance certificate to be issued.
- 3.2 It also appears that the territorial authority's agents carried out some inspections during construction and a final inspection on 25 January 2006, although I have received no records of these inspections.
- 3.3 On 30 January 2006 the territorial authority issued a notice to fix which required, amongst other items, spouting to be installed. The other items listed on the notice to fix are not the subject of this determination.

² The Building Code is available from the Department's website at www.dbh.govt.nz.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 3.4 In an email to the applicant's agents dated 30 January 2006, a firm of consultants commented on external moisture concerns in relation to the house. It was noted that clause E2 did not require gutters to be installed but the clause had requirements for the prevention of moisture ingress. The cladding for the house would need to be robust due to the risk imposed by a greater volume of roof run-off due to the lack of gutters. The consultants also described the requirements of drainage systems for the disposal of surface water as set out in clause E1.
- 3.5 On 22 February 2006, the applicant's agents wrote to the territorial authority's agents, noting that in general the house was designed without gutters and downpipes but had an appropriate peripheral drain. As these features were on the consent plans approved by the territorial authority's agents, it was assumed that the territorial authority was in agreement with the design. The applicant's agents were of the opinion that even if gutters and downpipes were installed, wind-driven rain would still come into contact with the wall cladding. The applicant's agents also noted that there were other examples of houses without gutters in the vicinity of the house in question.
- 3.6 The territorial authority's agents responded to the applicant's agents in a fax dated 3 May 2006. The territorial authority's agents had concerns that abnormally concentrated volumes of water would arrive on, or around, the house and listed specific details of the house construction that supported its concerns. The territorial authority's agents agreed that clause E2 did not specifically state that spouting and downpipes need to be installed but noted that E2 warned about the effect of high-pressure water on sensitive junctions. There were two specific concerns, which were the exposure of the outside envelope to an increased concentration of water and the concentration of water at ground level. Two options were suggested. One of these was the provision of details mitigating the increased risks. Alternatively, the applicant could apply to the Department for a determination.
- 3.7 In a fax to the territorial authority's agents dated 19 June 2006, the applicant's agents stated that the design included adequate peripheral drains. As for the increased risks, the applicant's agents noted that:
- even if gutters and downpipes are installed, windblown rain will be blown onto the cladding, which in this case was an adequate proprietary plaster system. In addition, houses with gutters carried the risk of leaf-blocked drains
 - all the vertical planes of the building are clad in a proprietary plaster system
 - the pitch of the roof ensured that the 400mm wide eaves projections are adequate
 - there is normal tanking to the walls below ground level
 - adequate peripheral drainage is provided
 - the siting of the building gives it protection from the prevailing southerly wind.

The applicant's agents did not believe that any high-pressure water would be directed at any sensitive junctions. The applicant's agents reiterated their assumption that the territorial authority's agents had approved the consented drawings, which with one exception, did not include gutters and downpipes.

- 3.8 The applicant's agents emailed the territorial authority's agents on 28 July 2006, noting that it had requested the issue of a code compliance certificate for the house on 22 February 2006. The applicant's agents pointed out that some adjacent residences have had gutters blocked with debris and snow, which indicated that the house design in question alleviated this risk. The applicant's agents also noted that as subsequent buildings in the complex were completed, the same problems concerning the issue of a code compliance certificate would arise.
- 3.9 In a fax to the applicant's agents dated 3 August 2006, the territorial authority's agents stated that they had carried out a further inspection of the property. It considered that the building did not meet the requirement of clause E1 and that there was evidence of water scouring and water-splash at some locations. The territorial authority's agents did not believe that the peripheral drainage system adequately dealt with the stormwater discharge and were concerned with the potential cumulative effects when the complex was completed. It pointed out that the specification referred to downpipes and that downpipes are shown on the plans at one location. The test for the system was compliance with the Building Code. The territorial authority's agents were prepared to look at other properties, which had been approved despite the lack of spoutings and downpipes, and noted that for one such property the territorial authority's agents had issued a notice to fix addressing this situation.
- 3.10 The territorial authority's agents emailed the applicant's agents on 3 August 2006 regarding the site visit and noted the lack of a flashing over the gas water heating unit and the meter box and the absence of some pipe lagging. It also stated that there was evidence of water ponding outside the southern stairway area.
- 3.11 In an email to the applicant's agents dated 10 August 2006, the territorial authority's agents were of the opinion that they had clearly set out their objections to the existing stormwater disposal system and still maintained that it was not code-compliant. Conversations that the territorial authority's agents had had with a group of building officials also supported this opinion.
- 3.12 The applicant emailed the territorial authority's agents on 22 August 2006, and confirmed that:
- the underlying rock over the development site dips away from the prevailing slope and the exposed cut slopes are stable, are generally unaffected by weather, and will not be affected by stormwater run-off
 - the rainfall catchment for each unit of the complex is small and will be controlled throughout the development

- stormwater on the south face will be controlled by hard-patio surfaces graded away from the dwelling with appropriate surface interception, which is similar to the north face situation.
- 3.13 The territorial authority's agents emailed the applicant on 7 September 2006 stating that they still held the opinion that the existing stormwater disposal system was not acceptable, particularly in the light of the entire proposed complex.
- 3.14 The applicant emailed the territorial authority's agents on 11 September 2006, asking them to confirm that:
- the only issue relating to the property and the issue of a code compliance certificate relates to how we deal with water striking the building
 - any determination decision is binding on the territorial authority's agents
- 3.15 The territorial authority's agents responded to the applicant in an e-mail dated 14 September 2006 and confirmed that a determination decision would be binding on all the parties. The territorial authority's agents also noted that there were minor construction matters still outstanding and that the collection of rainwater at roof level would reduce the risk to the weathertightness of the cladding.
- 3.16 The application for a determination was received by the Department on 13 October 2006.

4. The submissions

- 4.1 In a letter to the Department dated 11 October 2006, the applicant's agents noted, that, while the house was generally designed without gutters or downpipes, it had adequate peripheral drainage. Although the territorial authority's agents had issued a building consent on this basis, they had refused to issue a code compliance certificate. The house had been completed a year previously and was weathertight in every respect.
- 4.2 The applicant's agents forwarded copies of:
- the drawings
 - the correspondence between the parties
 - a set of photographs showing aspects of the building.
- 4.3 Following a request by the Department for additional information, the applicant's agents wrote again to the Department on 13 November 2006. In summary, the applicant's agents stated:
- The drainage capacity of the surrounding natural ground is essentially unchanged and the addition of peripheral drainage enhances this capacity.

- While there will always be wind-driven snow and rain against the side of the building and ground water around the building, the inclusion of gutters will not change this. The building is well tanked, and as there is no evidence of damp, mildew, or leaking, clause E2 is not an issue.
- The scour lines are infinitesimal at present and when the area finally has paved areas and gardens, the risk of scour will be eliminated and rainwater will be captured and controlled.
- The building is keyed into bedrock and has significant peripheral drainage conveying water from a very small catchment area.
- The area of ponding was a building defect that has been remedied.
- The risk posed by saturated ground is not an issue and the building work has enhanced the run-off facilities from the site.

The applicant's agents also attached stormwater calculation sheets and some additional photographs.

4.4 The territorial authority's agents did not make a submission.

4.5 Copies of the submission and other evidence were provided to each of the parties.

4.6 A copy of the draft determination was sent to the parties for comment on 18 January 2007. The applicant accepted the draft. The territorial authority accepted the draft but advised that a notice to fix (undated) was issued on 30 January 2006 following a site inspection by the territorial authority on 25 January 2006. I have amended the determination accordingly.

5. The expert's report

5.1 The experts inspected the property on 27 November 2006 and 7 December 2006, and also held discussions with the applicant's agents and the territorial authority's agents. The experts furnished a report that was dated 15 December 2006. The experts described aspects of the building, the building site geology and its stormwater management. Three aspects of the original design had been constructed differently from the consented plans and the experts identified two scour locations caused by rainwater falling from the roof.

5.2 The experts reviewed the stormwater calculations provided by the applicant's agents and observed that the design criteria appeared sound apart from the following:

- While calculations have been undertaken for the 5%, 2%, and 1% Annual Exceedance Probability (AEP) events, clauses E1.3.1 and E1.3.2 consider 10% and 2% protection only.
- The steeply sloping catchment area above the house had not been taken into account.

- A safety factor to account for the clogging of the infiltration trench over time had not been included.
- The assumed rate of flow through the gravels appeared high.

5.3 The experts stated that they had used alternative calculations using the following calculations:

- A safety factor of 10.
- An infiltration rate of 1500mm/hr (0.41 l/s/m²).
- Design events of:
 - 10% AEP: no ponding or nuisance
 - 2% AEP: no water entering habitable buildings.

Based on these revised calculations, the experts concluded that the stormwater disposal system is sufficient to meet the capacity requirements of clauses E1.3.1 and E1.3.2.

5.4 The experts comments on the suitability of the stormwater system as constructed can be summarised as follows:

- As the system provides a certain level of flow attenuation, this may reduce the risk of flooding downstream when compared with a piped system.
- Water from ponding in extreme circumstances could run down the southern slope and across to the kerb, as well as into the northern subsoil drain. However, the impact on the road will be no different when compared with the situation where all the discharge enters the subsoil drainage system.
- In comparison with a traditional gutter and downpipe system, the as-constructed system attenuates the stormwater flow and reduces the impact on the flood risk downstream.
- The subsoil drains have adequate capacity to drain the contributing catchment and will not adversely affect the surrounding ground or its ability to drain.
- The ground around the building is unlikely to be saturated for any long period of time and this situation would only occur during extreme events.

5.5 The experts recommended that the following matters be attended to:

- The scour to the south of the site need remedying to ensure that the system remains stable.
- More access points, similar to those already installed in the southeast corner, should be provided at each corner of the building.

- 5.6 The report also stated that the greater amount of driven rain and splashing against the exterior cladding was not a cause for concern as:
- there are comparatively small catchment areas where the roof water discharges along 3 sides of the building
 - the roof slopes provide an outwards momentum to any water discharge
 - the cladding will have rain driven against it anyway and has been designed to be watertight.
- 5.7 The experts also summarised their opinions in a table that compared the stormwater system as installed against the provisions, functional requirements and performance criteria of clause E1.
- 5.8 Copies of the experts' report were forwarded to the parties on 19 December 2006.
- 5.9 The applicant's agents responded in a letter to the Department dated 24 December 2006. The applicant's agents accepted the findings of the report, including the experts' recommended amendments to the constructed stormwater system. It was also noted that the applicant would complete the 5 items recommended in the report's conclusions.

6. Discussion

- 6.1 I accept that the experts' report establishes that, once the two matters referred to in paragraph 5.5 are attended to, the stormwater system will comply with clause E1.
- 6.2 The territorial authority's agents have made reference to E2 in its correspondence with the applicant's agents and in particular to sub-clause E2.3.2. However, The territorial authority's agents' concerns relate to the effect of rainwater being concentrated and driven onto the cladding. They have not raised any concerns regarding the installation and continuing compliance of the cladding itself. Taking into account the submissions from the applicant's agents, the experts report, and the lack of evidence that there is any moisture ingress, I am of the opinion that the cladding complies with the requirements of clause E2 at the present time.
- 6.3 It is emphasized that each determination is conducted on a case-by-case basis. Accordingly, the fact that particular details have been established as being code compliant in relation to a particular building does not necessarily mean that the same details will be code compliant in another situation.
- 6.4 I also note that the territorial authority's agents did not identify the lack of gutters and downpipes when it checked the design during the consent process and did indeed issue a consent in accordance with the plans provided by the applicant's agents. I would suggest that, if it has not already done so, the territorial authority's agents review their consenting procedures to ensure that design features clearly shown in consent drawings are challenged before a consent is issued, rather than later when the building work has been done and the owner seeks a code compliance certificate.

7. The decision

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

1. the stormwater drainage system as installed does not comply with clause E1 of the Building Code. There are two items to be remedied to ensure that the system meets the requirements of the code. Accordingly, I confirm the territorial authority's agents' decision to refuse to issue a code compliance certificate.
2. rectification of the items outlined in paragraph 5.5 will consequently result in the stormwater system being in compliance with clauses E1. All rectification work is to be completed to the approval of the territorial authority.
3. the cladding system installed on the house complies with clause E2 of the Building Code.

7.2 A further notice to fix should be issued that requires the owners to bring the stormwater drainage system into compliance with the Building Code. The notice to fix may list the items to be rectified but it should not specify how compliance is to be achieved as that is for the owner to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

7.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 7.2. Initially, the territorial authority should issue a 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 detailed 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 21 February 2007.

John Gardiner
Determinations Manager