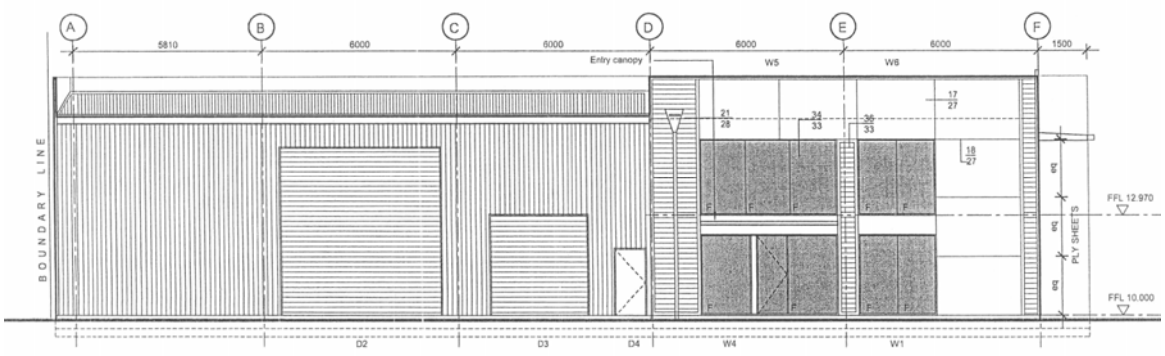
Determination 2009/44

Determination regarding the code-compliance of a commercial building at 46-48 Foreman Road, Hamilton



West elevation

1. The matters to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the Act") made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing ("the Department"), for and on behalf of the Chief Executive of the Department. The applicant is the owner of the building, the H & K Business Trust ("the applicant") acting through a legal adviser. The other party is the Hamilton City Council ("the authority") carrying out its duties and functions as a territorial authority or a building consent authority. The builder, Livingstone Brothers Ltd, has been included as a person with an interest in the determination.

1.2 I take the view that the matter for determination in terms of sections[2] 177(a) and 188 of the Act is whether the proposed building work, including sitework, complies with the Building Code[3] (Schedule 1 of the Building Regulations 1992).

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

1.3 In making this determination I have considered the following matters:

Matter 1 The building's compliance with the C Clauses (refer paragraph 6)

Matter 2 The building's compliance with Clause E1 Surface Water (refer paragraph 7)

Matter 3 The building's compliance with Clause B2 Durability (refer paragraph 8)

Matter 4 The building's compliance with Clause E2 External Moisture (refer paragraph 9)

Matter 5 The building's compliance with Clause B1 Structure, (refer paragraph 10)

Matter 6 The building's compliance with Clause G13 Foul water (refer paragraph 11)

Matter 7 The adequacy of the building consent documentation generally, and with respect to the building work as proposed (refer paragraph 12)

Matter 8 The failure of the builder to comply with the conditions of a building consent (refer paragraph 13).

1.4 Items of a contractual nature are interspersed within a number of the matters considered above, in particular Matter 8. While the determination includes discussion on items, such as Matter 8, I am not able to determine such matters under section 177 of the Act.

1.5 In making my decisions, I have considered the submissions of the parties, the reports of two experts commissioned by the Department to advise on this dispute (with respect to fire matters and surface water), and the other evidence in this matter.

2. The building

2.1 The building is currently under construction with some sitework completed and a portion of the concrete ground floor slab poured. When completed, it will be a single-storey workshop and office building with overall dimensions of approximately 30 x 12 metres (360 square metres) on plan. The building will contain a mezzanine floor with overall dimensions of approximately 12 x 12 metres (144 square metres) on plan. The building has a structural steel frame and a concrete ground floor slab and foundations.

2.2 The building has boundary walls of precast concrete panels. The remaining walls are of either steel, or timber framing, clad with a mix of either vertical profiled steel, horizontal corrugated organic fibre sheets, or plywood. The roof is steel-framed with metal purlins, and clad with profiled metal roofing, and overhangs the main wall line at the west elevation. The roof discharges into either a 200 x 150 mm gutter or a 400mm wide timber-framed internal gutter lined with a butyl membrane laid on a plywood substrate.

2.3 Approximately forty percent of the building's ground floor area is used as office accommodation and includes a mezzanine floor, the remaining sixty percent is a single full height space used as a workshop. The mezzanine floor is steel and timber

framed with 20mm particle board flooring and is lined on the underside with 13mm fire-rated plasterboard. The internal walls are timber framed and are lined with a variety of plasterboard sheets, and the office ceilings are lined with proprietary suspended systems. The full height workshop ceiling is unlined.

2.4 A steel and timber framed canopy is constructed on the south elevation and this has a roof covering of a butyl membrane laid over a plywood substrate. The underside of the canopy is lined with plywood. The building has two metal roller shutter doors and a fire-rated access door, and the remaining doors and windows are powder coated aluminium.

3. Background

3.1 On 19 December 2005 a firm of consulting engineers undertook a soil investigation, which included the drilling of 4 bore holes. In a subsequent report, dated 19 December 2005, the engineers recommended excavating the soil for an area exceeding 800mm to 1200mm beyond the proposed building line to depths from 800mm to 1200mm. The excavation would need to be backfilled with imported sand to 300kPa in accordance with NZS 3604[4]. This would allow for standard foundations to be constructed.

3.2 A report entitled "Report for: Fire Safety, Access and Safety from Falling" ("the first fire report") dated 8 December 2005 was prepared by a fire-safety consultant. The report stated that the building would be used by a maximum of 10 people, was designated as fire hazard category ("FHC") 4, and had two designated means of escape.

3.3 A second "Report for: Fire Safety, Access and Safety from Falling" ("the second fire report") dated 28 February 2007 was prepared by the same fire-safety consultant. This noted that the building was designed for less than 50 people, was designated as a WL purpose group with a FHC 2, and had a single designated means of escape.

3.4 A tender price was accepted for the construction of the building based on plans dated 23 January 2007 provided by a designer, and other documentation provided by the applicant. I note that these plans show a finished floor level of 10.000 but this level is not referenced to any datum point. The builder has stated that it was "novated" for the completion of the plans, which I understand to mean that the builder was responsible for overseeing the production of "for construction" plans. A further set of plans dated 20 March 2007 were produced by the designer, again showing an unreferenced finished floor level of 'FFL 10.000'. The minutes of a meeting that took place between the builder and the applicant on 10 April 2007, contain an initialled handwritten note stating 'drawings signed off and approved'.

3.5 On 3 May 2007, a firm of consulting engineers inspected and tested the building platform sand backfilling and confirmed that it was 'adequate for the purpose of constructing the proposed building'.

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

3.6 On 5 May 2007 the authority issued a building consent (No. 2007/17811) for 'New Construction Warehouse and Offices'.

3.7 During the building process a surface water pipe was discovered running across a corner of the site. In a letter to the builder dated 7 May 2007, the excavation contractor noted that the pipe was exposed during the site filling process. On being informed that it was no longer active, the contractor had packed both exposed ends with clay and capped them with cement and sand caps. The pipe trench was then compacted with sand layers and the site backfilling process continued. (I have received information from the applicant that the ends of the pipe have since been opened and that water is flowing from them.)

3.8 On 9 May 2007 it was discovered that the site plan had been incorrectly dimensioned. The north and east boundaries were drawn at an angle of 93° to one another when the true angle was 90°. The building had been designed to match the 93° angle.

3.9 The authority inspected the building on 11 May 2007, by which time most of the ground floor slab had been poured. In a "site advice" note relating to this inspection, the authority stated:

> Floor has been [poured] even though siting foundation failed inspection also drainage will be going up hill due to siting problem.

Handwritten notes on this document queried whether the slab had been 'poured too low' and 'plans not to client [specification]'.

3.10 A revised site plan, dated 28 May 2007, was produced by a firm of surveyors and planners that showed the as-built floor level of the building as being '99.96'.

3.11 From May 2007, concerns were raised by the applicant particularly with regard to the level of the ground floor slab and the drainage of surface water from the site. Correspondence took place involving the parties and the builder discussing these matters in detail, and reports were obtained from various consultants. I note that while I have carefully read all this correspondence I have not detailed or summarised them in this determination. This determination is based on the construction details and proposals that exist at this time.

3.12 On 13 June 2007, the builder provided the authority with a revised site plan showing the finished levels for the surface water drainage and the asphalt paving. The finished level of the floor slab of the building was shown as being 99.96.

3.13 On 16 August 2007 the builder applied for an amendment to building consent No 2007/17811 for the revised site plan. Attached to the application was a facsimile from the builder's consultants stating that to date they had inspected the following:

> Excavated building platform prior to sand backfilling.
>
> Sand pad, with penetrometer tests to 600mm.
>
> Pre concrete pour floor slab and footing.
>
> Concrete Tilt up panels 1-8.

3.14 On 25 September 2007 the builder applied for a further amendment to the building consent regarding revised surface water drainage. This was accompanied by a revised sitework and drainage plan dated 29 August 2007.

3.15 I note that the authority approved all the plans provided with the two applications for amendment and in an "Inspection Memo" dated 26 September 2007 stated:

> Further to inspection 11 May 2007. Siting of building approved per amended plan AO/a. Approved 28 August 2007. Is passed.
>
> [The builder's consultants] fax 18 July '07 confirms their inspection of works to date and HCC will accept PS4 from [the consultants] as reasonable grounds for completion with Building Code and their designs.

3.16 The application for a determination was received by the Department on 7 March 2008.

4. The submissions

4.1 The applicant submitted copies of:

- various plans forwarded to the authority up to 20 March 2007
- the specification
- consent documentation
- various consultants' reports
- documents, correspondence and photographs supporting its application and describing the background (as summarised in paragraph 3) to the matters to be determined.

4.2 In its submission the applicant set out eight matters of concern, summarised as follows:

- The accuracy of the consented plans and changes required arising from:
  - internal building changes
  - correction of the section shape
  - new car parking layout
  - correct building shape
  - level of the as-built floor slab
  - surface water and drainage plans
- The code-compliance of the building, taking into account the increased ratio of the mezzanine to the ground floor area and the related fire-safety matters.
- The code-compliance of the as-built ground floor slab, its relationship to exterior levels and Acceptable Solution E1/AS1, and whether the building complies with Clause E1 Surface water.
- The code-compliance of the proposed surface water drainage systems and the drainage of the carpark.

- The significance of an existing surface water pipe that runs through one corner of the building site.
- The code-compliance of the foul water drainage system.
- Whether the authority should have issued a building consent based on the information provided to it, particularly in relation to the floor level and the surface water drainage system.
- The failure of the builder to comply with the conditions set out in the building consent with particular reference to the inspection and testing procedures.

4.3 The authority made no submission in response to the application.

4.4 The draft determination was issued to the parties, and the builder, for comment on 21 November 2008. The applicant did not accept the draft, and requested a hearing.

4.5 The applicant also noted that the difference between the ground level and the level of the as-built slab along the north and east boundaries was greater than noted in the draft determination (refer paragraph 9.3.2). I have amended the determination as appropriate.

4.6 The authority responded to the draft determination in an email to the Department dated 13 January 2009 citing areas where it disagreed with the draft. In summary the authority said:

- The authority considered the consented plans provided a code-compliant solution as the plans showed 'a 150mm drop from floor slab to "paved" ground'.
- An 'advisory note' issued with the building consent approval required an overflow relief gulley trap to be installed. However, the authority advised it had changed its policy, with respect to consent documentation generally, and was requiring all relevant information to be shown on the consented plans.
- The fire report states that stairs are to be accessible, and the PIM also requires compliance with Building Code with respect to access matters.
- Although the use of the ground floor toilets was not clear on the plans, the authority believed 'the intention for compliance was obvious'.
- The mechanical ventilation and fire alarm systems were to be completed via producer statements received from recognised installers and/or authors.

4.7 I acknowledge the authority's comments. In response to the first bullet point, the determination (refer paragraph 9.3.1) has found that the consented plans assumed a flat site. With the floor slab as-built the finished ground floor is in the order of 250 to 400mm below the adjacent ground along the North and East site boundaries. It is unclear how the '150mm drop' shown in the plans is going to be achieved.

5. The hearing

5.1 A hearing was held on 1 April 2009 before me. I was accompanied by a Referee engaged by the Chief Executive under section 187(2) of the Act. Also in attendance were:

- the applicant, the applicant's legal adviser, and the applicant's engineering adviser
- two representative's from the authority
- three officers of the Department.

5.2 The applicant raised three main issues for discussion at the hearing:

- the application of Clause E1.3.3
- the applicability of E1/AS1
- the applicability of the performance criteria of Clause E2.

5.3 There was also discussion on the manhole invert levels and the drainage system designs.

5.4 These issues were discussed by the parties, and the evidence presented enabled me to amplify or clarify various matters of fact and was of assistance to me in preparing this determination.

5.5 A visit to the site enabled further discussion amongst the parties, and allowed me to clarify matters that were discussed during the hearing. It also provided me with an opportunity to view the placement of the manhole, and sight the levels of the slab, the road, and the surrounding sites.

6. Matter 1: Compliance with the C Clauses

6.1 Relevant provisions of Acceptable Solutions C/AS1 include:

6.21 Smoke Control

Firecells with limited area intermediate floors

6.21.6 The total area of limited area *intermediate floors* within the *firecell* shall not exceed:

b) 40% of the area of the *firecell* floor, not including the area of the *intermediate floor(s),* where the *intermediate floor(s):*

i) are completely open, or

ii) if enclosed or partitioned, a Type 4 or Type 7 alarm system with smoke detection is installed throughout the firecell.

Table 2.1: Purpose Groups
Paragraphs 1.3.4, 2.1.3, 2.2.1, 2.2.10, 5.6.11 and 5.6.13

Purpose group	Description of intended use of the building space	Some examples	Fire hazard category
WL	Spaces used for working, business or storage – low *fire load*.	Banks, hairdressing shops, beauty parlours, personal or professional services, dental offices, laundry (self-service), medical offices, business or other offices, police stations (without detention quarters), radio stations, television studios (no audience), small tool and appliance rental and service, telephone exchanges, dry meat processing.	2
WH	Spaces used for working, business or storage – high *fire load* and slow/medium/ fast *fire* growth rates (e.g. <1 MW in 75 sec) **(Note 1)**.	Chemical manufacturing or processing plants, distilleries, feed mills, flour mills, lacquer factories, mattress factories, rubber processing plants, spray painting operations, plastics manufacturing, bulk storage of *combustible* materials over 3 m high (excluding *foamed plastics*).	4
WF	Spaces used for working, business or storage – medium/ high *fire load* and ultra fast *fire* growth rates (e.g. >1 MW in 75 sec) **(Note 1)**.	Areas involving significant quantities of highly *combustible* and flammable or explosive materials which because of their inherent characteristics constitute a special *fire hazard*, including: bulk plants for flammable liquids or gases, bulk storage warehouses for flammable substances, bulk storage of *foamed plastics*.	4 (The critical factor in this *purpose group* is the rate of *fire* growth.)

6.2 The fire expert's report

6.2.1 As discussed in paragraph 1.5 I engaged an independent fire expert ("the fire expert") to provide me with an assessment of some of the fire-safety provisions detailed in the building consent documentation. The fire expert is a fire engineer who is a Member of the Institution of Professional Engineers New Zealand, and a Chartered Professional Engineer.

6.2.2 The fire expert produced a report dated 6 August 2008, which was a review of the plans and the first and second fire reports (refer paragraphs 3.2 and 3.3). I summarise the conclusions reached in the fire expert's report as follows:

6.3 The fire hazard category ("FHC") of the building

6.3.1 While the first fire report states that a FHC 4 design is to be provided, the building as designed does not comply with C/AS1 for a FHC 4 building. The second fire report indicated a design for a FHC 2 building, which did not comply with the applicant's reported intentions for FHC 4 use.

6.3.2 The first fire report had incorrectly calculated the S Rating, meaning that the precast panels as proposed would not provide the adequate fire rating required for a FHC 4 design. Effective fire venting required by a FHC 4 design has not been provided in either of the reports or in the plans. It appeared that the calculations that each report noted were required for the fire rating of the precast panels had not been provided.

6.3.3 While the first fire report is based on a FHC 4 design, the "enclosing rectangles calculation" in that report is for a FHC 2 design. The second fire report is not consistent in describing which external walls are to be 90 minute fire-rated. There are inconsistencies with both reports and the plans with respect to building heights which affects return wall calculations and lengths for a FHC 4 design. The return wall lengths given in the second fire report are acceptable for a FHC 2 design.

6.4 The fire alarm system

6.4.1 The second fire report requires a 'Type 4f automatic fire alarm system with Smoke detectors and manual call points throughout the building' in accordance with NZS 4512: 2003. The second fire report forms part of the consent documentation.

6.4.2 It is possible that with a Type 4f smoke detection system emissions from vehicles and operations, such as welding, could give rise to false alarms. In addition, the specification for the fire alarms lacks sufficient details to show how compliance with the Building Code is to be achieved.

6.4.3 The specification for the work that forms part of the building consent refers to 'NZBC F7/ASI Warning systems, 3.1 Domestic smoke alarms', and requires that the manual fire alarm system is to be installed 'to the system manufacturer's requirements, with outlets fitted neatly and without damage to surrounding finishes.'

6.5 The mezzanine floor limitation

6.5.1 The mezzanine floor subject to the first fire report does not comply with C/AS1 as the building use is designed as FHC 4. Limited area intermediate floors are not permitted and smoke control was not provided. The mezzanine floor subject to the second fire report does not strictly comply as its area exceeds the revised ground area by more than the 40% limit allowed by C/AS1. However, the expert was of the opinion that the very slight increase over 40%, while not strictly in compliance with C/AS1, did not make the building non-compliant with the Building Code.

6.6 The fire expert concluded that the fire issues arising in the design and the fire reports do not allow for a FHC 4 design.

6.7 The fire expert's report was sent to the parties for comment on 11 August 2008.

6.8 The authority responded to the fire expert's report in an email to the Department dated 29 August 2008 in which it queried the relevance of the first fire report. In response I note that the applicant had included the first fire report with the application information provided to both the authority and the Department.

6.9 Discussion

6.9.1 The fire expert has noted that the building, in terms of C/AS1, complies as a FHC 2 design, but not as a FHC 4 design. If the applicant requires the building to meet FHC 4 design requirements, the fire expert has raised concerns as to the lack of fire venting, the fire rating of the precast panels, the 90 minute fire ratings and the lengths of the return walls.

6.9.2 If the applicant requires a building that complied with a FHC 4 design, then that is a contractual matter that I cannot determine.

6.9.3 Irrespective of the fire hazard rating to be used in the building, the fire expert has cast doubt on the efficiency of the proposed fire alarm system detailed only in the fire reports.

6.9.4 The fire expert notes that the ratio of the mezzanine to the ground floor area of the building slightly exceeds the 40% limit stated in C/AS1. My calculations lead me to believe that the actual ratio is 40.2%. While this exceeds the requirement of C/AS1 by a very small margin in terms of a "reasonable grounds" assessment, I consider that the building with respect to the area of the mezzanine, is code-compliant.

6.10 Conclusion

6.10.1 I conclude that the building work, as a FHC 2, complies with the C Clauses of the Building Code. However, the specification for the fire alarms lacks sufficient details to show how compliance with the Building Code is to be achieved.

7. Matter 2: Compliance with Clause E1 Surface Water

7.1 The relevant provisions of the Building Code Clause E1 include:

Clause E1—SURFACE WATER

Provisions	**Limits on application**
Performance	
E1.3.1 Except as otherwise required under the Resource Management Act 1991 for the protection of other property, surface water, resulting from an event having a 10 percent probability of occurring annually and which is collected or concentrated by buildings or sitework, shall be disposed of in a way that avoids the likelihood of damage or nuisance to other property.	
E1.3.2 *Surface water*, resulting from an event having a 2 percent probability of occurring annually, shall not enter *buildings*.	Performance E1.3.2 shall apply only to *Housing*, *Communal Residential* and *Communal Non-residential buildings*.
E1.3.3 Drainage systems for the disposal of surface water shall be constructed to: (a) Convey surface water to an appropriate outfall using gravity flow where possible, (b) Avoid the likelihood of blockages, (c) Avoid the likelihood of leakage, penetration by roots, or the entry of ground water where pipes or lined channels are used, (d) Provide reasonable access for maintenance and clearing blockages (e) Avoid the likelihood of damage to any outfall, in a manner acceptable to the network operator, and (f) Avoid the likelihood of damage from superimposed loads or normal ground movements.	

7.2 Relevant provisions of Acceptable Solution E1/AS1 include:

1.0.1 This Acceptable Solution is limited to buildings and sitework having a catchment area of no more than 0.25 hectares and which are:

c) Not located in low lying area, . . .

7.3 The surface water expert's report

7.3.1 As discussed in paragraph 1.5 I engaged an independent surface water expert to provide me with an assessment of the ground floor slab and adjacent site levels, and the surface water discharge from the building and the building site. The surface water expert is an environmental engineer.

7.3.2 The surface water expert investigated the relevant documentation, visited the site, took site levels, and produced a report that was dated 1 October 2008. The requirements of Clause E1.3.2 do not apply to this building by virtue of its intended use.

- While the current floor level complied with the relevant Building Code requirements, it was too low in relation to ideal drainage requirements and may not meet the applicant's expectations.
- The site is located in a local low point within a flat catchment area and is susceptible to recurring ponding in moderate to large events.
- Flooding of the building 'could roughly occur around every 10 years'. A more detailed assessment would be required to provide a more accurate figure.
- It was unclear whether the requirements of Clause E1.3.3(a) could be met because there was some doubt whether the "appropriate outfall", into which the drainage system was to be discharged, had the capacity to accept the runoff from the site in a storm event.

7.3.3 The concrete floor slab as built is about 30mm below the lowest road crest and from this it could be surmised that the likely level of flooding that could be expected in the building, in a 10-year event, would be of that order.

7.3.4 The surface water expert recommended that the floor level of the building be raised to alleviate the risk of water entering the building, noting that this would exceed the requirements of the Building Code. In addition, if the floor level was raised the existing surface water pipework would be better able to serve the building.

7.3.5 The surface water expert's report was sent to the parties for comment on 14 October 2008.

7.4 The application of the requirements of Clause E1.3.3(a)

7.4.1 The applicant's submissions

7.4.1.1 In a letter to the Department, dated 23 October 2008, the applicant said it did not accept the findings of the surface water expert's report saying:

> [The report] suggests that the road is suspected of regular flooding and accordingly the Council drain may be unable to cope. However, [the report] concludes by saying that if the storm water system is designed to deal with a 10 year event then it will be adequate. This bare assertion is not supported by the evidence that regular flooding occurs and is based solely on an assumption as to the design of the storm water system.
>
> [The report] does not appear to deal with the issue of the ability of the drainage system to convey the surface water. . . . [The report] identifies that not only is there a

> likelihood of water not being conveyed to an appropriate outfall — either by gravity or pump, but there is also the possibility of reverse flow into the car park. The fact that [the report] identifies that nuisance flooding on the car park is expected to occur frequently at its current level appears to confirm non-compliance with E1.3.3 . . .

7.4.1.2 At the hearing the applicant accepted that Clause E1.3.2 does not apply to this building; however, the applicant said that the requirements of Clause E1.3.3 should be considered as overriding the requirements of Clause E1.3.1.

7.4.1.3 In particular the applicant considered that the draft determination did not consider the performance of Clause E1.3.3(a), which is that surface water shall be conveyed to an appropriate outfall. The applicant submitted that in concluding the proposed building work would be code-compliant the draft determination only considered Clause E1.3.3 in terms of the requirements of meeting Clause E1.3.1 rather than giving independent consideration to each of the requirements of Clause E1.3.3 and, in particular, E1.3.3(a).

7.4.1.4 The applicant explained that flooding on the site would be a side effect of the 'inadequacy' of the proposed drainage system. The applicant contended that despite the requirements of Clause E1.3.1 being met, an appropriate outfall was not able to be provided, and therefore the building work did not comply with Clause E1.

7.4.1.5 In a letter to the Department, dated 21 April 2009, the applicant submitted a report from the applicant's engineering adviser dated 9 April 2009. The report concluded that the:

> … proposed 'lowered' drainage scheme does not discharge to an appropriate outfall (Refer NZBC Clause E1.3.3a) as not only will it not function adequately for various 2yr and 5yr events, it will in fact actually allow flows … to backflow into the carpark.

7.4.2 My response to the submissions

7.4.2.1 I disagree with the applicant's contention that the requirements of Clause E1.3.3(a) apply in isolation to the requirements of Clause E1.3.1. I note that all of the attributes in Clause E1.3.3(b) to (f) are equally important and should be read together to reinforce the objectives of E1.3.3(a).

7.4.2.2 Firstly, if the applicant's interpretation was correct, and the requirements of E1.3.3 were to be taken in isolation as absolute requirements, then there would be no need for Clauses E1.3.1 and E1.3.2.

7.4.2.3 Secondly, the requirements of Clause 1.3.3 are, in my view, a means of delivering the outcomes inherent in Clauses E1.3.1 (the protection of other property) and E1.3.2 (minimising the incidence of surface water entering housing). Therefore, the means of delivery described in E1.3.3 need not exceed the specific requirements of Clauses E1.3.1 and E1.3.2 as is contended.

7.5 The applicability of E1/AS1

7.5.1 The applicant's submissions

7.5.1.1 The applicant disagreed with the contention in the draft determination that Acceptable Solution E1/AS1 does not apply because the catchment area had a history

of flooding and is located in a low lying area. The applicant said this was not the case, and the Acceptable Solution should be considered applicable. The applicant noted that the site was originally not low lying, but had been excavated to make it so, and that there was no history of flooding in the area. The authority confirmed there was no history of flooding in the area.

7.5.1.2 The applicant also noted that the difference between the ground level and the level of the as-built slab along the North and East boundaries was greater than noted in the draft determination (refer paragraph 9.3.2).

7.5.2 My response to the submissions

7.5.2.1 The limitations of scope contained in paragraph 1.0.1(c) of E1/AS1 apply to the site as it has been developed, so in my view Acceptable Solution E1/AS1 does not apply in this instance. Irrespective of this, the requirements of E1/AS1 are not mandatory, and E1/AS1 provides one means, but not the only means, of complying with Clause E1.

7.5.2.2 With respect to the applicant's other submissions, I have amended the determination as appropriate.

7.6 The applicability of the performance requirements of Clause E2 to Clause E1

7.6.1 The applicant's submissions

7.6.1.1 In a letter to the Department, dated 14 October 2008, the applicant did not accept the surface water expert's report, submitting that the as-built ground floor slab must also meet the requirements of Clause E2.3.2 which says that walls and roofs 'must prevent the penetration of water that could cause undue dampness, damage to building elements, or both'. The applicant submitted that the meaning of "undue" in relation to the penetration of external moisture (Clause E2) should also be applied to the ingress of surface water under Clause E1.

7.6.1.2 At the hearing, the applicant submitted that the prevention of "undue dampness" required by Clause E2.3.2 was considered in the draft determination but only with respect to the one in 50 year event referred to in Clause E1.3.2. However in this case, surface water will enter the building in a one in ten year event, or possibly a one in five year event. If the building elements were to become wet from a one in five, or a one in ten year flood, this did not meet the prevention of undue dampness required by Clause E2.3.2. The frequency with which water will enter the building at this level should be considered "undue".

7.6.1.3 On 21 May 2009 the applicant submitted the decision made by an Adjudicator pursuant to the Construction Contracts Act 2002 issued on 4 May 2009. The adjudication was between the applicant (as the claimant) and the builder (as the respondent).

7.6.1.4 The Adjudicator considered the following questions:

(a) the likely damage caused to the building and its elements in the event of a flood;

(b) compliance with clauses B2 and E2 of the Building Code.

Compliance with Clause E1 was not considered. The Adjudicator's observations with respect to Clause B2 are discussed in paragraphs 8.2.4 and 8.2.5.

7.6.1.5 With respect to Clause E2, the Adjudicator said:

> the likely dampness and/or damage that would be suffered in the event of a flood would be "undue" in accordance with clause E2.3.2 of the Building Code.

The Adjudicator said, in conclusion:

> I also think that a reasonably prudent builder would not have constructed a building into a hole without giving careful thought to drainage and how water ingress would be managed.

7.6.2 My response to the submissions

7.6.2.1 The term "external moisture" as used in Clause E2 is not defined therefore it must be given its ordinary and natural meaning in context. I observe, however, Functional Requirement E2.2 which says 'Buildings must be constructed to provide adequate resistance to penetration by, and accumulation of, moisture from the outside', and, accordingly, I take external moisture to be any moisture that originates from outside the building, including surface water.

7.6.2.2 Applying the functional requirement E2.2 to the water sources usually associated with Clause E2 means, in practical terms, that water should not penetrate individual building assemblies such as wall and roof claddings, basement tanking, damp proof membranes, and the like.

7.6.2.3 However, if applied to surface water it is not reasonable to take the Functional Requirement E2.2 (refer paragraph 9.1) to override the specific requirements of Clause E1 and come to the view that surface water flooding is not to penetrate the building by entering between doors and door jambs, under doors, or through wall and floor junctions. Such junctions, in every other respect, would comply with Clause E2.

7.6.2.4 Clause E2 requires avoidance of "undue dampness"; it does not require the avoidance of "dampness". The limitation on Clause E1.3.2 makes a clear distinction between the Building Code's requirements for, in general terms, a residential building and the subject building, where, by inference, "undue" has a much lower threshold than for a residential building. The Building Code requires a residential building to be able to resist the 50 year event, but there are no requirements in respect of the subject building.

7.6.2.5 What is considered "undue dampness" also varies with the source of the water. What might be considered undue dampness in respect of the ingress of surface water will occur infrequently (in the order of years), while what might be considered undue dampness in respect of, say, rainfall penetrating a roof will occur more frequently (in the order of days, or months).

7.6.2.6 I concur with many of the observations made by the Adjudicator with respect to the adverse effects that likely inundation will have on the building's ability to comply

with Building Code. However, I do not accept that the performance requirements of Clause E2 can be applied to Clause E1 as discussed above.

7.6.2.7 I also note that not all the elements considered in the adjudication (such as carpet and demountable partition) can be considered building elements to which the Building Code applies. Paint coatings, and linoleum are only considered building elements to the extent that they are required to achieve compliance with Clauses B2, E2 or E3.

7.6.2.8 I conclude that it is not reasonable to apply the performance requirements of Clause E2 to Clause E1. However, I accept that all the building elements must comply with Clause B2: this is considered in paragraph 8.

7.7 The capacity of the authority's surface water system and the use of the road as a secondary flow path

7.7.1 In an email to the Department, dated 2 April 2009, the authority advised that the road adjacent to the site was intended to act as an overland flow path and that the road acts as a detention device. The authority said that its surface water disposal system was designed for the 5-year rainfall event, and for events greater than this the roadway was intended to act as a secondary flow path. It confirmed that if surface water entered the roadway from this site this did not, in their view, constitute a nuisance under E1.3.1.

7.7.2 In the same email, the authority advised of a third surface water manhole adjacent to the site that was 'in the order of 1.5 metres deep', and which was closer to the proposed catchpit in the parking area. The authority noted that the use of this third manhole was another option open to the parties

7.8 The status of the pipe running through the corner of the building site

7.8.1 The applicant has questioned the significance of an existing pipe that runs through one corner of the building site and its future impact on the building itself.

7.8.2 I suggest that the applicant and the authority carry out a joint inspection of the pipe in question and arrive at a solution that identifies the pipe's significance and any measures required to mitigate any effect on the building work or on other property.

7.9 Discussion

7.9.1 The surface water expert's report says 'even if the [authority's drain] is designed for commercial property, and hence a 5 year event, it is likely ponding on the site will contain additional water to the 10 year event, such that nuisance to neighbours is not caused'. The surface water expert is of the opinion that the requirements of Clause E1.3.1 will be met even if the authority's drain is running full.

7.9.2 The authority has confirmed that the surface water disposal system is designed for the 5-year rainfall event, and for events greater than this, the roadway is intended to act as a secondary flow path. The roadway is considered other property, but in this instance surface water entering the roadway from the site does not constitute a nuisance in contravention of Clause E1.3.1.

7.9.3 The requirements of Clause E1.3.2 apply only to housing, communal and communal non-residential buildings. As the building contains workshop and office facilities it is not required to meet the requirements of Clause E1.3.2, which I note the applicant accepts (refer paragraph 7.4.1.2). Accordingly, even though, and as noted by the surface water expert, there is the likelihood of water entering the building on an average of every 10 years; this in itself does not make the building non-compliant with Clause E1.

7.9.4 The requirements of Clause E1.3.3 are only relevant in respect of the requirements of Clause E1.3.1.

7.9.5 I note that the Department's surface water expert and the applicant's engineering adviser have provided differing opinions as to the period during which surface water is likely to inundate the site. In my view, how often non-residential buildings are flooded is not relevant to the consideration of compliance with Clause E1.

7.9.6 I accept that the likelihood of flooding to the building may not be acceptable to the applicant. I note that the Building Code sets minimum standards and that the applicant may wish to exceed these. The surface water expert has suggested various options that could improve surface water drainage. The authority has also advised of an alternate manhole with a lower invert level that could be used as the outfall. These are all matters for the applicant's further consideration.

7.10 Conclusion

7.10.1 I conclude that the building work complies with Building Code Clause E1 Surface Water.

8. Matter 3: Compliance with Clause B2 Durability

8.1 Relevant provisions of the Building Code Clause B2 Durability include:

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.

(c) 5 years if:

(i) The building elements (including services, linings, renewable protective coatings, and *fixtures*) are easy to access and replace, and

(ii) Failure of those *building elements* to comply with the *building code* would be easily detected during normal use of the *building*.

8.2 The applicant's submissions

8.2.1 In the applicant's letter to the Department, dated 14 October 2008, the applicant said that the level of the floor slab and the incidence of flooding meant that the building's compliance with Clause B2 Durability and Clause G9 Electricity would be compromised. Periodic flooding would lead to the shortening of the expected life of the building elements, and, with the ground floor flooded, the building would not comply with Clause G9.

8.2.2 In a further letter to the Department, dated 23 October 2008 the applicant reaffirmed its non-acceptance of the findings of the surface water expert's report saying:

> The simple requirement is that water from outside the building must not penetrate the exterior walls and floors and cause dampness or damage to building elements.
>
> It cannot be that a building can be constructed such that it is likely to flood regularly and damage building elements.
>
> B2 of the Building Code also provides for the durability of building elements. It seems that there are some real concerns as to whether the building elements subject to frequent wetting will continue to satisfy the performance requirements of the Building Code.

8.2.3 The letter also included a table listing the various building elements on the ground floor that were likely to be damaged in the event of a flood. Most of the elements had a 5 year durability period but the exceptions were the timber framing supporting the structure and the fire rated elements (both are required to be durable for the life of the building, being not less than 50 years).

8.2.4 In the adjudication submitted by the applicant (refer paragraph 7.6.13), the adjudicator considered the likely damage that would occur to what were described as 'building elements' in the event of a flood, these elements being the 'carpet, linoleum, wall linings, paint coatings, demountable partitions, doors, built-in office furniture, fire-rated walls, internal wall framing, and electrical fittings'.

8.2.5 The adjudicator considered the likely damage to these elements meant that compliance with Clause B2 was not met. The adjudicator said, in conclusion:

> On the assumption that a two year flood event is a possibility as a result of the construction methods utilised by the [builder], in my opinion, I do not think that the works are fit for their purpose.

8.3 My response to the submissions

8.3.1 I concur with many of the observations made by the adjudicator. In particular the adverse effects that likely inundation will have on the building's ability to comply with Building Code Clause B2.

8.3.2 In my view the probable failures highlighted by the adjudicator should be considered as a failure of those building elements to comply with Clause B2, as discussed above, and not with Clause E1 or E2.

8.4 Discussion

8.4.1 The building is required to comply with the requirements of Clause B2. The building elements must therefore be sufficiently durable, for the periods required by Building Code Clause B2 allowing for, amongst other things, the likely inundation by surface water.

8.4.2 If inundation occurs at a frequency that will adversely affect the required durability of the building element concerned, such as enclosed wall framing or internal linings, then the durability performance of those elements must be increased to match the environment in which they are required to perform. This is no different from, for example, using stainless steel fixings in a marine environment because galvanised steel fixings will not be sufficiently durable.

8.4.3 It has been established that the building will be periodically inundated and this eventuality must be allowed for in the design of the building including the durability of the building elements used. I note the specification currently requires framing in exterior to be treated to H1.2 and interior framing to be treated to H1.1, no reference is made to a higher treatment for, say, bottom plates.

8.4.4 How compliance is to be achieved is open to the applicant to propose. However, two possible approaches to resolving the matter are either, or a combination of:

- using sufficiently durable materials, for example, framing with increased preservative treatment, appropriate fixings, linings, insulation, fire proofing, so that the required durability periods are achieved
- raising at-risk elements above the likely level of flooding by, for example, supporting walls on concrete plinths or laying a concrete screed.

8.4.5 With respect to electrical services, these need to be designed with appropriate safeguards if subjected to flooding, or alternatively put at a level where they will not be exposed to the risk.

8.5 Conclusion

8.5.1 For the reasons given above, I do not consider that the building as consented and with the floor slab as-built, will comply with Building Code Clause B2 Durability.

9. Matter 4: Compliance with Clause E2 External Moisture

9.1 Relevant provisions of the Building Code Clause E2 External moisture include:

Functional requirement

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

Performance requirements

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

E2.3.3 Walls, floors, and structural elements in contact with, or in close proximity to, the ground must not absorb or transmit moisture in quantities that could cause undue dampness, damage to building elements, or both.

E2.3.5 Concealed spaces and cavities in buildings must be constructed in a way that prevents external moisture being accumulated or transferred and causing condensation, fungal growth, or the degradation of building elements.

9.2 Relevant provisions of Acceptable Solution E2/AS1 include:

Figure 65 and Table 18 from Acceptable Solution E2/AS1:

Figure 65: Levels and garage openings
Paragraphs 9.1.3 and 9.1.3.4

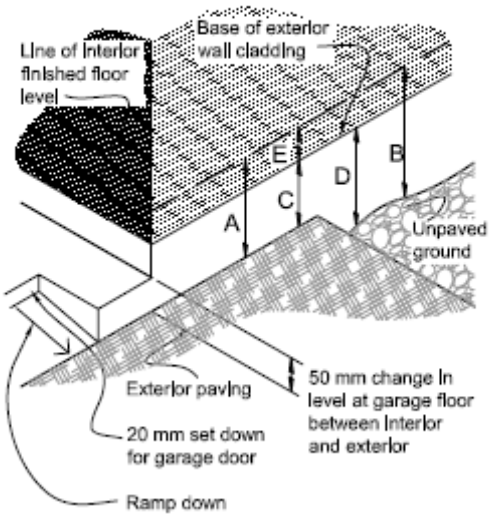


Table 18: Clearances
Paragraphs 9.1.3, 9.1.3.2, 9.1.3.3, 9.1.3.4 and 10.3.5

Minimum clearances (mm)	Masonry veneer		Other claddings				
	A	B	A	B	C	D	E
Concrete slab	100	150	150	225	100	175	50
Timber floor	Refer Note		Refer Note		100	175	50

NOTE: Refer to NZS 3604 for requirements.

9.3 Ground clearances

9.3.1 The consented plans were drawn assuming the building was located on a flat site. I consider the plans showed an adequate clearance shown between the wall cladding and ground, and therefore it was reasonable to conclude that compliance with Clause E2 would have been achieved.

9.3.2 With the slab at the level it has been formed, the finished level of the ground floor is in the order of 250mm to 400mm below the adjacent properties to the north and east. The applicant has therefore questioned whether the consented plans will comply with Clause E2 with the adjacent ground at the higher level.

9.3.3 E2/AS1 shows minimum ground clearances in Table 18. I observe that various commentators have noted the 150mm dimension used in Table 18 as the required distance between the floor slab and the level of the adjacent car park. The 150mm dimension is not mandatory; a lesser dimension can be used, provided the requirements of the Building Code are met.

9.3.4 In my opinion the consented plans, with the ground floor slab at the level it has been poured, do not provide a compliant-solution with respect to Clause E2. However, there is no reason why appropriate detailing of the wall/floor junction along the boundary walls will not prevent the ingress of external moisture. Possible solutions are contained in paragraph 12 of E2/AS1.

9.4 Accumulation of moisture in concealed spaces as a result of flooding

9.4.1 Clause E2.3.5 requires that cavities and concealed spaces in buildings must be constructed in a way that prevents the accumulation of external moisture causing 'fungal growth, or the degradation of building elements'. Compliance with this clause needs particular attention given that the building is likely to be subject to inundation from flooding on a regular basis.

9.4.2 Unlined walls to the workshop, even with periodic flooding will dry out quickly and not promote fungal growth. However, internal and external walls to the ground floor office area are lined and also contain thermal insulation. It is likely that the insulation will retain moisture.

9.4.3 Despite the external walls to the office area containing a drained and ventilated cavity, the cavity, in my opinion provide insufficient provision for the dissipation of moisture. There is no provision for moisture to dissipate from the internal walls. The ground floor also contains a number of concealed spaces, including the area under both sets of stairs, services ducts, built-in furniture, and fire protection to the steel portals. It is unclear what provision, if any, has been made to enable any water in those areas to dissipate.

9.4.4 In my opinion, the proposed building does not prevent fungal growth in cavities and concealed spaces and accordingly does not comply with Clause E.2.3.5.

9.5 Conclusion

9.5.1 I conclude that the proposed building will not comply with Building Code Clause E2.

10. Matter 5: Compliance with Clause B1 Structure

10.1 The building has been designed with the incorrect plan shape referred to in paragraph 3.8, but I have been presented with no evidence to suggest that the building has not been designed correctly to allow for this slight eccentricity.

10.2 That being the case it is reasonable to assume that the structure will perform equally well with the correct plan dimensions. However, this should be verified by the applicant and the structural plans amended accordingly. Refer to paragraph 13.3 with respect to the adequacy of the building platform and the section of ground floor slab as poured.

10.3 I have no grounds on which to conclude that the as-built work, and the proposed building, will not comply with Clause B1.

11. Matter 6: Compliance with Clause G13 Foul water

11.1 The drainage layout in the plans appears to comply with Clause G13, however, there is no schematic drawing of the stack and not all the sanitary pipework has been sized. The specification for the drainage work is not job-specific and includes reference to the installation of, for example, a septic tank when none is required.

11.2 The drainage plan does not show an overflow relief gully and it is unclear whether one has been considered as it is included on the legend to the plan. An overflow relief gully is required for habitable buildings but is optional for the subject building.

11.3 In an email to the Department, dated 28 July 2008, the authority accepted that the detail was poor but considered it sufficient to issue the consent, and that as-built drainage plans would also be sought. The authority noted that an overflow relief gully was a condition (Item 19) of the building consent. I refer to the standard of the building consent documentation in paragraph 12.3.3.

11.4 I conclude that there is insufficient information in the consent documentation to show how proposed building will comply with Building Codec Clause G13.

12. Matter 7: The building consent documentation

12.1 Relevant sections of the Act include:

> **49 Grant of building consent**
>
> (1) A building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.
>
> **94 Matters for consideration by building consent authority in deciding issue of a code compliance certificate**
>
> (1) A building consent authority must issue a code compliance certificate if it is satisfied, on reasonable grounds, --
>
> (a) that the building work complies with the building consent . .

12.2 The validity of the amendments made to the original consent

12.2.1 In a letter to the Department, dated 21 April 2009, the applicant raised concerns about the builder acting on the applicant's behalf in applying for the building consent and the subsequent amendments. The applicant said the builder had 'no authorisation upon which to apply for the building consent' and that the amendments to the building consent were 'invalid'.

12.2.2 Correspondence passed between the applicant and the authority about this matter, which concluded with the authority submitting that the applicant had not formally advised the authority that the builder was no longer acting as the agent until after the third amendment to the surface water plan had been received.

12.2.3 Although I have noted the concerns regarding the validity of the amendments to the consent, I do not believe this matter in any way affects my ability to consider whether the proposed work complies with the Building Code.

12.3 The standard of the consent documentation

12.3.1 In my opinion the plans and specification submitted with the application for consent are generally not to an acceptable standard and contain a number of inconsistencies

and omissions. The plans are not consistent with the specification. Examples of the inconsistencies, with respect to the claddings alone, are:

- The external elevations do not clearly show what the claddings are. The south elevation notes a roof overhang as being clad with coloursteel, the roof plans show it as Buytnol. The depth of the Onduline profile is not specified.
- The plans refer to the Butynol membrane to the gutters and the canopies differently as 1.0mm, 1.5mm, and as a 'double layer' application.
- The roof claddings are variously described on the plans as 'LT7', 'MC770' and 'Colorsteel'. The specification refers to the roofing as 'galvanised sheet steel' and '0.55mm thick aluminium'. The structural specification says the roofing is to be '0.4mm Colorsteel Styline'.
- The metal wall cladding is not specified.
- The plans refer to plywood soffits, the specification refers to fibre-cement soffits.

From this it is not possible to determine what claddings are consented, or what claddings are intended to be installed.

12.3.2 With respect to specific Code clauses, not otherwise commented upon elsewhere in this determination, the following was noted:

D1 Access

- D1/AS1 specifies a maximum riser height for accessible stairs of 180mm. The stairs shown on the plans have a riser height of 186mm.

G1 Personal Hygiene

- It is unclear whether the toilet facilities of the ground floor comply with Clause G1. If these toilets are to be considered unisex, G1/AS1 requires that a basin must be located in each toilet cubicle.

G4 Ventilation

- It is unclear how some of the toilets are to be ventilated. The electrical plans show mechanical ventilation to some toilets but not others. There do not appear to any details of the mechanical ducting and the associated fans, controllers, etc, that will provide the ventilation. It is likely the ducting will penetrate the various fire walls as well as the building's exterior and these penetrations will need to be detailed.

12.3.3 In an email to the Department, dated 28 July 2008, the authority said that it accepted some matters were incorrectly shown but considered that these would be satisfactorily managed during construction and also that most matters were covered by the conditions contained in the approved building consent. In my opinion conditions placed on an approved building consent cannot be used to make up for lack of detail or non-compliant items in the same consent documentation.

12.3.4 The authority also considered the builder was 'very well respected and capable' and that the builder could be relied upon 'to deliver a quality building that complies with the [Building Code]'.

12.3.5 My observations are in respect of the standard of the consented plans and specifications, not the quality of the as-built construction. Any builder, irrespective of their competence, must be able to rely on the consented documentation. The completeness of the consented documentation must not vary according to the competence of the builder.

12.3.6 I am aware that the "novation" and "design and build" aspects of the builder's contract may differ from the normal provision of consent documentation made on behalf of a client. A "design and build" contract between a builder and an owner may not lead to all documentation being supplied to an authority with the initial application for consent. In such circumstances a staged consent is necessary so all stages of the work are approved as the work proceeds.

12.3.7 Section 49 of the Act says that a building consent authority must grant a building consent only if it is satisfied on reasonable grounds that the provisions of the Building Code will be met if the work is completed in according with the plans and specifications. In my opinion the plans and specifications supplied for this project do not indicate with sufficient clarity how compliance is to be achieved.

12.3.8 Section 94(1)(a) of the Act says a building consent authority must issue a code compliance certificate only if it is satisfied on reasonable grounds that the building work complies with the building consent. In order for the building in question to be considered for a code compliance certificate, the original building consent either needs to be amended to reflect the proposed work or the authority provided with as-built documentation to record the building as built.

12.3.9 In this instance the only onsite work that has been completed is some sitework, foul water drainage, and part of the ground floor slab. Given the necessary changes that need to be made to the drawings arising from the correction of the shape of the site, and the non-compliant matters discussed herein, it is appropriate that the authority be provided with revised consent documentation as part of an amendment to the original consent.

12.4 The issuing of the Building Consent

12.4.1 The granting of a building consent is a statutory decision authorising particular building work to be undertaken. In this instance that decision has been relied and acted upon as evidenced by the sitework and the existence of the as-built floor slab.

12.4.2 I consider that the authority did not take account of certain matters when issuing the building consent, and that the authority's decision in granting the consent was flawed in some respects. However, I would require compelling evidence before me along with persuasive reasons before I would reverse that decision.

12.4.3 In the circumstances it would seem appropriate for the authority to issue a notice to fix requiring the provision of revised consent documentation, for approval, taking into account the matters raised in this determination.

13. Matter 8: The failure of the builder to comply with the conditions of a building consent

13.1 The applicant's position is that the section of the ground floor slab that has been completed was laid without the required approval from the authority.

13.2 It appears the authority was not called to complete a pre-pour inspection nor was an inspection of the drains in and under the slab carried out. I note that such inspections are not mandatory, and in their absence the authority may choose to rely on the applicant to confirm that the work was carried out in accordance with the consent documentation. However, the authority must have reasonable ground for doing this.

13.3 The applicant's engineering consultants inspected and tested the platform's backfilling and subsequently approved it and provided a producer statement.

13.4 The authority may consider it has sufficient grounds to accept that the section of the ground floor slab completed to date complies with the consent documentation, and the Building Code with respect Clauses B1, E2, and G13. I leave any matters that may be in doubt to the applicant to resolve to authority's satisfaction in the first instance.

13.5 I note that the consented plans show a datum of 'FFL10.000' but it is unclear what this datum is referenced to. I can therefore draw no conclusions on whether the section of the ground floor slab that has been completed is at the level shown in the consent documentation.

14. Summary of findings with respect to code compliance

Clause B1 Structure

14.1 I have no grounds to conclude that the as-built work, and the proposed building, will not comply with Clause B1.

Clause B2 Durability

14.2 The building as consented takes no account of the effects of likely inundation and therefore does not comply with Clause B2 Durability.

The Fire Safety C Clauses

14.3 The building has been designed to, and complies with, FHC 2. With respect to the very marginal increase in the ratio of the mezzanine floor to the remainder of the building, I consider the proposed building will comply with the relevant fire safety clauses of the Building Code.

14.4 Given the building's intended use, with respect to the workshop facility, I consider further work needs to be done to confirm that the proposed warning system (which is only detailed in the second fire report) will comply with Clause F7 Warning systems.

Clause E1 Surface water

14.5 The building complies with Clauses E1.3.1 and E1.3.3 in that the likelihood of damage or nuisance to other property is avoided. The requirements of Clause E1.3.2

do not apply to the building. I conclude that the proposed building, including the as-built work, complies with Clause E1.

Clause E2 External Moisture

14.6 In my view the consented documents do not comply with Clause E2.3.3 as a section of the ground floor slab has been poured below the adjacent ground level. However, there is no reason why appropriate detailing of the wall / floor junction along the boundary walls will not prevent the ingress of external moisture, so that compliance can be achieved.

14.7 In addition, the consent documents do not comply with Clause E2.3.5 given the effects of likely inundation on the enclosed building elements.

Clauses D1 Access, G1 Personal Hygiene, and G4 Ventilation

14.8 The building work as proposed does not comply with Clauses D1, G1 and G4.

Clause G13 Foul Water

14.9 There is insufficient information in the consent documentation to show how proposed building will comply with Clause G13.

15. Contractual matters

15.1 Certain matters about the features and construction of the building have been referred to me by the applicant. While I have, where relevant, considered some of these matters in the light of the requirements of the Act and the Building Code, the remaining matters appear to be of a contractual nature between the parties. I have not commented on those matters as these do not fall within the ambit of section 177 of the Act.

16. What is to be done now?

16.1 The authority should now issue a notice to fix; requiring the applicant to bring the proposed building into compliance with the Building Code, identifying the non-compliant items identified in paragraph 14, but not specifying how those matters are to be corrected. That is a matter for the owner to propose and for the authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

16.2 I am also of the opinion the same notice to fix should require the applicant to provide amended consent documentation taking account of the correction of the site boundary, and the as-built level of the ground floor slab.

16.3 I suggest the parties adopt the following process to meet the requirements of paragraphs 16.1 and 16.2. Initially the authority should issue the notice to fix. The applicant should respond to this in the form of an application to amend the building consent to be submitted for the authority's approval. Any outstanding items of disagreement arising from this application can be referred to the Chief Executive for a further determination.

17. The decision

17.1 In accordance with section 188 I hereby determine that the proposed building does not comply with Building Code Clauses B2, D1, E2, F7, G1, and G4.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 22 June 2009.

John Gardiner
Manager Determinations