



## Determination 2012/061

### Regarding the compliance of door handles installed in school classrooms at Wairoa College, Lucknow Road, Wairoa



#### 1 The matter to be determined

1.1 This is a determination under Part 3, Subpart 1 of the Building Act 2004<sup>1</sup> (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”)<sup>2</sup>, for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the building owner, the Ministry of Education (“the applicant”), who is represented by an agent
- the architect, G Pidd, (“the architect”) who is the applicant’s agent, and who is a Registered Architect and therefore has the status of a licensed building practitioner under the Building Act<sup>3</sup>
- Wairoa District Council carrying out its duties as a territorial authority or building consent authority (“the authority”).

<sup>1</sup> The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at [www.dbh.govt.nz](http://www.dbh.govt.nz) or by contacting the Ministry on 0800 242 243.

<sup>2</sup> After the application was made, and before the determination was completed, the Department of Building and Housing was transitioned into the Ministry of Business, Innovation and Employment. The term “the Ministry” is used for both.

<sup>3</sup> Registered Architects are under the Registered Architects Act 2005 and are treated as if they were licensed in the building work licensing class Design under the Building (Designation of Building Work Licensing Classes) Order 2010; therefore the architect is considered a party to the determination

- 1.3 This determination arises from a dispute about the authority's decision to refuse to issue a code compliance certificate for a refurbished block of classrooms. The authority was not satisfied that the external door handles installed in the building ("the door handles") comply Clause D1 of the Building Code<sup>4</sup> (First Schedule, Building Regulations 1992). The authority's concerns primarily relate to clause D1.1(a) of the Building Code, that is, to 'safeguard people from injury during movement into, within and out of buildings'.
- 1.4 Therefore, I take the view that the matter to be determined<sup>5</sup> is whether the authority was correct to refuse to issue the code compliance certificate for the refurbished classroom block. In making this decision I must consider whether the door handles comply with Clause D1 Access routes, of the Building Code.
- 1.5 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Ministry to advise on this dispute ("the expert"), and other evidence in this matter.
- 1.6 The relevant clauses of the Building Code are included in Appendix A.

## 2 The building work

- 2.1 The door handles that are subject to consideration are located on seven exterior glazed doors that open outwards. Five single leaf doors open into a covered verandah that is accessed by a ramp and steps. One single leaf door and the double doors open onto steps. The double doors are also located under a covered verandah. The doors and frames are made of powder-coated aluminum using architectural profile 40mm suite. The single doors close against a jamb weather strip in the order of 20mm wide. The double doors have a weather strip at the meeting styles in the order of 10mm wide.
- 2.2 Features of the door furniture and mortice locks are as follows:

### The mortice locks

- Three single leaf doors and the double doors have 23mm backsets; the remaining three single leaf doors have 30mm backsets.

### The lever furniture

- All doors are fitted with a "D" shaped lever handles that are 121mm in overall length with a diameter of 16mm.
- The door handles have a 90mm clearance between the handle returns to accommodate a hand
- The door handle opens to a 60 degree angle down from horizontal: the door will open if the handle is moved 45 degrees down from horizontal.

## 3 The background

- 3.1 The authority issued building consent BY100095 on 11 August 2010. The consent was to upgrade an existing block of classrooms.

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<sup>4</sup> 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.

<sup>5</sup> Under sections 177(1)(b) and 177(2)(d) of the Act

- 3.2 An amendment to this building consent was issued on 8 November 2010. The amendment included the installation of new exterior doors (being the subject of this determination), rather than reuse of existing joinery, and the construction of an associated accessible ramp and verandah to five of the seven doors.
- 3.3 A final inspection was carried out by the authority on 22 July 2011, and in a letter from the authority dated 25 July 2011 a number of items were noted as requiring attention. Included in this list was reference to the design of the door handles. The authority was concerned that ‘the design of the door handles is such that the user is likely to be injured while using them’ and the applicant was required to provide door handles that ‘are safe to use for the purpose.’
- 3.4 Between 24 August 2011 and 18 October 2011 the architect and authority exchanged emails in respect of the authority’s concern regarding the door handles and the decision to refuse to issue a code compliance certificate.
- 3.5 The architect’s view was that:
- the door handles and furniture were specified in the building consent documentation (the building consent specified mortice locks with a 30mm backset)
  - the authority was only entitled to inspect against the consent, and inspections were not an opportunity to reassess the adequacy of the consent
  - the door handles comply with NZS 4121<sup>6</sup> and when used as intended, no harm is likely
  - these particular door handles had been installed in many other buildings.
- 3.6 In response, the authority:
- accepted that the door handles complied with NZS 4121 Clause 7.3.7, but noted that the positioning (right on the leading edge) meant that when the lever was fully pushed down there was a risk of the user’s knuckles being grazed
  - suggested that alternative door handles be provided for them to assess for Building Code compliance.
- 3.7 An alternative door handle was provided to the authority but, because the dimensions were the same as the existing door handles on site, the authority did not consider that this would successfully address the compliance matter.
- 3.8 The Ministry received an application for determination on 27 February 2012.

## 4 The initial submissions

- 4.1 The architect provided:
- a letter supporting their assertion that under normal use the door handles posed no safety risk, and noting that the authority was required to inspect against the consent documentation only and not the Building Code
  - a copy of section 94 of the Act
  - a copy of the authority’s letter dated 25 July 2011.

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<sup>6</sup> NZS4121:2001 Design for Access and Mobility – Building and Associated Facilities

4.2 The authority provided:

- a letter outlining the history to the dispute
- building consent and amendment documentation
- photographs of the door handles in use and photographs showing measurement between door frame and lockset
- correspondence between the architect and the authority.

4.3 The authority asserted that there was very little room to use the door handles in the way described by the architect, in order to avoid injury because of:

- the close proximity of the handle to the jamb weather strip
- the action of the lever handle (there is a 60° movement)
- the length of the D handle (92mm).

## 5 The experts' report

5.1 As mentioned in paragraph 1.5, I engaged an independent expert to assist me. The expert is a Registered Architect and a Fellow of the New Zealand Institute of Architects. The expert reviewed the submissions, including the photos and relevant plans and specifications, and provided a report dated 17 April 2012. A copy of the report was provided to the parties on 18 April 2012.

### 5.2 The initial report

5.2.1 The expert considered the performance of the door handles in relation to the performance requirements of the Building Code. The expert noted that the Act requires that all building work comply with the Building Code.

5.2.2 The expert concluded that the door handles needed to comply with the following:

- Clause D1.2.1 – a building shall be provided with reasonable and adequate access to enable safe and easy movement of people
- Clause D1.3.1(b) - access routes shall enable people to enter buildings
- Clause D1.3.3(b) - access routes shall be free from dangerous obstructions and from projections likely to cause an obstruction, and
- Clause D1.3.4(f) - an accessible route, in addition to the requirement of Clause D1.3.3 shall have doors and related hardware which are easily and safely used.

5.2.3 The expert accepted that the door would open when the door handle was opened to 45°. However, he also noted that the handle would rotate to 60° before stopping. He concluded that it was unreasonable to expect a user to know that the handle need only turn the handle 45° in order to open the door and to prevent the risk of injury. Based on his review of the applicable Building Code clauses and his analysis of use, the expert concluded that opening the door with the existing door handle could likely cause pain and injury if it was used in a way that most people would expect to use it; turning the handle until the mechanism stops the rotation and then pushing the door open.

5.2.4 The expert noted that the photo of the door indicated sufficient room to enable a larger backset to have been installed which would have avoided the risk of injury to

the user. He also noted that a handle with a different configuration or opening angle could prevent the risk of injury.

### **5.3 The architect's response to the expert's report**

5.3.1 The architect responded to the report and in his submission raised the following matters:

- Pain or injury on using the door is not a certainty but rather a possibility, and this does not restrict entry into the building (Clause D1.3.1(b)) as the door is pulled open from the outside.
- The worst that can happen is that the user bangs their knuckles.
- The door frame should not be considered a dangerous obstruction or projection as it defines the access route rather than projecting into it or dangerously obstructing the access route (D1.3.3(b)).
- D1.3.4(f) specifically refers to hardware as an additional requirement in accessible routes and it is therefore not reasonable to assume that this hardware reference also applies to clause D1.3.3(b).
- This type of lockset is common to several suppliers and is a frequently used system. The suppliers should be notified of its non-compliance if it was non-compliant.

5.3.2 The agent agreed that the Building Code is 'light' on specifics with respect to door hardware, and reiterated that the code compliance certificate is issued on compliance with the building consent and not the Building Code.

### **5.4 The expert's supplementary advice**

5.4.1 I requested that the expert review the architect's submission. In a letter to the Ministry dated 28 May 2012, the expert responded to the points raised in the architect's submission.

5.4.2 The expert maintained the view that the existing configuration of the door handle, backset and jamb rebate would 'cause pain and injury' to a user and that, with reference to functional requirements Clause D1.2.1, it could be argued that the handle is not "safe and easy" to use and the access provided is therefore not "reasonable and adequate". The expert concluded, however, that this did not necessarily mean that the door handles did not meet the performance requirements of the Building Code.

5.4.3 The expert concluded that:

- the doors, in question, opened outwards and that it was only when exiting the building that there was a risk of the thumb knuckle hitting the doorframe; as there is no risk of injury posed on entering the building the door handles comply in respect of Clause D1.3.1(b)
- the doorset or any aspect of its configuration does not fall within the definition of "obstruction" or "projection" as it is fundamental to the operation of the door, and therefore Clause D1.3.3(b) does not apply

- the requirements of Clause D1.3.4(f) only apply to accessible routes. It did not appear that the doors that are the subject of this determination are on an accessible route, and therefore Clause D1.3.4(f) does not apply.
- 5.4.4 The expert noted the definition of performance criteria in section 7 of the Act as “qualitative or quantitative criteria that the building is required to satisfy in performing its functional requirements”. This implied that if the performance criteria were satisfied so were the functional requirements.
- 5.4.5 The expert concluded that ‘non-compliance with the Building Code has not been established and therefore the current configuration can remain’.
- 5.4.6 A copy of the expert’s supplementary advice was sent to the parties for comment on 30 May 2012. The authority’s response to both the report and supplementary advice is considered in paragraphs 6.1.2 to 6.1.5.

## **6 The draft determinations and the site inspection**

### **6.1 The first draft determination**

- 6.1.1 The first draft determination was issued to the parties for comment on 1 June 2012. The applicant accepted the draft without further comment in a response dated 7 June 2012. The authority responded to the expert’s report and supplementary advice and the draft determination in a submission dated 13 June 2012.
- 6.1.2 The authority did not accept the draft determination. The submission presented the authority’s view of the performance criteria that buildings must comply with. The authority considered that section 18(1)(b) ‘implies that building work can comply with the Building Code outside the scope of the prescribed performance criteria’ and that the purposes and principles in the Act and the objectives and functional requirements in the Building Code can impose additional obligations that buildings must comply with.
- 6.1.3 The authority referred to section 18(1)(b) that provides that ‘a person who carries out any building work is not required by this Act to ... take any action in respect of that building work if it complies with the building code.’ The authority’s view was that:
- It does not specifically say in the performance criteria “Exit buildings”, but that does not mean that you can have a non-complying exit and a complying entry. The building code objective has already been clear of what is required to comply. The exit must be complying even though not specifically stated exit in the performance criteria. It is clear in the objective D1.1(a) “Safeguard people from injury during movement into, within and out of buildings”. If people may be injured during movement out of buildings then compliance has not been achieved.
- 6.1.4 The authority also submitted that:
- the performance criteria ‘are not exhaustive lists’. It is unlikely that all ways of complying with the objectives of the Building Code are in the functional requirements or performance criteria of the Building Code clauses
  - the door handles as installed may cause pain and injury and therefore do not comply with the principles or the purpose of the Act. As the expert and the parties agreed that the users of the doors may experience pain and injury, the objective has not been satisfied and therefore the determination should not conclude that the doors comply with the Building Code

- two doors are fire egress doors and form part of an accessible route, and therefore clauses D1.3.4(f) and D1.3.3 apply.

6.1.5 The authority agreed that the handles did not cause pain or injury on entering the building, and that a different configuration or repositioning of the handle could prevent the risk of injury on exiting the building.

6.1.6 The first draft determination was amended to acknowledge the response from the parties. Additional information was sought in relation to the doors but no response was received.

## **6.2 The site inspection**

6.2.1 An officer from the Ministry visited the site on 21 August 2012.

6.2.2 The officer noted that the six single leaf doors are identical (apart from handing), three of the mortice locks to the single leaf doors have a 23mm backset, and the remaining three have a 30mm backset (30mm had been specified). The double doors are similar in configuration and hardware to the single leaf door, and fitted with a mortice lock with a 23mm backset.

6.2.3 The clearance between the furniture escutcheon plate and the aluminum door jamb was approximately 0mm to 1mm for single leaf doors with the 23mm backset, and approximately 7mm to 8mm for doors with the 30mm backset: the clearance to the double doors was approximately 5mm.

6.2.4 In the opinion of the officer, there was sufficient clearance between the handle and the door jamb to easily operate the handle and open the doors that had a 30mm backset, but insufficient clearance for the single leaf doors with a 23mm backset. The clearance to the double doors was not assessed, however, a door with the same hardware, and similar joinery and clearance, was considered at another location; the 5mm clearance was considered to be sufficient to easily operate the handle.

## **6.3 The second draft determination**

6.3.1 The determination was amended to take into account the findings of the site visit, and a second draft determination was issued to the parties for comment on 30 August 2012.

6.3.2 The architect responded on 31 August 2012 accepting the second draft. The authority responded on 20 September 2012, stating that it would make no submission to the second draft.

# **7 Discussion**

## **7.1 Compliance with the functional requirements**

7.1.1 The Act provides that the purpose of the Building Code is to set out the 'functional requirements for buildings and the performance criteria with which buildings must comply in their intended use' (section 16). The "performance criteria" are defined in section 7 as the 'qualitative or quantitative criteria that the building is required to satisfy in performing its functional requirements'. The "functional requirements" are defined in section 7 as 'those functions that the building is required to perform for the purposes of this Act'.

- 7.1.2 In my opinion the functional requirements of the Building Code do not impose additional obligations over and above the performance criteria. It is the performance criteria that a building must comply with. As section 18(1)(a) provides: ‘a person who carries out any building work is not required by this Act to achieve performance criteria that are additional to ... the performance criteria prescribed in the building code in relation to that building work’. If the performance criteria are satisfied then the functional requirements will be satisfied too. This is not to say that the functional requirements add nothing to the performance criteria. That would make the functional requirements redundant. The performance criteria, functional requirements and objectives of the code, and the principles and purposes of the Act are all linked, and must be interpreted and applied consistently with each other.
- 7.1.3 The functional requirements can influence the interpretation of the performance criteria and hence affect the nature and scope of the performance criteria. Sometimes performance criteria are meaningless on their own and can only be understood when read in conjunction with the functional requirement.
- 7.1.4 For example, the performance criteria in Clause G2.3.3 states ‘space and facilities shall be provided within each accommodation unit or may be grouped elsewhere in a convenient location.’ The performance criteria do not disclose what type of space and facilities must be provided and the functional requirement must be looked to for the answer, which it does, as Clause G2.2 states ‘buildings shall be provided with adequate space and facilities for laundering.’
- 7.1.5 The relationship between the performance criteria and the functional requirement is clearly demonstrated in respect of Clause F4 where the functional requirement in Clause F4.2 says that ‘buildings shall be constructed to reduce the likelihood of an accidental fall’. Clause F4.3.1 sets the performance criteria for the distance through which someone can fall before a barrier is required at 1 metre. If a fall height of 1 metre and over is protected by a barrier then the functional requirement is met. If the fall height is less than 1 metre then a barrier is not required and both the performance criteria and functional requirement will still be satisfied, notwithstanding the fact that a person could still fall from a height of less than 1 metre and injure themselves.
- 7.1.6 In this instance, if it can be shown that the relevant performance criteria are met (Clauses D1.3.1(b), D1.3.3(b), and D1.3.4(f)) then in my view the work complies with the Building Code. The functional requirement in Clause D1.2.1 imposes no additional compliance obligations.

## **7.2 The compliance of the door handles**

- 7.2.1 I accept the expert’s opinion the door handles may not be safe and easy to use. However, I note that the potential level and significance of pain or injury caused is likely to be minor in nature, and I do not consider it to match the severity of injury contemplated in the Act and the Building Code.
- 7.2.2 I accept the observations of the Ministry’s officer made during the site visit, and I also accept the expert’s analysis with respect to the performance requirements of the Building Code: my view of the matter is therefore as follows:



**Clause D1.3.1(b)**

- 7.2.3 The doors open outwards; the current configuration poses a risk of pain and/or injury to users on exiting the building only. As there is no risk of injury posed on entering the building the door handles comply in respect of Clause D1.3.1(b)

**Clause D1.3.3(b)**

- 7.2.4 In my view the configuration of the door handle does not fall within the definition of “obstruction” or “projection” as these terms are used in the Building Code, or as described in the Acceptable Solution, D1/AS1. The provision of a door handle is fundamental to the safe operation of the door in terms of providing safe egress.

**Clause D1.3.4(f)**

- 7.2.5 From the information provided, I consider that single leaf doors opening on to the covered verandah are on an accessible route and are therefore required to comply with Clause D1.3.4(f). In my opinion the single leaf doors fitted with mortise locks with a 23mm backset are not able to be “easily used” and therefore do not comply with Clause D1.3.4(f). I also note the mortise locks with the 23mm backset are at variance with the work specified in the approved building consent.

**7.3 Conclusion**

- 7.3.1 Buildings shall be provided with reasonable and adequate access to enable safe and easy movement of people. For the reasons set out above, I conclude that the door handles satisfy Clause D1.3.1(b), and that Clause D1.3.3(b) does not apply. However, I do not consider that the single leaf doors fitted with the 23mm backset mortise locks can be easily used, and therefore they do not satisfy Clause D1.3.4(f).

**8 The decision**

- 8.1 In accordance with section 188 of the Act, I hereby determine that the exterior handles to the doors as noted herein do not comply with the Clause D1, and accordingly I confirm the authority’s decision to refuse to issue the code compliance certificate.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 24 September 2012.

John Gardiner  
**Manager Determinations**

## Appendix A

A1 The relevant provisions of Building Code Clause D1 Access Routes include:

### Clause D1—Access routes

#### Provisions

#### Objective

##### D1.1 The objective of this provision is:

- (a) safeguard people from injury during movement into, within and out of *buildings*,
- (b) safeguard people from injury resulting from the movement of vehicles into, within and out of *buildings*, and
- (c) ensure that *people with disabilities* are able to enter and carry out normal activities and functions within *buildings* [to which section 47A of the Act applies].

#### Functional requirement

**D1.2.1** *Buildings* shall be provided with reasonable and adequate access to enable safe and easy movement of people

Requirement D1.2.1 shall not apply to *ancillary buildings* or *outbuildings*.

#### Performance

**D1.3.1** *Access routes* shall enable people to:

- (a) safely and easily approach the main entrance of *buildings* from the apron or *construction edge* of a *building*,
- (b) enter buildings,

**D1.3.3** *Access routes* shall:

- (b) be free from dangerous obstructions and from any projections likely to cause an obstruction,

**D1.3.4** An *accessible route*, in addition to the requirement of Clause D1.3.3, shall

- (f) have doors and related hardware which are easily used