



## Determination 2019/018

# Regarding the code-compliance of a proposed design for a domestic driveway at 18 Orion Drive, Welcome Bay, Tauranga

### Summary

This determination considers the compliance of a proposed design for a domestic driveway with Building Code Clause D1 Access routes, in particular in relation to the cross fall and gradient. The determination discusses the extent to which the performance criteria in Clause D1 apply to driveways constructed in association with a dwelling and where the driveway is used by both pedestrians and vehicles.

### 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, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.
- 1.2 The parties to the determination are:
  - Tauranga City Council carrying out its duties and functions as a territorial authority or a building consent authority (“the authority”), which is acting through its lawyers as its agent (“the authority’s lawyers”); the authority is the applicant in the current determination
  - the owner of the property that the proposed building work relates to, S Maher (“the owner”), acting through his lawyers as his agent (“the owner’s lawyers”).
- 1.3 I am of the view that the group home builder and the licensed building practitioner, who is an employee of the group home builder and who was issued with the notice to fix, (referred to in this determination jointly as “the builder”), are persons with an interest in the matter. The builder is acting through a lawyer.
- 1.4 This determination arises from a dispute between the parties as to whether a proposed design for a driveway on the owner’s property (“the proposed design”) complies with Clause D1 Access routes of the Building Code<sup>2</sup>. The proposed design has been developed by the builder in response to a notice to fix issued by the authority that included non-compliance of the driveway as constructed. The builder and authority consider that the proposed design complies with Clause D1 Access routes; the owner takes the view that it does not.

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

<sup>2</sup> In this determination references to sections are to sections of the Building Act, and references to clauses are to clauses of the Building Code (First Schedule, Building Regulations 1992)

1.5 Accordingly, the matter to be determined<sup>3</sup> is whether the proposed design for the driveway complies with Clause D1.3.5(b) of the Building Code, in particular with regard to the cross fall. In making this determination I have considered the extent to which the performance criteria in Clause D1 apply to driveways constructed in association with a dwelling.

1.6 In making my decision, I have considered the application, the submissions of the parties, and the other evidence in this matter.

## 1.7 Matters outside this determination

1.7.1 Submissions on behalf of the owner have raised issues of a contractual nature. I have no jurisdiction in respect of contractual matters and these are out of the scope of the determination. The owner has also raised other concerns with the as-built work and proposed driveway relating to structural stability, and has put forward the view that the building may be dangerous. These matters are outside the particular matters that were applied for by the authority, but I have drawn the authority's attention to the owner's concerns for the authority to consider. I note the authority has investigated the owner's concerns and advised it is satisfied that the building is not dangerous as that term is defined in section 121 of the Act.

1.7.2 Submissions from the parties have referred to various drawings of the proposed driveway. For clarity, the determination considers the compliance of the driveway as detailed in the drawings provided in the application for this determination<sup>4</sup>; I have not considered the compliance of the driveway as constructed, or as detailed in subsequent revisions.

1.7.3 I have not considered any other aspects of the Act or Building Code beyond those required to decide on the matter to be determined as described in paragraph 1.5.

## 2. The building work and background

2.1 The owner's property is situated in a residential area in Welcome Bay in Tauranga. The property is located on a hill, with a flat building platform created on the topmost (northern) part of the section. The builder has already constructed a new single-level dwelling on this platform, and I understand this is complete. In front of the house, the property slopes steeply down to the footpath and Orion Drive in the south. The southern wing of the house contains a double garage, with a driveway that leads from the garage and front of the house, down to the road below.

2.2 The builder originally applied for a building consent for both the house and the driveway, and this was issued by the authority (Building Consent No. 55602).

2.3 The current dispute arose while the building work for the house and driveway was underway. During an inspection on 19 December 2016, the authority identified that building work carried out did not comply with the approved plans and additional building work had also been carried out without approval. On 16 February 2017 the authority issued a notice to fix, which identified the changes to the building location within the site and higher floor levels had resulted in the gradient of the driveway being steeper than shown in the plans.

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<sup>3</sup> Under section 177(1)(a) of the Act.

<sup>4</sup> Drawing No. 631645-M-E-D002 (sheets 01 to 08) provided with the application for this determination. Sheet no.01 Issue A, Sheet no.02 Issue B, Sheet no.03 Issue B, Sheet no.04 Issue B, Sheet no.05 Issue B, Sheet no.06 Issue B, Sheet no.07 Issue B, Sheet no.07A Issue A, Sheet no.08 Issue A.

- 2.4 On 23 August 2017, the authority, owner and builder held a site meeting to discuss this issue. The parties agreed at the meeting that the authority would issue a notice to fix requiring the builder to apply for an amendment to the building consent that included a revised design for the driveway and retaining wall.
- 2.5 The authority issued the notice to fix on 12 September 2017. The notice to fix cited six items of contravention or non-compliance. One of these items related to the driveway, with the remaining five relating to the retaining wall. The matters concerning the retaining wall are not considered further in this determination. The item relating to the driveway read as follows:

**Particulars of Contravention or Non-Compliance**

**Driveway**

8. The driveway gradient is steeper than provided for in the consented plans. The council considers it is non-compliant with Clause D1 of the New Zealand Building Code and therefore contravenes s17 of the Act.

**Retaining wall**

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**To remedy the Contravention or Non-Compliance you must**

**Step 1: Apply for an amendment to building consent 55602 by 13 October 2017**

14. The amendment application, approved by the owner, must be accompanied by plans and specifications to satisfy the council on reasonable grounds that the provisions of the Building Code would be met if the building work was properly completed in accordance with those plans and specifications.

15. For the avoidance of doubt, if the council requires further information after 13 October 2017; or if the council is unable to grant the building consent pursuant to s49 of the Act, the specified person will be deemed not to have complied with this notice to fix.

16. The amendment application must contain the information below.

**Driveway**

To address Clause D1 of the Building Code (driveway)

17. An independent survey from a licensed cadastral surveyor to verify the floor level and the location of the dwelling in relation to the boundaries of the property.

18. Plans, long sections, and cross-sections shall be provided showing a compliant solution with vertical gradients less than 25% and safe cross fall. A B85 (NZS2890.1<sup>5</sup>) car must be able to enter and exit both parks without grounding at any point between the roads and the parks and it must be shown that there is no requirement to reverse up or down the driveway. The building and boundaries shall be shown on all cross sections.

19. A report from a CPEng Traffic Safety Expert who has undertaken a specific assessment of the proposed driveway safety and performance with respect to Clause D1 of the Building Code, and any relevant standards. The report shall address but not be limited to cross falls, gradients, transitions and manoeuvring. The council reserves the right to obtain a peer review at the [building consent] applicant's cost.

20. Set out co-ordinates (x, y, z) for construction of the driveway, on edges and critical locations such as transitions.

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38. The application for a code compliance certificate must include the documents outlined below.

<sup>5</sup> Australian/New Zealand Standard Parking facilities Part 1: Off-street car parking AS/NZS 2890.1.2004

### Driveway

39. A licensed cadastral survey for the completed driveway shall be undertaken as an as-built survey.

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- 2.6 The builder sought two extensions of time to comply with the notice, and these were granted by the authority. However, the builder never formally submitted an application for an amendment to the building consent. The authority advises that this was because the owner would not approve the proposed design for the driveway, as the owner was not satisfied that it complied with the Building Code.
- 2.7 The authority has also advised that in October 2017 the builder informally sought the authority's agreement to the proposed design. The authority states that this was done so that the builder could then enter into contractual negotiations with the owner.
- 2.8 In two letters dated 24 and 26 October 2017, the authority's lawyer sought further information from the builder about the proposed design. I have not seen a copy of this correspondence; however, I understand that the letters sought responses to specific items and that the numbering of these items correlates with the numbered items in the notice to fix.
- 2.9 The builder commissioned two reports in response to the authority's lawyer's letters. This started a process whereby the parties all commissioned reports from their various experts to provide advice on the disputed matters and to respond to the matters in the other parties' reports. These reports are outlined in paragraphs 2.10, 2.11 and 2.12. For clarity, I have grouped the reports according to the party that commissioned them, rather than presenting them chronologically.

### 2.10 The builder's experts' reports

- 2.10.1 In response to item 17 in the notice to fix, the builder commissioned a response from the firm of civil and structural engineers and surveyors that had provided the original plans for the driveway ("the builder's surveyors"). In a letter dated 27 October 2017, the builder's surveyors confirmed that they had previously completed 'a separate and independent topographical survey of the site' on 22 June 2017, and that this had been added to with additional survey data on 30 August 2017. Enclosed with the letter was a new copy of the topographical survey plans dated October 2017.
- 2.10.2 In response to items 18 and 19 in the notice to fix, the builder commissioned a report from a transport engineer ("the builder's engineer") and this was provided on 27 October 2017. The report assessed the new plans provided by the builder's surveyors against the requirements in Clause D1 of the Building Code, and against Acceptable Solution D1/AS1<sup>6</sup>. The report expressed the following opinions.
- The requirements in Clause D1 of the Building Code for an access route only apply to the route from the apron or edge of the building, into and within the building. They do not apply to the driveway between the street and the building's edge. This is not an access route.
  - There is no requirement in the Act or Building Code to provide an accessible route for people with disabilities to a residential dwelling.

<sup>6</sup> Acceptable Solution for New Zealand Building Code Clause D1 Access Routes. Acceptable Solutions are prescriptive design solutions approved by the Ministry that provide one way, but not the only way, of complying with the Building Code.

- The provisions in paragraph 1.2 of Acceptable Solution D1/AS1 also only apply to the access route from the building edge, into and within the building, and not to the driveway between the street and the building.
- The other ‘design standards’ that apply to vehicular access driveways and car parking areas are AS/NZS 2890.1 2004<sup>7</sup>, the Tauranga City Plan and the Tauranga City Infrastructure Development Code. When the proposed design is assessed against these other design standards, there are only ‘minor non-compliances to the proposed longitudinal grade and cross fall’. These areas of non-compliance occur in the area between the property building and the road carriageway, and are ‘constrained by the longitudinal grade of Orion Drive’. The section with cross fall greater than 12.5% is limited to approximately 6m in length, and is ‘not expected to affect the viable use of the driveway’. The proposed grades and cross falls provide ‘a workable solution’.
- The requirements in AS/NZS 2890.1 are specific to domestic driveways, and as such driveways ‘are typically used by pedestrians, it is understood that the recommendations of this standard will also provide suitable access for able bodied pedestrians’. The builder’s engineer was not aware of any ‘specific design guidelines for access to residential dwellings’.
- In conclusion, the proposed design ‘will comply with clause D1 of the Building Code and relevant standards and provide satisfactory access to the dwelling’; and the ‘minor non-compliances’ with AS/NZS 2890.1 ‘will not affect the viable use of the driveway’.

## 2.11 The authority’s expert’s reports

- 2.11.1 The authority in turn sought the advice of an independent traffic engineer (“the authority’s engineer”), as to whether the builder’s proposed design complied with the Building Code.
- 2.11.2 The authority’s engineer provided a report in a letter dated 22 November 2017, in which he set out his opinion that the builder’s proposed design complied with the Building Code. The main points made by the authority’s engineer in the report can be summarised as follows.
- Paragraph 10.1 of the Acceptable Solution D1/AS1 identifies AS/NZS 2890.1 as an Acceptable Solution for carparking areas and circulation routes, which includes driveways. Part 2.6 of the standard covers domestic driveways and ‘specifies a maximum acceptable longitudinal gradient of 1 in 4 (25%) for domestic driveways’.
  - The builder’s surveyor’s plans show that the steepest longitudinal gradient along the driveway will be 1 in 4.5 (22%), which therefore complies with the Acceptable Solution for Clause D.1.
  - The driveway also complies with the provisions in Clause D1 relating to safety and visibility – Clauses D1.1(b), D1.3.3(c) and Clause D1.3.5(d). The driveway slopes downhill to the road providing adequate sight lines between vehicles and pedestrians, and its design will enable vehicles to manoeuvre on-site so they can exit to the road in a forward direction.

<sup>7</sup> Australian and New Zealand Standard AS/NZS 2890.1 Parking facilities – Off street parking

- The design will increase the cross fall of the footpath to 7.7%, which although not ideal, is not unsafe.
- The builder's surveyor's plans show that the driveway's cross falls will vary between 1 in 59 or 1.70% (minimum) and 1 in 6.4 or 15.6% (maximum).
- The driveway from the relatively flat manoeuvring platform in front of the garage to the front boundary of the owner's property has a maximum gradient of 1 in 8, or 12.5%. The area between the front of the owner's property and the road will have a maximum gradient of 1 in 6.4 or 15.6%.
- Neither Clause D1 of the Building Code nor AS/NZS 2890.1 specify maximum permissible cross falls for driveways, they just have to be safe.
- Cross falls exceeding 1 in 8 (12.5%) should not generally be accepted, as they are not safe: there is a risk of driver/passenger discomfort, slipping when the surface is wet or covered in frost, moss or lichen, or overturning of vehicles with a high centre of gravity. Cross fall of 1 in 8 represents the 'upper limit' of what should be accepted, and is generally restricted to vehicle parking and manoeuvring areas in front of garages.
- As the maximum cross falls on the part of the proposed driveway from the house to the front property boundary have a gradient of 1 in 8 or less, although not ideal, they comply with the Building Code.
- The area where the gradient of the driveway does exceed 1 in 8 is where the driveway crosses the footpath, between the front property boundary and the road. However, this is a necessity to match the gradient of the footpath and the road.

2.11.3 The authority's engineer provided a second report in a letter dated 20 December 2017. The report responded to the owner's engineer's report of 11 December 2017 (see paragraph 2.12.1); and confirmed the authority's engineer's 'previous conclusions that the proposed longitudinal gradient and cross falls on the driveway are safe for pedestrians and vehicles' and the proposed design complies with Clause D1 of the Building Code. The other main points made in the report were that:

- while 'a lesser cross fall' would be desirable that was 'to achieve a better engineered design' rather than being 'an issue of vehicle or pedestrian safety'
- engineering software shows that a third vehicle could turn and exit in a forward direction from in front of the garage, but in any event this is not a Building Code compliance matter: 'There are no legal or planning requirements that require more than two parking spaces at a domestic property, or that sufficient turning shall be provided to enable a third vehicle to exit in a forward direction'
- there is no 'maximum permissible gradient' for the longitudinal gradient of a pedestrian access route specified in the Building Code, and AS/NZS 2890 specifies a maximum of 1 in 4 for domestic driveways: 'Since there is an expectation that pedestrians and vehicles share domestic driveways for access, it follows that a longitudinal gradient up to 1 in 4 is acceptable for pedestrian use in such situations'
- the owner's engineer refers to a maximum 2% cross fall across any access route, but the Acceptable Solution does not specify a maximum cross fall for domestic driveways: 'In my opinion, typical domestic driveways with

reasonably skid resistant concrete surfaces such as this one are not necessarily unsafe if the cross fall exceeds 2%. I have previously advised that cross fall should not exceed 1 in 8 if safety is to be ensured. The cross fall in this driveway design does not exceed 1 in 8.'

## 2.12 The owner's expert's reports

2.12.1 The owner sought his own expert advice from a company of traffic engineers ("the owner's engineer"). The owner's engineer provided a report in a letter dated 11 December 2017, in which it assessed the builder's surveyor's updated October 2017 plans for the driveway (see paragraph 2.10.1) against the requirements in Clause D1 of the Building Code and AS/NZS 2890.1. (I note that in several places in the submission the author has mistakenly referred to paragraphs in the Acceptable Solution as clauses in the Building Code. I have adjusted the following summary to correctly reflect what the author intended.) The main points made by the owner's engineer in its report can be summarised as follows:

- According to section 2.6 of AS/NZS 2890.1 the maximum gradient of domestic driveways should be 1 in 4 (25%). Section 2.5.3 (b) and (c) states that 'private or residential car parks curved ramps (driveways) shall be measured along the inside edge'. The owner's engineer has calculated its own measurements for the driveway gradient, based on this specification and the proposed design, and this shows that the maximum gradient for the driveway is 1 in 4.6 or 21.8%. This is within the maximum prescribed by AS/NZS 2809.1 and hence the Building Code.
- The driveway also complies with the Building Code in terms of its dimensions, cross fall, slope, 'queueing and circulation space in front of the parking area', and sight distances for pedestrians and cars.
- The provision for 'vehicle manoeuvring in and out of the parking area is not ideal for daily use and an alternative should be explored'. The original consented design 'showed an improved circulation area and did not require multiple vehicle movements to enter and exit the parking area'. There is also no provision for additional off-street parking, and additional vehicles will have to reverse down the driveway, which is not safe.
- Determination 2015/060<sup>8</sup> considered the definition of an access route in Clause D1 and considered that the driveway in that case was a shared vehicle and pedestrian access route. The same situation exists here, with the driveway from the site boundary to the garage 'functioning as a shared access route for vehicles and pedestrians'.
- The driveway does not comply with the maximum slope, gradient and cross fall measurements set out in D1/AS1 and 'is not considered safe. An alternative pedestrian access should be considered.' In particular:
  - paragraph 3.1.1 of D1/AS1 states that the maximum slopes for pedestrian access routes that are subject to wetting is 1:10, and this has not been achieved. There is a risk of pedestrians and vehicles slipping on the driveway if wet
  - paragraph 1.2.2 of D1/AS1 states that 'The surface of any access route (including an accessible route) shall not have cross fall steeper than

<sup>8</sup> Determination 2015/060: Regarding the compliance of concrete exterior stairs (28 September 2015)

1:50'. The maximum cross fall for the proposed driveway is higher than this at 12.45%.

2.12.2 The owner's engineer provided a further report in a letter dated 22 December 2017, responding to the authority's engineer's report of 20 December 2017 (see paragraph 2.11.3), recommending that an alternative 'safe and appropriate vehicular and pedestrian access' be provided. The report stated that:

- AS/NZS 2890.1 is cited in D1/AS1 as a standard for vehicle access only
- the authority's engineer had incorrectly cited it as applying to pedestrian access routes
- the authority's engineer had also incorrectly stated that there was no maximum permissible slope specified for a pedestrian ramp, however this is set out in section 3.1.1 of D1/AS1.

2.12.3 The report concluded that:

- the proposed design complies with 'the maximum slope and gradient measurements as set out in AS/NZS 2890 and the NZ Building Code for vehicles'
- the proposed design also complies with the safety, visibility and circulation requirements in the Building Code for vehicles; however, it is 'not ideal for daily use' and lesser cross falls should be strived for
- 'The driveway as a pedestrian access route does not comply with the maximum slope, gradient and cross fall measurements as set out in [the] Building Code and is not considered safe. An alternative pedestrian access should be considered.'

2.12.4 In addition, the owner's lawyers wrote a letter to the authority's lawyers, attaching the owner's engineer's second report, and reiterating the points it contained. The letter also raised matters relating to the issue of the notice to fix, which are not relevant to this determination.

2.13 The authority applied for a determination on the issue, and this was received by the Ministry on 5 February 2018.

2.14 On 10 August 2018, the owner requested two additional matters be included in the determination. On 14 August 2018 I advised the owner that the application for determination could be amended with the applicant's agreement (who in this case is the authority), or alternatively, the owner had the option of applying for a new determination on those matters. On 20 August 2018 the owner's lawyer advised the owner would wait until the determination was issued to consider his position. The owner made further submissions regarding extending the scope of the determination in submissions on 15 January 2019, to which the authority responded on the same day that it would consider issues raised by the owner if and when an application for an amendment to the building consent (supported by the owner) was made.



### **3. The parties' submissions**

#### **3.1 Submissions about the status of the builder**

3.1.1 A number of submissions were received from the parties about the status of the builder under section 176 of the Act.

3.1.2 As the matter for determination concerns the compliance of the design of the proposed driveway, which is not restricted building work, the builder does not satisfy the test for a party under section 176(d). In addition, because the matter does not concern the issuing of the notice to fix, the builder is not a party under section 176(da). However, it is acknowledged that the builder has an interest in the matter being considered, and accordingly I have included the builder in the determination process as a person with an interest.

#### **3.2 Submissions about the compliance of the driveway**

3.2.1 Over the course of the determination I received a number of submissions and documents from the parties about the matter to be determined, namely the driveway's compliance with Clause D1 of the Building Code in relation to the cross fall and gradient. The information provided and submissions received are recorded in Appendix B as follows:

- B.1 – The initial application and initial submissions.
- B.2 – The first draft determination and submissions in response.
- B.3 – The second draft determination and submissions in response.
- B.4 – The third draft determination and submissions in response.

3.2.2 In essence, the authority's submissions supported the following views:

- The driveway is a shared pedestrian and vehicle access route, as discussed in Determination 2015/060, and the construction edge is the end of the driveway adjacent to the footpath.
- The Building Code requires safe pedestrian access to be provided from the street to the dwelling. People accessing the dwelling in the current case will have to use the driveway for this purpose.
- Domestic driveways come within the definition of access routes and the requirements in Clause D1 relating to access routes apply to them. To exclude driveways from these requirements is at odds with the intent of the Building Act and Building Code, which is to ensure the safety of people using buildings.
- The proposed driveway design is safe and complies with Clause D1.

3.2.3 In essence, the owner's submissions supported the following views:

- The proposed driveway design does not comply with Clause D1 as a shared vehicle and pedestrian access route, as the combination of the cross fall, curvature and gradient render it unsafe.
- The driveway is a building for the purposes of the Act and Building Code. The construction edge or apron of the building is the end of the driveway near the road.

- The proposed driveway is the only way to access the dwelling from the road and must be safe. Excluding the driveway from the definition of an access route would mean that people may be unable to safely exit the property.
- In the construction industry, the construction edge is commonly understood to extend to the property boundary. The narrow view of the term ‘construction edge’ taken in the first draft determinations is at odds with this and with Ministry guidance.
- The driveway is an access route as defined in the Building Code, and comes within the apron and construction edge of the dwelling. It is also an access route as a building in its own right, as people enter it and walk on it.
- The terms ‘circulation route’ and ‘access route’ are not mutually exclusive, and Clause D1.3.1(d) uses the term access route to refer to areas where people drive cars.

3.2.4 In essence, the builder’s submission supported the view that the driveway was neither a building nor a structure, and that only a small part of the driveway, adjacent to the house, was an access route in terms of the Building Code.

## 4. Discussion

4.1 The authority has requested a determination about whether the proposed design for the driveway complies with Clause D1 of the Building Code with regard to use of the driveway by both vehicles and pedestrians. The legislation, Acceptable Solution and standards that I have looked at in considering this question are set out in Appendix A.

4.2 The authority, the owner and the builder each made submissions through their respective lawyers on the question of the extent to which the proposed design for the driveway must comply with the requirements of the Building Code, and in particular in relation to pedestrian use. The question is not straight forward and therefore I have discussed below:

- the relevant provisions of the Act concerning whether or the not the driveway is a building (paragraph 4.3);
- Clause D1 of the Building Code (paragraph 4.4) and the performance criteria that are relevant in this instance given the driveway is used by both vehicles and pedestrians (paragraph 4.5);
- how compliance with the Building Code can be established (paragraph 4.6);
- the compliance of the proposed driveway (paragraph 4.7).

### 4.3 Is the driveway a “building” under section 8 of the Act?

4.3.1 First, I have considered the question of whether the driveway is itself a building. Section 8 of the Act states that “building”:

- (a) means a temporary or permanent movable or immovable structure (including a structure intended for occupation by people, animals, machinery, or chattels);

- 4.3.2 The question of whether a driveway is a building has been raised in a previous determination (2016/002<sup>9</sup>) which concerned a shared driveway for which a dangerous building notice had been issued. The determination considered whether the shared driveway in that case was a “structure” as that term is used in section 8, and stated:
- 4.2.4 “Structure” is not defined in the Act and must be taken to have its usual or ordinary meaning: ‘A building or other object constructed from several parts’<sup>10</sup>, ‘Something constructed or having organization – a building, an edifice’<sup>11</sup>, and further ‘Any framework or fabric of assembled material parts; a (typically large) man-made construction’<sup>12</sup>.
- 4.2.5 For something to be a “structure” for the purposes of the Act, it must have some elements or constituent parts and/or be of some complexity. This is consistent with the content of sections 8 and 9 of the Act. The items included in the definition of “building” in section 8 or expressly excluded from the definition of “building” in section 9 are all objects composed of different parts and/or of some complexity.
- 4.3.3 The driveway in that case comprised unreinforced in situ concrete. The determination concluded the driveway was not a “building” under the general definition of that term in section 8 of the Act because it did not have any parts that would make it a “structure” as that term is used in the definition of a “building” in section 8 of the Act. The determination noted that some driveways will be structures because they include parts such as foundations, bridges or retaining walls.
- 4.3.4 The proposed driveway considered in this case has a number of features that differ from the driveway considered in the previous determination and is considerably more complex. It is supported by block retaining walls, is reinforced and has been the subject of detailed design specifications, and it has embedded surface drains and a kerb on the outer edge.
- 4.3.5 In my view, this driveway contains sufficient elements or parts and is of sufficient complexity to be a “structure” and hence a “building” under section 8 of the Act. In reaching the conclusion that the driveway in this case is a building, I note that not all driveways will be structures – for example simple tracks in the earth, or graded earth with an additional surface material such as metal or asphalt do not have elements or constituent parts or complexity sufficient to fall under that definition. Accordingly, the question of whether a driveway is a structure and therefore a building under the Act must be considered on a case-by-case basis in light of the facts of that case; the fact that a particular driveway is a building in one case does not necessarily mean that another driveway will fall within the definition of “building” under section 8 of the Act.
- 4.3.6 Some of the submissions raised concerns regarding the application of other clauses of the Building Code, such as Clauses B1 (Structure) and E1 (Surface water), if a driveway is not a building. I note the provisions under Clause B1 and E1.3.1 apply to sitework, which is defined in Clause A2 as “work on a building site, including earthworks, preparatory to or associated with the construction, alteration, demolition, or removal of a building”. Sitework is building work, and would include work on a range of types of driveways that may not be a “building” or “structure” but would still be required to comply with the sitework obligations in Clauses B1 and E1.3.1 of the Building Code.

<sup>9</sup> Determination 2016/002: Regarding the issue of a dangerous building notice in respect of a damaged shared driveway (20 January 2016)

<sup>10</sup> “Structure”, n: *Oxford Dictionary*. Web 25 Oct. 2015

<sup>11</sup> “Structure”, n: *Oxford English Dictionary*. Web. 25 Oct. 2015.

<sup>12</sup> “Structure”, n: *Oxford English Dictionary*. Web. 25 Oct. 2015.

- 4.3.7 I also note that Clause F4 (Safety from falling) concerns the provision of barriers to protect people from a potential fall of one metre or more from “an opening in the external envelope or floor of a building or from sudden change of level within or associated with a building.” Accordingly, if there is a change in level with a potential fall of 1 meter or more from a driveway and that driveway is a building or is “associated with a building” a barrier would be required.
- 4.3.8 Whether the driveway in this case is a “building” or “sitework”, the provisions of Clauses B1, E1.3.1 will apply under either definition, and Clause F4 applies in respect of the potential fall of one meter or more from the driveway. However, the issue that is the subject of this determination that is in dispute between the parties concerns the extent to which the driveway is required to comply with the requirements of Clause D1.

#### **4.4 The Building Code**

- 4.4.1 Clause D1 of the Building Code concerns access routes and as with all clauses in the Building Code, objectives, functional requirements and performance criteria are provided.
- 4.4.2 The objective of Clause D1 is to:
- (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.
- 4.4.3 These objectives fall into two broad categories: one concerns access by people into, within and out of buildings (Clauses D1.1(a) and D1.1(c)), and the other concerns the need to safeguard people from injury where there is a potential for conflict between people and vehicles that are moving into, within and out of buildings (Clause D1.1(b)). Paragraph (c) concerns persons with disabilities, and is not relevant in this case due to the limits on application.
- 4.4.4 The objectives are expressed quite narrowly and involve a relatively confined activity of moving into, within and out of buildings<sup>13</sup>. I note here that not all structures that fall within the definition of a building under section 8 are structures that people move “into, within and out of”, and I consider this relevant in the application of the performance criteria to various structures.
- 4.4.5 The functional requirements are those functions that a building is required to perform for the purposes of the Act (see section 7 of the Act), and it is the performance criteria of the Building Code that buildings must comply with in their intended use (section 16). The functional clauses provide context for the performance criteria and are useful for interpreting the performance criteria if the application of the performance criteria are unclear.
- 4.4.6 The functional requirements for Clause D1 are:
- D1.2.1 Buildings shall be provided with reasonable and adequate access to enable safe and easy movement of people
  - D1.2.2 Where a building is provided with loading or parking spaces, they shall be constructed to permit safe and easy unloading and movement of vehicles, and to avoid conflict between vehicles and pedestrians.

<sup>13</sup> The definition of “building” is expanded under section 117 of the Act for the purpose of sections 118 to 120 and includes “parts of a building (including driveways, access ways, passages within and between complexes and developments, and associated landscaping (if any))”

4.4.7 The functional clauses must be read consistently with the objectives and the performance criteria. For example, when read in the context of the objectives, the functional requirement Clause D1.2.1 concerns reasonable and adequate access “into, within and out” of buildings.

#### **4.5 The relevant performance criteria in this case**

- 4.5.1 The objectives of Clause D1.1(a) and (c) are carried through to the performance clauses using the terms “access route” and “accessible route”. Clause D1.3.1 (a) to (c) concern the provision of an access route to enable people to approach, enter, and move within the building. Clause D1.3.1(d) concerns the manoeuvring and parking of cars and D1.3.1(e) concerns loading spaces: both of which relate to the safety of loading, parking and manoeuvring spaces associated with moving “vehicles into, within and out of buildings”, not with enabling the vehicle to safely approach the building from the boundary.
- 4.5.2 Clause D1.3.3 sets out various criteria for access routes, including that the access route have adequate activity space (D1.3.3(a)) and safe cross fall and slope in the direction of travel (D1.3.3(c)). It includes specific requirements related to the movement of people, such as slip-resistant walking surfaces and criteria for stair treads, handrails and the like. I have discussed the obligations that apply in this instance in relation to an access route in more detail in paragraphs 4.5.11 to 4.5.22.
- 4.5.3 The objective of Clause D1.1(b) and the functional requirement Clause D1.2.2 are reflected in the performance Clauses D1.3.5 and D1.3.6 which concern vehicle spaces and circulation routes.
- 4.5.4 The term “circulation routes” is not defined in the Building Code or Acceptable Solution D1/AS1. “Circulation” means “movement to and fro or around something”,<sup>14</sup> and therefore in my opinion circulation routes are those paths for a vehicle to get to and from vehicle spaces – this could be anywhere between the street boundary and the building, and will include a driveway. In this respect Clause D1.3.5 is an exception to application of Clause D1 in respect of the movement of people “into, within and out of” buildings.
- 4.5.5 As shown in the table below some of the requirements in Clause D1.3.5, which concerns vehicle spaces and circulation routes, mimic the requirements in Clauses D1.3.1(d) and (e), and D1.3.3 which concern access routes. The requirements for circulation routes are distinct from those of access routes, and in my view this supports the approach that vehicle spaces and circulation routes (Clause D1.3.5) are not the same as an access route (Clauses D1.3.1 and D1.3.3).

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<sup>14</sup> Oxford Dictionary of English, 3<sup>rd</sup> ed., Oxford University Press, 2010

Access routes		Vehicle spaces and circulation routes
D1.3.1 Access routes shall enable people to:	D1.3.3 Access routes shall:	D1.3.5 Vehicle spaces and circulation routes shall have:
(d) manoeuvre and park cars (e) manoeuvre and park delivery vehicles required to use the loading space	(a) have adequate activity space	(a) dimensions appropriate to the intended use
	(c) have a safe cross fall, and safe slope in the direction of travel	(c) adequate queuing and circulation space
		(b) appropriate cross fall, and slope in the direction of travel
		(d) adequate sight distances

- 4.5.6 Clause D1.3.5 establishes obligations for vehicles in respect of vehicle spaces and circulation routes to ensure “the safe and easy unloading and movement of vehicles”. It also establishes obligations that apply to vehicles spaces and circulation routes that are intended to safeguard people from injury due to the potential conflict between people and vehicles when they share the same space.
- 4.5.7 I conclude therefore that the performance requirements in Clauses D1.3.1 and D1.3.3 do not apply to the length of the driveway to the property boundary (see below for more discussion on the access route). The driveway is a circulation route which provides for the movement of vehicles from the street boundary to the dwelling or parking space, and therefore the relevant performance requirements for the driveway are those set out in Clause D1.3.5.
- 4.5.8 Clause D1.3.5 requires:
- (a) dimensions appropriate to the intended use
  - (b) appropriate cross fall, and slope in the direction of travel
  - (c) adequate queuing and circulation space
  - (d) adequate sight distances.
- 4.5.9 While Clause D1.3.5 is primarily about vehicles, it does not exclude consideration of pedestrians where the vehicle space or circulation route is shared and there is potential for conflict between pedestrians and vehicles. When vehicles and pedestrians share the same space, Clause D1.3.5 will be relevant to ensure that:
- the dimensions of the spaces and circulation routes are appropriate to the use of the area by vehicles and pedestrians (D1.3.5(a))
  - the queuing and circulation spaces (D1.3.5(c)) and the sight distances (D1.3.5(d)) for the vehicle spaces and circulation routes are adequate to achieve the objectives in Clause D1.1(b) which concerns the safeguarding of people from injury resulting from the movement of the vehicles.
- 4.5.10 Clause D1.3.5(b) is not related to the safeguarding of people from injury resulting from the movement of vehicles or avoiding conflict between vehicles and pedestrians. What is required by Clause D1.3.5(b) is that the cross fall is “appropriate”; meaning the cross fall must be appropriate to meet the functional requirement and permit the safe and easy movement of the vehicle using the circulation route. It is the safety and stability of vehicles that is the relevant consideration in Clause D1.3.5(b).

### The access route

- 4.5.11 The owner contends that the driveway is an access route because the driveway functions as the means by which a pedestrian moves between the dwelling and the boundary. As noted in paragraph 4.4, I am of the view that the access route (as that term is defined and used for the purpose of the Building Code) is limited in terms of its application to the movement of people into, within and out of the building, and I have concluded that Clauses D1.3.1 to D1.3.3 that relate to access routes do not apply to the full length of the driveway. However, I offer the following comments regarding access routes as they apply in respect of dwellings, as I consider this issue is likely to be of interest to others faced with similar circumstances.
- 4.5.12 The term “access route” is defined in both Clause A2 of the Building Code and the definitions section of D1/AS1 as:
- a continuous route that permits people and goods to move between the apron or construction edge of the building to spaces within a *building*, and between spaces within a *building*
- 4.5.13 The terms “apron” and “construction edge” are not defined in either the Building Code or the Acceptable Solution. In the absence of a definition of those terms, I must look at the ordinary and natural meanings of these phrases in light of the purpose of the text.
- 4.5.14 In relation to a building, the Oxford Dictionary defines the term “apron” as: ‘A small area adjacent to another larger area or structure’<sup>15</sup>. Applying this definition to a typical dwelling, an apron may consist of adjacent building elements such as courtyards, patios, decks, stairs and pathways. In regards to the owner’s house, I consider it would encompass the patio area on the house’s northern side, and the relatively level portion of the proposed driveway immediately in front of the house and garage designed for parking and manoeuvring cars.
- 4.5.15 The term “construction” is defined in the Building Code as having a corresponding meaning to “construct”. Construct” is defined as follows:
- construct** in relation to a *building*, includes to build, erect, prefabricate, and relocate; and **construction** has a corresponding meaning
- 4.5.16 I consider the term “construction edge”, as used in the Building Code, refers to the outer limit of the construction, which is the work associated with the building. As I have already concluded that the performance requirements in Clauses D1.3.1 and D1.3.3 do not apply in respect of the driveway, for the purpose of these clauses, the “building” in this case is the detached dwelling. The “construction edge” is defined by the scope of the building work on the building, which people move into, within and out of. The construction edge is therefore the outer edges of the building work in respect of the dwelling.
- 4.5.17 Applying this interpretation to the owner’s house, I consider the obligation to provide an access route, and the performance requirements for such a route, extend from the relatively level portion immediately in front of the house and garage designed for parking and manoeuvring cars, up to and within the building. This excludes the driveway, which leads from the perimeter of the owner’s property to the apron associated with the house.
- 4.5.18 In reaching this conclusion, I have considered the wording and construction of the various clauses in Clause D1, in particular Clause D1.1, which sets the objectives for

<sup>15</sup> <https://en.oxforddictionaries.com/definition/apron> accessed 1 May 2018.

the clause (see paragraph 4.4). With the exception of accessible routes, these objectives are limited to movement “into, within and out” of buildings.

- 4.5.19 I consider that this interpretation applies equally to Clause D1.3.1, which is the main provision of interest in this case. Clauses D1.3.1(a), (b) and (c) are about enabling people to approach, enter and move within buildings. The access route approaching the main entrance of a building need only extend from the apron, which in my opinion, as stated above, is limited to those areas immediately adjacent to the building itself, or from the construction edge of the building, which is the building work in respect of the dwelling. To extend the requirement for an access route further in this case (for example to a property boundary) would be inconsistent with the stated objectives of Clause D1, which are limited to safe movement ‘into, within and out’ of buildings.
- 4.5.20 I note here that Clause D1.3.2, which relates to access routes for people with disabilities and does not apply to domestic dwellings, specifies that one such access route shall have features to enable people with disabilities to approach a building “from the street boundary”. I consider it material and supportive of the interpretation of access route, as discussed above, that Clause D1.3.2 was written in such a way to spell out that accessible routes must extend to the street or car park. In my opinion, this is clear recognition that in situations where an accessible route is not required (such as for a private house) any access route provided to the building will not necessarily extend this far.
- 4.5.21 In submitting that the relevant clauses for the driveway include Clause D1.3.1, the authority relied on Determination 2015/060, which considered what was meant by the terms “apron” and “construction edge” in the definition of an access route and Clause D1.3.1(a).
- 4.5.22 The authority is correct that Determination 2015/060 formed the view that the driveway was a shared vehicle/pedestrian access route. However, the building work at issue in that determination was a flight of stairs that was being replaced and no work was being undertaken on the driveway. The comments in that determination were merely observations about how Clause D1.3.1 might apply to the driveway, and should be treated with some caution.

## 4.6 The means of establishing compliance

4.6.1 Section 19 of the Act provides various means by which compliance with the Building Code can be established:

- (1) A building consent authority must accept any or all of the following as establishing compliance with the building code: ...
- (b) compliance with an acceptable solution: ...

4.6.2 The relevant Acceptable Solution in this case is D1/AS1<sup>16</sup>, and given that I have concluded the driveway is a circulation route, the relevant paragraph of D1/AS1 which addresses the movement of vehicles is as follows:

10.0 Movement of Vehicles

10.1 Car parking areas

10.1.1 AS/NZS 2890 Part 1 is an Acceptable Solution for car parking areas and circulation routes

<sup>16</sup> Acceptable Solution D1/AS1 2<sup>nd</sup> ed. amendment 6 (effective from 1 January 2017)



4.6.3 The relevant clause of that standard is 2.6, which concerns the design of domestic driveways<sup>17</sup>:

#### 2.6 DESIGN OF DOMESTIC DRIVEWAYS

##### 2.6.1 Width

The minimum width of domestic driveways shall be 3.0 m. On curved driveways other than at turns into garages or parking spaces the width shall be increased as given for domestic property in Table 2.2.

...

##### 2.6.2 Gradients

The maximum gradient of domestic driveways shall be 1 in 4 (25%)...

NOTE: It is recognized that limiting domestic driveway grades to 25 percent maximum may not be practicable in some particularly hilly residential locations. The services of a professionally qualified person with appropriate experience may be required to make a judgement as to whether a particular grade line design is safe and environmentally sustainable.

4.6.4 I note here that the standard is silent on whether it has taken into account the shared use of a domestic driveway by both pedestrians and vehicles.

4.6.5 The owner has expressed concern that the proposed driveway does not comply with the Acceptable Solution and does not meet the objectives and required performance requirements of Clause D1 in relation to the cross fall. The Acceptable Solution does not prescribe an “appropriate cross fall” for circulation routes or vehicle spaces (Clause D1.3.5(b) of the Building Code), and neither does the referenced standard prescribe cross falls for domestic driveways. Accordingly, in the following discussion I have considered the compliance of the driveway with regard to the relevant performance criteria in Clause D1.3.5(b).

## 4.7 Compliance of the driveway as a circulation route

4.7.1 The authority’s engineer’s report referred to the cross fall in the builder’s survey plan, which in turn shows the cross fall varies between 1 in 59 (1.70%) and 1 in 6.4 (15.6%). The authority’s engineer offered his opinion that cross falls exceeding 1 in 8 (12.5%) represent the “upper limit” of what should be accepted, though it is not clear what the engineer based this on. However, the authority’s engineer also noted the area where the driveway exceeds this is where it crosses the footpath, and that this is necessary to match the gradient of the footpath and the road.

4.7.2 The owner’s lawyer submitted that the maximum cross falls are halfway down the driveway, and expressed concern that:

- the cross falls “are not resisting the lateral centrifugal forces of a vehicle”, and
- no consideration has been given for slip resistance, but only “a reasonably skid resistant concrete surface”.

4.7.3 The lawyer submitted the cross falls, based on a 3-D model contour study by a company of architectural designers, are:

... 18.13% to 19.8% cross falls perpendicular to the realistic vehicle tracking curve [between chainage 8 and 14], and 16.37% cross fall perpendicular to driveway centreline (average) [at approximately chainage 9].

<sup>17</sup> The term “domestic driveway” is defined in paragraph 1.3.12 of AS/NZS 2890.1 as meaning “A vehicular path within a domestic property”

4.7.4 The drawings for the proposed building work<sup>18</sup> show a cross fall within the site from 8.6% (1 in 12.4) to 12.45% (1 in 8) between chainage 6 to 14, and at chainage 16 reducing to 3.92% (1 in 25).

4.7.5 For simplicity I have listed the various cross falls discussed above in the following table:

	Range			
	ratio	%	ratio	%
Authority	1 in 6.4	15.6	1 in 59	1.7
Owner	1 in 5.05	19.8		
Drawings	1 in 8	12.45	1 in 25	3.92

4.7.6 Cross fall on driveways is typically a reflection of the underlying land contour and is used to manage surface water. The greater the cross fall on a circulation route, the less comfortable it will be for occupants of the vehicle and the more difficulty experienced in manoeuvring vehicles. Extreme cross fall can lead to vehicles sliding laterally, particularly in wet or icy conditions, or even tipping over<sup>19</sup>.

4.7.7 Some councils set standards for the construction of driveways and private ways, including the likes of maximum gradient, minimum width and turning radius. For example, Auckland Council's "Driveways and access standards"<sup>20</sup> sets a maximum gradient of 1 in 4 (24%) for shared driveways serving between two to five sites, and 1 in 5 (20%) for shared driveways serving six to ten sites. The authority has advised that the Tauranga District Plan doesn't set standards for construction of driveways and for this reason the authority sought engineering advice on this matter. I note here that vehicles may experience the gradient of shared driveways and the gradient of steep roads in a similar manner to cross fall when turning across the width of the shared driveway or road, albeit for a relatively short period of time, and I have taken that into account in considering compliance of the driveway in this case.

4.7.8 Taking the greatest cross fall measure in this instance, being that submitted by the owner's lawyer (1 in 5, or 19.8%), I am of the view that although the cross fall may not be comfortable for the occupants of the vehicle it is not so great that it fails to meet the functional requirement for vehicles using the circulation route. In reaching this conclusion I have taken into account: the cross fall in combination with the gradient<sup>21</sup>; the likely range of speed when manoeuvring the length of the driveway given the driveway's length; the length of driveway in which the maximum cross fall and maximum gradient is experienced; and the location of the site with regard to likely environmental conditions. In conclusion, I consider the proposed driveway is compliant with Clause D1.3.5(b) as a circulation route in relation to its cross fall.

4.7.9 I note here that each determination is made on a case-by-case basis. The fact that I have reached this conclusion in relation to the cross fall of this particular proposed driveway in this location does not mean that I would reach the same conclusion in respect of another driveway.

<sup>18</sup> Drawing No. 631645-M-E-D002 (sheets 01 to 08) provided with the application for this determination: cross sections from sheets 06 and 07, and longitudinal gradient from sheet 04. I note a later revision of sheet 07, dated November 17 shows cross fall of 12.45% at chainage 12 and 8% at chainage 14.

<sup>19</sup> The propensity for rollover is dependent on vehicle metrics and dynamic driving conditions, and varies by vehicle type and model.

<sup>20</sup> <https://www.aucklandcouncil.govt.nz/building-and-consents/types-resource-consents/subdivision-of-property/Pages/driveways-access-standards.aspx> (accessed 7 September 2018)

<sup>21</sup> The longitudinal gradient is noted on the drawings as being a maximum of 22% (1 in 5), which is less than that provided for in the standard (refer paragraph 4.6.3).

## **4.8 Conclusion**

4.8.1 I conclude in the current case that the access route to the owner's house extends from the apron associated with the house, and that this is the external edge of the parking and manoeuvring area immediately outside the garage. The access route does not include the proposed driveway leading from this point to the edge of the owner's property (and from there to the road beyond) – the relevant Building Code clause for this section of the driveway is Clause D1.3.5, and specifically Clause D1.3.5(b) in relation to its cross fall. I conclude the proposed driveway complies with Clause D1.3.5(b).

## **5. The decision**

5.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the proposed driveway complies with Clause D1.3.5(b).

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 20 May 2019.

Katie Gordon

**Manager Determinations**

## Appendix A: The relevant legislation, Acceptable Solution and standards

### A.1 The Building Act 2004

The relevant sections of the Building Act discussed in this determination are as follows:

*Meaning of building*

#### **8 Building: what it means and includes**

- (1) In this Act, unless the context otherwise requires, building—
- (a) means a temporary or permanent movable or immovable structure (including a structure intended for occupation by people, animals, machinery, or chattels); ...

### A.2 The Building Code

Clause D1 of the Building Code sets the objective, functional requirements and performance criteria that apply to access routes. The relevant provisions for the purposes of this determination are as follows:

#### **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*, ...

##### **Functional requirement**

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

**D1.2.2** Where a *building* is provided with loading or parking spaces, they shall be constructed to permit safe and easy unloading and movement of vehicles, and to avoid conflict between vehicles and pedestrians.

##### **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*, ...  
 (d) manoeuvre and park cars, and ...

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

- (c) have a safe cross fall, and safe slope in the direction of travel, ...

**D1.3.5** Vehicle spaces and circulation routes shall have: ...

- (b) appropriate cross fall, and slope in the direction of travel...

(I note that Clause D1 also sets requirements specifically for accessible routes, for use by people with disabilities, but that those requirements do not apply to private housing.)

### A.3 The Acceptable Solution

An Acceptable Solution provides one way, but not the only way, of complying with the Building Code. The relevant paragraphs of the Acceptable Solution D1/AS1 for the purposes of this determination are as follows:

#### 1.2 Slope

##### 1.2.1 Slope in direction of travel

Acceptable slopes for different types of *access routes* are shown in Figure 2.

##### 1.2.2 Cross fall

...

The surface of any *access route* (including an *accessible route*) shall not have a cross fall steeper than 1:50...

#### 10.0 Movement of Vehicles

##### 10.1 Car parking areas

10.1.1 AS/NZS 2890 Part 1 is an Acceptable Solution for car parking areas and circulation routes.

### A.4 Australia/New Zealand Standard AS1/NZS 2890.1

Paragraph 10 of D1/AS1 cites New Zealand Standard AS/NZS 2890.1 as an Acceptable Solution for car parking areas and circulation routes, which includes domestic driveways. The relevant provisions of that standard for the purposes of this determination are as follows:

#### 1.1 SCOPE

This Standard sets out the minimum requirements for the design and layout of off-street parking facilities, including multi-storey car parks for motor cars, light vans and motorcycles. It includes access and egress requirements for both public and private car parks, and car parking on domestic properties...

#### 2.6 DESIGN OF DOMESTIC DRIVEWAYS

##### 2.6.1 Width

The minimum width of domestic driveways shall be 3.0 m. On curved driveways other than at turns into garages or parking spaces the width shall be increased as given for domestic property in Table 2.2.

For apron widths at turns into enclosed garages, see Clause 5.4.

Minimum aisle or apron widths for turns into open sided parking shall be as for user Class 1 or 1A requirements in Figure 2.2.

##### 2.6.2 Gradients

The maximum gradient of domestic driveways shall be 1 in 4 (25%)...

NOTE: It is recognized that limiting domestic driveway grades to 25 percent maximum may not be practicable in some particularly hilly residential locations. The services of a professionally qualified person with appropriate experience may be required to make a judgement as to whether a particular grade line design is safe and environmentally sustainable.

## Appendix B: Submissions received

### B.1: The application and initial submissions

<b>Authority / authority's lawyers (5 February 2018)</b>
Application for determination, covering letter and supporting documentation.
<p>The particular matter concerns the question of whether the driveway, which is shared by vehicles and pedestrians, is an access route (as defined in D1/AS1) and whether it complies with the relevant performance criteria in Clause D1 of the Building Code.</p> <p>Considered the meaning of an "access route" as defined in the Building Code and Acceptable Solution D1/AS1. Cited Determination 2015/060, which considered what was meant by the terms "apron" and "construction edge" in the definition of an access route and Clause D1.3.1(a). The authority supported that determination's finding that the driveway in that case was a 'shared vehicle pedestrian access route', and that the construction edge for the building work was 'the driveway adjacent to the footpath'.</p>
Referred to its expert's reports and expressed its opinion that the proposed driveway design was both compliant with Clause D1 of the Building Code and 'safe', in particular with respect to the longitudinal gradient and the cross fall.
<p>Enclosed copies of:</p> <ul style="list-style-type: none"> <li>▪ the notice to fix</li> <li>▪ the plans for the proposed driveway design</li> <li>▪ the various experts' reports.</li> </ul>
<b>Owner / owner's lawyers (19 April 2018)</b>
Set out the background to the dispute and reiterated the owner's opinion that the proposed driveway design does not comply with Clause D1 or the Acceptable Solution as a shared vehicle and pedestrian access route. Clause D1.3.3(c) required the driveway to have "a safe cross fall, and safe slope in the direction of travel", and paragraph 1.2.2 of AS1/D1 specified that the cross fall for a pedestrian access route should not exceed 2%. The owner's lawyer acknowledged that acceptable solutions were not the only means of complying with the Building Code, but contended that "...where an acceptable solution specifies a maximum cross fall as is the case here, [the owner] submits that there can be no alternative way to comply...".
Submitted that the authority's expert had 'no basis' for the assertion that a 12.5% cross fall was safe. In addition, the cross falls supplied by the builder were 'incorrect'. In support of this contention, the owner's lawyers provided copies of 'rendered drawings and cross sections' from a company of architectural designers. These new drawings showed 'cross falls of 19.20%, 19.80%, 18.25% and 8.13% perpendicular to the realistic vehicle tracking between chainage 8 and 14 as well as a cross fall of 16.37% perpendicular to the centre line of the driveway at approximately chainage 9'.
Concluded that the 'individual design considerations of gradient, cross fall and curvature' should not be considered in isolation, as in combination they created an unsafe driveway that was 'potentially undermining the objectives of clause D1 of the building code'.
<p>Enclosed copies of:</p> <ul style="list-style-type: none"> <li>▪ the original consented plans for the building work</li> <li>▪ the notices to fix</li> <li>▪ the various expert's reports and associated plans</li> <li>▪ correspondence between the parties</li> <li>▪ various third party documents relating to safe driveways designs.</li> </ul>

**B.2: The first draft determination and submissions in response**

<b>The Ministry (13 June 2018)</b>
<p>Issued a first draft determination to the parties for comment.</p> <p>The draft concluded: the driveway is not a building because it does not have any of the parts that make it a “structure” as that term is used in the Act; for the purpose of Clause D1 the access route extends only to the apron, which includes the relatively level portion immediately in front of the house and garage; and accordingly there is no requirement for the proposed driveway to comply with Clause D1</p>
<b>Builder / builder’s lawyers (28 June 2018)</b>
<p>Agreed with the approach taken in the first draft of this determination in relation to section 117, namely that the fact section 117 specifically extends the interpretation of “building” to include driveway implies that the general definition is not so expansive. The lawyer submitted driveways do not come within the meaning of either “structures” or “buildings” and so the Building Code does not apply, and only a small part of the driveway is an access way in terms of the Building Code.</p>
<b>Authority / authority’s lawyers (28 June 2018)</b>
<p>Did not accept the draft.</p> <p>Submitted that:</p> <ul style="list-style-type: none"> <li>▪ Although district plans can contain rules for formation of driveways, the Tauranga District Plan doesn’t, which is why the authority sought engineering advice. Both the authority’s and the owner’s engineers considered that Clause D1 applies, as the driveway provides the only vehicle and pedestrian access to the house.</li> <li>▪ There is a requirement in the Building Code to provide safe pedestrian access from the street to the house, and the owner or occupier and visitors will have to use the driveway for this purpose.</li> <li>▪ Under section 7 of the Act, sitework is included as building work. The ‘extensive sitework involved with the formation of the proposed driveway (that also includes the construction of retaining walls to the boundary)’ qualifies as building work under this definition.</li> <li>▪ The legislators have provided specific exclusions to Clause D1, yet have not chosen to specifically exclude domestic driveways from access routes; ‘if legislators intended to exclude residential driveways from having to comply with Clause D1 then they would have specifically done so’.</li> </ul>
<p>Did not agree that the facts in the present case were ‘so different to those in Determination 2015/060 that the owner’s driveway should not also be considered a shared vehicle access route’. The authority relied on Determination 2015/060 and seeks an explanation as to how the two determinations differ.</p>
<p>Considered that: ‘To limit the area of compliance to the level area adjacent to the garage, without considering the safety and functionality of manoeuvring to that area from the property boundary appears to conflict with the intent of the Building Act and Building Code’, which include ensuring the safety of people who use buildings.</p>
<p>Stated in addition that the first draft of the determination does not address a number of relevant Building Code clauses, which the authority considers relevant to domestic driveways including Clauses D1.1(a) and (b); D1.2.1; D1.2.2; D1.3.1(a), (b) and (d); D1.3.3(a) to (d); and D1.3.5.</p>

**Owner / owner's lawyers (28 June 2018)**

Did not accept the first draft of the determination and submitted the driveway is itself a building, and in any event is an access route, whether it is a building or not.

Contended that the driveway is a building and must comply with the Building Code on the following basis:

- '...the driveway is a building within the meaning of section 8, when interpreted in accordance with section 5 Interpretation Act 1999 and case law relating to it. Section 117 does not curtail the general definition of "building" in section 8 in any way except in the specific circumstances to which section 117 applies.'
- The wording of section 8 must be cross-checked against the purpose of the Act to ensure it is interpreted consistently with that purpose<sup>22</sup>. The purposes of the Building Act 2004 include ensuring that people who use buildings can do so safely and without endangering their health.
- Driveways are not specifically included in the definition of building under section 8 or excluded under section 9. 'Therefore one must look to the general provision to determine whether on the facts of this case, the driveway is a building.'<sup>23</sup> In doing this, one must look at the 'indications provided in the enactment'. Section 117 has no bearing on the general definition in section 8 except in cases where section 117 applies, and that section only applies to sections 118 to 120. It does not and was not intended to exclude driveways from the section 8 definition.
- Sections 117 to 120 fall in Part 2(5) of the Act, which relates to code compliance certificates, certificates of acceptance and compliance schedules; and the inclusion of driveways in section 117 is confined to these circumstances. In situations where there is a clash between legislative provisions, 'the specific provision only overrides the general when the specific definition applies.'<sup>24</sup> The current case does not involve access for people with disabilities, therefore it is inappropriate to rely on the section 117 definition to curtail the general definition.
- The relevant purpose in this case is the safety of people who use the building and enabling people to escape the building in the event of fire. To omit driveways from being classified as a building would mean construction of a driveway could be carried out with disregard to safety of people using the driveway.
- The driveway is permanent and immovable, and is a structure that required specific design by a chartered professional engineer. The driveway directly attaches to the house and required a significant retaining wall to be constructed, which triggered the application of Clause F4.3.1 of the Building Code. To decide that the Building Code does not apply to the driveway in this situation is 'an irrational outcome'.
- The principles set out in Determination 2016/002 support the owner's submission that the driveway is a building; although the facts of that determination are distinguishable from the present case.

Further submitted that even if the driveway is not a building, it is still an access route.

- Because the driveway required 'specific engineering requirements' it extends the construction edge or apron of the building to where 'the driveway construction finishes' near the road.
- This interpretation is supported by the definition of "construct" in the Act and Building Code, which uses the words "in relation to" a building, and does not mean construction "of a" building. It is clear on the facts of the case that the driveway has to be 'built and erected' in terms of the definition.
- The driveway is itself a structure, 'either in its own right or as part of the construction of the dwelling' and the apron of the building starts at the construction edge of this structure, being the end of the driveway by the road. In addition, the construction of the retaining wall, which includes the 'cut and fill and compaction of the driveway', extends the construction edge of the dwelling to the roadside.

<sup>22</sup> Citing *Commerce Commission v Fonterra Co-Operative Group Ltd* [2007] NZSC 36, [2007] 3 NZLR 767.

<sup>23</sup> Citing *Thames-Coromandel District Council v Te Puru Holiday Park Ltd* [2011] NZRMA 287.

<sup>24</sup> Citing *Jennings Roadfreight Ltd (in liq) v Commissioner of Inland Revenue* [2014] NZSC 160, [2015] 1 NZLR 573.



- The only safe way for people to ‘achieve a safe distance from the house at speed in the event of fire’ is via the driveway. If the driveway is excluded from being an access route this could result in people not being able to safely exit the property in the event of fire. This is a ‘compelling’ reason to include the driveway within the definition of an access route in the current case.
- The driveway is the only way for pedestrians to access the building from the road, therefore it must be safe for them to use; Determination 2015/060 applies.

Submitted that the first draft of the determination failed to consider whether the driveway complies with the Building Code, and other matters raised by the owner.

#### **Owner / owner’s lawyers / consultant (9 August 2018)**

Provided a further submission prepared by a consultant. The consultant provided an analysis of the disputed matters in the determination and noted the following:

- There are practical arguments that could be made to support a view that the construction edge of the building extends to the road, namely:
  - the scope of works as defined in the construction contract and the common understanding that the construction edge is defined as the work under the construction contract and included in the building consent
  - the coverage of driveways in D1/AS1 can be taken as inferring a driveway has a Building Code obligation, especially given the Acceptable Solution cites AS/NZS 2890.1 as a means of compliance
  - inferred from driveways being included in the Ministry’s Guidance on Defects and Tolerances<sup>25</sup> – while used for contractual purposes, it still relates to building work as defined under the Act.
- The first draft of the determination took the view that the driveway is not a structure, however did not consider whether the design of the driveway and retaining wall may have some structural interdependencies. In addition, the driveway may also have been designed not just to distribute loads imposed by vehicles onto the ground below – there may be some design for cantilever effects from any loss of support.
- Ancillary buildings described in Clause A1 (Classified Uses) of the Building Code includes “path” in the examples given, and while it does not specify a driveway, it will be difficult to see how a path could be included but not a driveway.

Considered the first draft of the determination took a narrow view of the term “construction edge” that was not supported by the interpretation of that term adopted in both contractual and consenting practices and inferred in Ministry documents covering both Building Code and contractual matters.

<sup>25</sup> *Guide to tolerances, materials and workmanship in new residential construction 2015*, Ministry of Business, Innovation and Employment (refer section 1 Landscaping and ground)

**B.3: The second draft determination and submissions in response**

<b>The Ministry (7 September 2018)</b>
<p>Issued a second draft determination to the parties for comment.</p> <p>The second draft determined that the driveway was a building, but not the sort of building that people moved into, within and out of. Accordingly, the performance requirements in Clauses D1.3.1 and D1.3.3 relating to pedestrian access routes did not apply to the driveway. Instead the requirements in Clauses D1.3.1 and D1.3.5 relating to manoeuvring and parking cars, and to circulation routes applied, and the driveway complied with these.</p>
<b>Authority / authority's lawyers (7 September 2018)</b>
<p>Accepted the second draft determination and asked that it be finalised.</p>
<b>Owner / owner's lawyers (11 October 2018)</b>
<p>Did not accept the second draft determination.</p> <p>Agreed that the driveway is a building, and that Clause D1.3.5 applies to it.</p>
<p>Submitted that the driveway is an access route as defined in the Building Code. It comes within the apron and construction edge of the dwelling, and is the only way to access the dwelling from the street.</p> <p>In addition, the driveway is an access route as a building in its own right, as people enter it and walk on it, in the same manner that they walk on the floor of a building. It forms a continuous route from the construction edge of the driveway to spaces within the driveway.</p>
<p>Submitted that the second draft of the determination implies that the objectives in Clause D1 only apply to buildings with ceilings and walls, but these are irrelevant. Open stages and decks are examples of buildings without walls that people walk on. The examples given in the second draft of fences, telecommunication poles and retaining walls are structures that people do not walk on. However, people do walk on driveways. Walking on a driveway requires entering it and moving through it. Just because it doesn't have walls doesn't mean that the performance requirements in Clauses D1.3.1 to D1.3.3 don't apply. They do apply and the rationale in the second draft is fundamentally flawed.</p>
<p>Asserted that the driveway is not safe for pedestrian access and does not comply with Clause D1 for the reasons given in earlier submissions. The determination should consider each of the performance requirements in Clause D1.3.1 separately, as they apply to driveways, and not dismiss them collectively.</p> <p>The driveway is not safe for vehicles and does not comply with Clause D1, as it relates to vehicles. The terms 'circulation route' and 'access route' are not mutually exclusive, and the fact that Clause D1.3.1(d) requires an access route to enable people to manoeuvre and park cars, shows that the term access route applies to areas where people drive cars. Both circulation routes and access routes require safe cross falls and slope in the direction of travel.</p>
<p>Stated that the second draft of the determination fails to consider the combined effect of the vertical slope and the cross fall when vehicles use the driveway. There is no basis for the examples of extreme cross falls given in the draft, and the inference that all cross falls below this are safe is wrong.</p> <p>Referenced various local authority guidance from New Zealand and the United Kingdom as to what the maximum cross fall for driveways and private accessways should be and these ranged from 2 per cent to 6 per cent.</p> <p>Stated that it is not correct that vehicles turning off a shared driveway will experience the gradient as cross fall, as most of the turning occurs on the road. A vehicle cannot turn off a private way with a 25 per cent gradient because the vehicle will 'bottom out or scrape'.</p>

Concluded that the 'actual cross fall of the driveway, in combination with the steep vertical gradient, cannot possibly be considered safe for vehicles'.
<b>Builder / builder's lawyers (12 October 2018)</b>
Supported the decision reached in the second draft of the determination.
<b>Owner / owner's lawyers (2 December 2018)</b>
Advised the owner wished the determination process to be terminated. Provided various documents concerning covenants.
<b>Owner / owner's lawyers (13 December 2018)</b>
Advised the owner wished the determination process to continue. Raised issues regarding breaches of covenants and concerns regarding the foundations of the driveway being 'within the line of influence of the foundations of the house' <sup>26</sup> . Provided various documents and correspondence concerning the covenants.

#### B.4: The third draft determination and submissions in response

<b>The Ministry (18 December 2018)</b>
Issued a third draft determination to the parties for comment. The third draft determined that the driveway was a building, and accordingly must comply with the Building Code, but the performance criteria in Clauses D1.3.1 and D1.3.3 relating to pedestrian access routes did not apply to the driveway. Instead the requirements in Clauses D1.3.1 and D1.3.5 relating to manoeuvring and parking cars, and to circulation routes applied, and the proposed driveway complies as a circulation route - specifically in relation to the compliance of the cross fall with Clause D1.3.5(b).
<b>Builder / builder's lawyers (14 January 2019)</b>
Accepted the findings of the third draft determination and no intention to make further submissions.
<b>Authority / authority's lawyers (15 January 2019)</b>
No wish to make further submissions on the third draft of the determination but wished to discuss the implications of certain aspects of the determination. Advised the owner that the authority would consider issues raised by the owner that were outside the scope of the determination if/when an application for an amendment to the building consent is made.
<b>Owner / owner's lawyers (23 April 2019)</b>
Provided copies of: <ul style="list-style-type: none"> <li>▪ screen shots of messages between the owner and an officer of the authority concerning the retaining wall</li> <li>▪ notice to fix dated 16 February 2017</li> <li>...</li> </ul>

<sup>26</sup> These are outside the ambit of the determination

<ul style="list-style-type: none"> <li>▪ correspondence dated 11 July 2017 from a firm of structural, geotechnical, civil and fire engineers regarding a timber pole retaining wall and the masonry block retaining wall, with attached calculations</li> <li>▪ correspondence dated 9 April 2019 relating to a Producer Statement Construction Review (PS4) concerning the retaining wall</li> <li>▪ photographs of the retaining wall.</li> </ul>
<p>Based on documents requested under the Official Information Act, the owner submitted :</p> <ul style="list-style-type: none"> <li>▪ there is no documentary evidence to support statements made in paragraph 4.7.8</li> <li>▪ reiterating the view that the access route for a pedestrian extends to the street end of the driveway and that this view is supported in some of the discussion documents</li> <li>▪ reiterating views previous expressed and which the owner considered were supported in the documents, including: <ul style="list-style-type: none"> <li>○ that the circulation route is one that provides passage for vehicles to and from vehicle spaces, and logically this will commence at the boundary</li> <li>○ the use of the driveway is as a shared route for vehicles and pedestrians and must be assessed against each of the criteria in Clause D1.3.5 in relation to use by pedestrians - the cross fall and slope are not adequate for pedestrian use and the proposed driveway does not comply.</li> </ul> </li> </ul>
<p>Submitted concerns relating to the structural stability of the retaining wall supporting the house and the retaining wall supporting the driveway, as well as structural concerns for the proposed driveway. These matters are outside the scope of this determination.</p>
<p><b>Builder / builder's lawyers (6 May 2019)</b></p>
<p>Latest submission of the owner is of limited relevance and should not impact on the outcome of the determination.</p>